

01

DISCHARGE TIME FROM POST ANESTHESIA CARE UNIT OF PATIENTS UNDERGOING BREAST SURGERY ADMITTED AS DAY CASES

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Introduction: Post Anaesthesia Care Unit (PACU) was introduced in 1923 and is the preferred location for the immediate recovery of the postoperative patient. Number of factors impact on length of stay in PACU such as duration of surgery, age of the patient and associated comorbidities. A particular need has been identified to establish criteria to assess a patient's "home readiness" given the increasing frequency of day surgery procedures. The day care surgery offers several advantages to patients, doctors and hospital administration including cost saving. It is expected to be 25-75% lesser in cost than that of a similar inpatient procedure. A review is sought to identify current best evidence for the effectiveness and feasibility of components of a scoring system to assess patients following surgery and anaesthesia.

Aim: The aim of this audit was to analyse the duration of stay of patients in PACU undergoing breast surgery as a day case using Post Anaesthesia Discharge Scoring Scale (PADSS).

Method: This audit was conducted from May 2015 to August 2015. A total of 150 patient's data was analysed. Patients with ASA score ranging from 1 to 3 were studied. The average age of the patient was 42.4 (range 18-64), who underwent day case breast surgery. After the surgery, all patients were shifted to PACU and the time-in was documented by the PACU nurse as soon as the patient arrived. The PADSS discharge criteria was used to assess the readiness of the patient to be discharged. The "vital signs" criteria could never be below 2, and none of the other single criteria could be equal to "0" at the time of discharge. Patients who scored 9 or 10 were considered to be ready for an immediate discharge. The final time out was taken when the PACU nurse discharged the patient from chair recovery.

Results: Mean time of stay in PACU for the four months was 187mins. (May: 186 mins, June: 200 mins, July: 166 mins, August: 206 mins).

Conclusion: There is no gold standard for the PACU discharge time using PADSS, however our data is comparable with other international institutions. We need to analyse the cause of variability in discharge time duration and develop local protocols in order to improve our current standards.

02

COMPARISON OF HEMOGLOBIN MEASUREMENT WITH NONINVASIVE PULSE CO-OXIMETRY AND CONVENTIONAL HEMATOLOGY ANALYZERS

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Background: A CO-oximeter is a device that can be used to assess hypoxia, a condition in which tissues are deprived of oxygen. Additionally, CO-oximeters measure the dysfunctional haemoglobins or dyshaemoglobins; these include relative blood concentrations of carboxyhaemoglobin and methaemoglobin.

Devices, such as those based on the Coulter Principle, are lab-based, provide discrete measurements and require the collection of arterial or venous blood samples for analysis. Point of Care Testing (POCT) devices are also available to measure total haemoglobin at bedside.

CO-oximetry allows non-invasive continuous measurement of the percentage of haemoglobin in the arteries with bound oxygen.

Aim: The aim of this audit is to compare the results of haemoglobin measurement of haematology analyser and CO-oximeter technology.

Methods: We collected data including preoperative haemoglobin measurements with the non-invasive pulse co-oximetry and haematology analysers and compared the results. Collectively the data was analysed and the results of non-invasive co-oximetry were compared with the conventional haematology analyser method for accuracy.

Results

We analysed data of 32 patients, the mean difference between SpHb and Hb was 2gm/dl with range from -6.4gm/dl to +6.1 gm/dl. The difference between SpHb and Hb of 2gm/dl and less than 2gm/dl was found in 59.37 % of patients.

Conclusions: In our institution we could not find that CO-oximeter results are similar to haematology analyser. We suggest that further evaluation of CO-oximetry is warranted before it can be confidently used in clinical practice.

03

RELATION OF EPIDURAL SPACE DEPTH WITH BMI; A RETROSPECTIVE STUDY IN 200 PATIENTS AT SKMCH&RC DURING ONE YEAR PERIOD

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Background: Epidural anaesthesia has been used to provide analgesia for lower abdominal, thoracic and orthopaedic surgeries. Success of the epidural technique depends upon the correct identification of epidural space. We conducted a retrospective study relating the distance from skin to the epidural space and BMI of the patient.

Objective: To find a linear relation between epidural space depth and BMI in order to predict epidural space depth according to the BMI of the patient.

Methodology: 200 ASA 1 and 2 adults patients of age group 20-70 years, mean age 45years, scheduled for surgery or pain relief under epidural block, were included in the study. Data was collected from hospital record through hospital information system. 100 patients were those who underwent insertion of lumbar epidural and 100 were those who underwent insertion of thoracic epidural. Patients of both groups were further subdivided into 2 subgroups of 50 patients with BMI >30 and 50 patients with BMI <30. The distance from skin to epidural space was measured according to LEE's lines.

Results: After analysing data it was found Mean age of patients with BMI < 30 was 45 years in males and 44.6 in females. Mean age of patients with BMI > 30 was 48.43 ± 14.63 years in males and 53.80±10.59 years in females. This difference was statistically ($p > 0.10$) insignificant. It was seen that the depth of epidural space varied between 39.85 ± 6.44mm to 46.00 ± 7.87mm in patients with age subgroup between 20 years to 70 years (with BMI < 30). This difference is statistically not significant ($p > 0.10$) and in patients with BMI > 30, the depth of epidural space varied between 50.13 ± 4.79mm to 53.33± 6.92 mm amongst patients with age subgroups between 20 to 70 years,. This difference was statistically not significant ($p > 0.10$). However, in all the age sub groups the depth of epidural space from skin is significantly more in patients with BMI > 30 than in patients with BMI <30 ($p < 0.01$).

Conclusion: There is a positive association between BMI and epidural depth, but not with age, sex, and race.

04

FACTORS ASSOCIATED WITH FREQUENCY OF POST-OPERATIVE SORETHROAT

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Background: Post-operative sore throat is considered to be one of the most common complications after general anaesthesia. Although it is minor but very distressing for the patients.

Objectives: We conducted this study to determine the frequency of post-operative sore throat in our institution and association of various factors with post-operative sore throat.

Material & Methods: This was an observational study. In first part, patients were interviewed about having sore throat after 24 hours of general anaesthesia and in second part we looked for the association of various factors with post-operative sore throat by using a specially designed proforma.

Population: This study was conducted at Hameed Latif Hospital for the duration of 6 months. Every patient undergoing surgery under general anaesthesia was included in this survey.

Results: The frequency of post-operative sore throat was found to be 56% in our population. No significant factor was found to be associated with this except for female gender.

Conclusion: This study shows a significantly high frequency of post-operative sore throat in our population. We suggest more studies in larger populations to look for significant risk factors that contribute to sore throat.

05

VENTILATOR ASSOCIATED PNEUMONIA PROTOCOL COMPLIANCE AUDIT IN ICU-1

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Introduction: Lung infections account for 65% of all nosocomial infections in ICU. Of these patients 90% are usually on mechanical ventilation and 50% of which develop Ventilator Associated Pneumonia (VAP) in first 4 days of ICU stay.

Background: Decreased incidence of VAP due to practice of VAP care bundles is well documented. In this audit we intended to observe and document the compliance of our VAP care bundles.

Method: A proforma was designed and compliance of each component of the VAP care bundle was checked every day in the morning round on all patients in ICU on mechanical ventilator.

Results: The data was collected on 193 patients over a period of one year from July, 2014 to July, 2015. The overall compliance in the three institutes was found to be 75.8%.

Conclusions: This audit allowed us to identify factors which still affect our ability to practice VAP care bundles. Further efforts are needed to improve the level of care we give to these patients.

06

AUDIT OF PHANTOM LIMB PAIN PREVALENCE AND ANAESTHETIC MANAGEMENT

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Background: The first medical description of post-amputation sensation was given by Ambroise Paré (1510–1590), a French military surgeon, who noticed that patients may complain of severe pain in the missing limb following amputation. He characterized the post-amputation syndrome and proposed different models to explain the pain. Mitchell coined the term ‘phantom limb’.

Phantom limb pain: Painful sensations referred to the absent limb.

Phantom limb sensation: Any sensation in the absent limb, except pain.

These elements often coexist in each patient and may be difficult to separate. Nerve injury followed by a series of changes in the peripheral and the central nervous system and that these changes may play a role in the induction and maintenance of chronic phantom pain.

Aim:

To assess incidence of 1) Phantom limb pain (PLP) in upper limb, 2) Phantom limb pain (PLP) in lower limb.

And 3) Phantom limb pain (PLP) in male/female at Shaukat Khanum Memorial Cancer Hospital & Research Centre, Lahore.

Methods:

Retrospectively analysed all patients that underwent elective or emergency amputation from 1st June 2014 to 31st May 2015. We collected a data of all patients from local Hospital-information-System (HIS).

Sample:

50 Patients that underwent elective or emergency surgical amputation from 1st June 2014 to 31st May 2015.

Results: 1) Incidence of phantom limb pain in upper limb is 25.3%; 2) Incidence of phantom limb pain in lower limb is 35.7%; 3) Incidence of phantom limb pain in male 19.2% ; 4) Incidence of phantom limb pain in female is 45.5%.

Conclusions: Phantom limb pain is a relatively common and disabling entity. Specific mechanism-based treatments are still evolving, and most treatments are based on recommendations for neuropathic pain. A synthesized hypothesis explaining the phenomenon of PLP is necessary in the future for the evolution of more specific mechanism-based treatment recommendations.

07

IMPACT OF CHEST X-RAYS (P.A VIEW) ON ANAESTHESIA PLAN IN CANCER PATIENTS UNDER GOING ELECTIVE SURGERY

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Background: It is the routine of our hospital that all patients undergoing any kind of surgery in any specialty are subjected to routine pre-op chest x-ray (CXR). However there is increasing evidence that this practice does not have much influence on patient management and thus could be limited to a very small number of patients in whom it is justified. We conducted this study to know the significance of routine pre-op x-rays chest in patients admitted in a surgical unit for elective surgery and to what extent such routine x-ray affected our surgical intervention

Aim: The aim of this study is to see how justifiable it is to do pre-operative chest X-ray in routine in every patient for general anaesthesia because by changing this practice we can not only reduce unnecessary health costs and labour but also substantially reduce the radiation exposure both to the subjects and to general population.

Methods: It is a cross sectional study in which 500 consecutive adult patients from surgical department for elective surgical procedures were included. Thoracic surgery Patients were excluded.

The age, gender, diagnosis, procedure to be performed, co-morbidity, CXR abnormality according to Radiologist (Yes/No), clinical findings on chest auscultation by anaesthesia resident doctor (normal /abnormal), delay in operation/ Change or modification in anaesthesia plan on basis of CXR was recorded. The influence on decision making regarding fitness of patients for general anaesthesia was also determined. Data was analysed by using SPSS-22

Results: Out of the total 500 X-rays initially included in this study, 470 (94%) were reported to be normal, 30 (6%) as abnormal. Regarding history of co-morbidities, 66% of our patients had some sort of co-morbidity. Amongst the 30 patients with abnormal CXR, CXR of 2 (6.6%) patients were having impact on anaesthesia plan i.e. general anaesthesia changed to spinal anaesthesia

Conclusions: Routine CXR for General Anaesthesia in cancer patients can be minimized on the basis of history and clinical examination.

08

INFORMATIONAL CARE & INFORMED CONSENT

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Background: Principles of informed consent are ethically, morally & legally grounded in physician's responsibility to patients. All patients' should be allowed to participate in decisions about their care & given an opportunity to make choices where appropriate. (Collaborative decision making). Patients undergoing procedure should be provided with easily understood information materials covering anaesthesia and post-operative pain relief, preferably before admission to the hospital or on the day of admission if not possible otherwise. In our hospital setup stringent criteria on consent policy states that, except for routine diagnostic and treatment procedures there should be no blanket consent form signed.

Purpose: To determine the adequacy of information provided to the patient's, their ability to interpret it and level of patient's satisfaction.

Methods: 110 admitted patients who were assessed in the pre-operative period were surveyed in the post-operative period by written questionnaire. Patients were asked about their level of agreement with a number of statements pertaining to informed consent, anaesthesia plan discussion, plan for post-operative pain control, anaesthesia risk explanation with incidence, time to sign the consent, ability to interpret the written information, language barrier and prior assessment in anaesthesia clinic were evaluated.

Results: 100 out of 110 surveys were completed from patients who were well able to communicate and willing to participate in the survey. During pre-operative assessment anaesthesia plan was discussed with 92% of the patients. Risk of anaesthesia was explained in 46% of the cases while risk explained with incidence was 21.7%. Anaesthesia plan for post-operative pain control was discussed in 17% of patients. Percentage of patients who were given option to choose from available anaesthesia techniques was 26%. 66% of the patients said they were given ample time to sign the consent. Those who were able to read/interpret the anaesthesia consent form were 26%. Out of 74% who were not able to read/interpret the anaesthesia consent form it was read/interpreted by the anaesthetists to 16.2% of the patients. Language barrier was found in 14%; interpreter was used in all such patients but documented in 57% of the cases. 72% were completely satisfied with the information provided, 16% said they are somewhat satisfied, 8% said they cannot comment and 4% were not satisfied at all. Of all the patients interviewed 62% were assessed prior in the pre-operative clinic.

Conclusion: There is wide variation in the extent to which individual practitioners impart information to the patients prior to anaesthesia. Though anaesthesia plan is discussed in most of the cases, risk is mainly explained in high risk surgeries and risk with incidence explained in even lesser cases. Plan for post-op pain management should be discussed more frequently and there is need for increased patient involvement in the final plan. Language barrier needs to be documented with name of interpreter in person to avoid the confusions in communication. Most of the patient population is not able to read/interpret the anaesthesia consent that either should be made simpler enough or the anaesthetists should be given more time with the patients for its detailed explanation, ideally in the pre-operative clinic before admission.

09

POST ANESTHESIA CARE UNIT LENGTH OF STAY IN ADMITTED INPATIENTS

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Introduction: Post anaesthesia care units (PACU) were established with the primary objective to reduce postoperative morbidity and mortality. The continuous evaluation and specialized care in PACU's does not come free and excessive length of stay in this area can contribute to increasing health care expenses. The accepted tool of objective assessment for discharge is the modified Alderete discharge scoring system for admitted patients. Classifying and quantifying factors that prolong length of PACU stay is difficult because appropriate and average discharge times have not been established. Number of factors play role in PACU length of stay, such as patients co morbidities, age, duration of surgery and various other non-clinical reasons.

Aim: The goal of this audit is to evaluate the length of stay in patients with post-operative admission using Modified Alderete scoring as discharge criteria.

Method: Data collection was done retrospectively over a period of 3 months from 1st June 2015 to 31st August 2015 carried out in Shaukat Khanum Memorial Cancer Hospital.

Data was collected with the help PACU staff nurse from hospital database. Only patients of orthopaedic surgery and breast surgery's with post-operative admission were included in this audit. PACU length of stay was defined as the time from the patient's admission to post anaesthesia care unit, to the time that the patient left the unit as recorded by the post anaesthesia care unit nurse. Patients were discharged when they met the discharge criteria according to Modified Alderete scoring system. Patients with score 9 or 10 were considered to be ready for discharge. We calculated mean of PACU duration of stay for all three months and looked for variability of time duration for stay in PACU. Day case surgeries and admitted cases of other specialities were excluded from the audit.

Results: The population included 304 patients in which 232 (patients underwent breast surgery and 76 patients underwent orthopaedic surgery. The mean duration of stay in PACU of patients who underwent breast surgery was 155 minutes (June 161 minutes, July 147 minutes, August 156 minutes). The mean duration of stay in PACU of patients who underwent orthopaedic surgery was 161 minutes (June 164 minutes, July 174 minutes, August 151 minutes).

Conclusion: There is no goal standard for length of stay in PACU. Through this audit we should aim to reduce PACU duration of stay for cost effectiveness without compromising patient care and should look for various factors influencing post-operative length of stay in PACU to improve our current standards in future.

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POSTOPERATIVE PAIN MANAGEMENT FOR ELECTIVE GASTROINTESTINAL SURGERIES IN SKMCH & RC

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Background: In SKMCH&RC, we deal mostly with cancer surgeries. Pain management is an important issue during intraoperative and postoperative period. Post-operative pain control depends on different kind and severity of surgery. In patients who undergo major surgeries and experience severe postoperative pain are provided with multimodal analgesia that includes patient control analgesia (PCA) and epidural analgesia.

Purpose: To compare the effectiveness of multimodal pain regimes provided in SKMCH& RC for postoperative pain management.

Method: Performa based survey conducted to assess effectiveness of multimodal analgesia provided in elective gastrointestinal surgeries. The audit period included data of patients provided with multimodal analgesia from 1st June, 2015 to 31st August 2015. post operative pain score and overall patient satisfaction level was recorded up till day 4 postoperatively.

Results: Total number of patients audited in period of 3 months was 128. Out of 128, 50(39.0%) patients were provided with PCA and 78(60.9%) patients were provided with Epidural analgesia. Patients underwent major gastrointestinal surgeries were included in this audit. Total patients provided with PCA were 50(39.0%), patients fully satisfied were 31(62%), patients partially satisfied were 19(38%). Total patients provided with epidural analgesia were 78(60.9%), patients fully satisfied were 59 (75.6%), patients partially satisfied were 19 (24%).

Conclusion: Our audit concluded that patient population was generally satisfied with postoperative analgesia Overall Epidural seems to be more satisfactory analgesic modality than PCA.

BREAST CANCER TREATMENT IN HIGH RISK ELDERLY PATIENTS

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Background: Breast cancer is considered as disease of old age accounts for 35-40% in women above 65 years. This age group has usually multiple comorbid conditions, and therefore are not offered standard treatment, although this lacks scientific evidence. We present a review of elderly population treated at our hospital, to assess whether these patients can be offered standard treatment, despite multiple comorbid conditions.

Methods: A total of 685 patients age 65 years and above were registered for treatment at SKMCH & RC, from 2006 to 2012. 434 patients were included; patients with incomplete data were excluded. Retrospectively the data of all male and female patients above the age of 65, diagnosed with breast cancer was reviewed using hospital information system. The demographics studied were age, gender, locally advanced disease at presentation, comorbid conditions, histopathology, receptors, metastatic workup, stage, treatment received, local recurrence, and distant metastasis. Patients were divided into four age groups, and four groups of comorbid conditions.

Results: Results were analysed using SPSS 19, 434 patients met inclusion criteria. Age range was from 65 to 90 years, median age was 70 years. 425 (97.9%) patients were females and 9 (2.1%) patients were males. Maximum number of patients 276(63.6%) belonged to age group 65-70 years. 130 (30%) patients had locally advanced disease at presentation, 17(3.9%) patients had bilateral breast cancer at initial presentation. 32(7.3%) patients had distant metastasis at the time of presentation. Invasive ductal carcinoma was the most common type (73.96%). Luminal A was the most common subtype, 261 (60.1%), followed by Luminal B subtype, 68 (15.7%), 54 (12.4%) were Triple negative. 139 (32%) had single comorbid condition, while 58(13.4%) had three or more comorbid conditions. 395(91%) patients underwent surgery, amongst them 144 (33.2%) had breast conservation surgery (BCS), only 41 (9.4%) patients were either not offered surgery due to very high risk for anaesthesia or they refused. 183 (42.2%) patients received chemotherapy. Radiotherapy was given to 302 (69.6%) patients. 353(81.33%) patients received hormonal therapy. Therefore 166 (38.2%) patients received standard treatment. Cancer specific deaths were 20(4.12%).

Conclusion: Elderly patients of breast cancer should be offered standard treatment according to the guidelines which are according to tumour biology, only patients with multiple comorbid conditions and those who are very fragile can receive selective treatment.

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GALLSTONE ILEUS: A COMPLICATION LEAST EXPECTED - A CASE REPORT**MUHAMMAD UMAR YOUNIS¹, RANA SOHAIL AHMED NOON¹, MUHAMMAD RAFAIH IQBAL²****¹MAYO HOSPITAL LAHORE****²MAIDSTONE AND TURNBRIDGE WELLS NHS, UK**

Introduction: Gallstone ileus is a very uncommon presentation of mechanical small bowel obstruction encountered in surgical practice. The rate significantly increases in the elderly and should be sought after in patients belonging to the geriatric age group. A high index of suspicion should be kept for these patients to decrease the morbidity and mortality in this subset of population.

Case Presentation: A 60 year old female was admitted in the emergency of Mayo Hospital Lahore with signs and symptoms leading to a provisional diagnosis of acute small bowel obstruction. She was promptly resuscitated and operated to relieve the obstruction. A large stone was found impacted in the terminal ileum and a fistulous tract delineated with much difficulty between the gallbladder and the duodenum. The tract was excised, repair of the duodenum carried out along with cholecystectomy. The patient had an uneventful recovery and was discharged on post-operative day 10.

Conclusion: This case report corroborates with literature available from many sources that gallstone ileus might be a valid differential diagnosis when managing an older patient who presents with small bowel obstruction. Prompt diagnosis and early treatment significantly reduces the morbidity of this condition.

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MAJOR OBSTETRIC HEMORRHAGE: A CASE SERIES

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Objective: To analyse the cases of major obstetric haemorrhage in patients undergoing Caesarean section

Background: Major obstetric haemorrhage is defined as blood loss from the uterus > 1500 mls. It is one of the leading causes of maternal morbidity and mortality. The number of cases presenting with placenta accrete has been on the rise in our practice lately. We review the anaesthetic charts of all patients who had or were at risk of major blood loss in obstetric care setting.

Study Design

Retrospective chart review.

Methods: We reviewed data of all patients who underwent Caesarean section from Jan 2014 to August 2015.

Results: Out of 2914 patients 61 (2%) had major obstetric haemorrhage. The reasons of haemorrhage in these patients were placenta praevia (more commonly placenta accreta), previous H/O caesarean sections, multiparity, H/O myomectomy, pregnancy with fibroid. In 24 patients (out of 61 with massive obstetric haemorrhage) hysterectomy had to be done to control blood loss. 28 patients (47%) had blood loss between the range of 1500 to 2000 mls. 20% patients had blood loss between the range of 2000 to 3000 mls.

Conclusion: This observational study shows the frequency and morbidity of major obstetric haemorrhage we see frequently in our hospital. Hence we have designed a departmental protocol to manage such patients who present with or are at risk of developing major obstetric haemorrhage.

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LONGITUDINAL PANCREATICOJEJUNOSTOMY IN CHRONIC PANCREATITIS

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Objective: To determine the role of Longitudinal Pancreaticojejunostomy in chronic pancreatitis

Place and Duration of Study

Surgical Unit – 4, Jinnah Hospital, Lahore

June, 2013 – December, 2013

Study Design

Case Series

Material & Methods:

Two female patients included in this case series

Patient A 35/f presented with intractable abdominal pain, vomiting and other features of malabsorption. CT scan: dilated pancreatic duct and oedematous pancreas. Underwent Laprotomy for Modified Puestow s procedure. Frozen Section: No Malignancy. Definitive Biopsy: Autoimmune pancreatitis

Post- Operatively: her pain settled but patient developed ascites which responded to diuretics. Now patient is on pancreatic enzymes and symptoms have relieved

Patient B 40/f presented with abdominal pain, bloating and vomiting. CT scan: mass in the head & body of pancreas, with solid and cystic component. Laprotomy: Puestow’s Procedure. Biopsy: Chronic Pancreatitis

Post-Operatively: Symptoms Settled

Results:

2 patients were included in this case series and symptoms were settled in both patients after the surgical procedure.

Conclusion: Longitudinal Pancreaticojejunostomy is the procedure of choice in patients of chronic pancreatitis with intractable pain who are resistant to medical therapy or when Chronic Pancreatitis is associated with main pancreatic duct dilatation.

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HAEMOGLOBANOPATHIES IN SOUTHERN AREAS OF KHYBER PUKHTOONKHWA**H. KHAN****NOWSHERA MEDICAL COLLEGE, NOWSHERA, PAKISTAN**

Objectives: To determine the frequencies of various types of haemoglobinopathies in southern areas of Khyber Pukhtonkhwa.

Methods: This cross sectional study was conducted in Department of Pathology, Gomal Medical College from January 2014 to October 2014. Relevant information's were recorded on a pre-designed proforma prepared in accordance with the objectives of the study.

Results: A total of 62 patients underwent Hb electrophoresis in Department of Pathology Gomal Medical College Dera Ismail Khan. 27(43.5%) were females and 35 males (56.5%). Majority of the patients 37(59.7%) were in the age range 3month to 5 years. We received patients from age 3 month to 60 years age for knowing types of haemoglobinopathies. The distribution of patients was 49(79%) patients DI Khan, tank 10(16%), Lakki Marwat 2(3.2%) and South Waziristan 1(1.6%). The Haemoglobin of all patients as recorded from the peripheral smear. It was observed that 43(55%) patients had Hb < 8g/dl and were candidates for blood transfusion. Of the above group 17 had Hb ranging from 2.2 to 5g/dl (severely anaemic). The Distribution of various haemoglobinopathies were; Beta thalassemia major 16(25.8%), Beta Thalassemia trait 7(11.3%), Sickle cell disease 6(9.7%), Sickle cell trait 2(3.2%), Sickle cell/Beta thalassemia (double heterozygosity) 2(3.2%) and HbE/ Beta Thalassemia (Double heterozygous 1(1.6%). 28(45.2%) had normal Hb Electrophoresis reports.

Conclusion: Haemoglobinopathies are common in southern areas of Khyber Pukhtoonkhwa. Beta thalassemia major is a major haemoglobinopathy. Sickle cell diseases are also prevalent in this region especially in the Sherani, Baytani and Ustrana tribes of Dera Ismail Khan.

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RADIO FREQUENCY ABLATION- AN EMERGING INTERVENTION DISCIPLINE IN TREATING LUNG CANCERS

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Introduction: Radiofrequency ablation is done for primary and secondary pulmonary tumours. 16.8% of patients in the United States diagnosed with lung cancer survive five years after diagnosis. It is the most common cause of cancer-related death in men and women, and was responsible for 1.56 million deaths worldwide in 2012. Lungs are the second most frequent site for metastases. Standard therapy for lung nodules is VATS, adjuvant, radiation therapy and chemotherapy.

Objective: Percutaneous RA of lung nodules is now an established technique for treating liver and renal lesion. Interventional Radiology is an emerging fundamental discipline involved in cancer treatment including percutaneous ablation, Embolization techniques and Intra-arterial drug delivery.

Conclusion: RFA can be used to treat both primary & metastatic tumours. It does not preclude other complimentary therapies. Patient selection is key/critical.

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EXPLORING %AGE OF REPEAT X-RAYS TO MINIMIZE PATIENT'S EXPOSURE IN RADIOLOGICAL IMAGING AT KDC&C

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Objective: To find out the causes & number of repeated X-Rays with a view of adopting measures that will reduce the rate & number of repeated X-Rays.

Introduction: Medical Imaging provides valuable information with regard to normal & diseased anatomy that can occur within the human body. As we know an important goal in radiography is to obtain the best diagnostic information by delivering the least radiation dose to the patients.

Background: The projection strengthening radiological protection of patients is designed to help countries apply the international basic safety standards for the patient against ionizing radiation & for the safety of radiation sources developed by the International Atomic Energy Agency (IAEA), world health organization & other partners. The standards require attention to image quality by considering corrective action if such exposure do not provide useful diagnostic information & do not yield medical benefits to patients.

Material & Methods: Over a two year period (1st January 2013 to 31st July 2015) the total number of X-Rays repeated for radiographic examination were collected respectively from the computed radiography machine of radiology department.

Distribution of Reject & Repeat Rate by Various Examination Type

| S# | TYPE OF EXAMINATION | NUMBER OF EXAMINATION | NUMBER OF ACCEPTED X-RAYS | NUMBER OF REJECT/ REPEAT X-RAYS | REASON FOR REJECTION OR REPEATION |
|----|---------------------------------------|-----------------------|---------------------------|---------------------------------|-------------------------------------|
| 01 | Chest X-Rays | 479 | 461 | 18 | Patient movement & breathing issues |
| 02 | Spine | 34 | 31 | 03 | Artifact & Underexposure |
| 03 | Lower Extremities | 51 | 47 | 04 | Patient movement |
| 04 | Upper Extremities | 45 | 44 | 01 | Positioning error |
| 05 | Sinuses | 04 | 04 | --- | ---- |
| -- | Total Number Of X-Rays (2013 to 2015) | 613 | 587 | 26 | ---- |

Result: The average repeat rate 4.2 %, it was found that human error has important role to repetition of radiographs.

Discussion & Conclusion:

Diagnostic procedure contributes more than 95% of the medical exposure. There is no safe dose of radiation, as in theory it takes only a single photon as particle to cause damage to DNA resulting in a genetic alteration.

Consisting training on radiographic techniques & standardization of protocols as well as quality assurance measures in the hospitals could help overcome the reported exposure error & poor patient positioning & improve revenue savings.

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ONLINE REPORTING OF X-RAYS & MAMMOGRAPHY WITHIN 24 HOURS THROUGH PACS

M. ASLAM

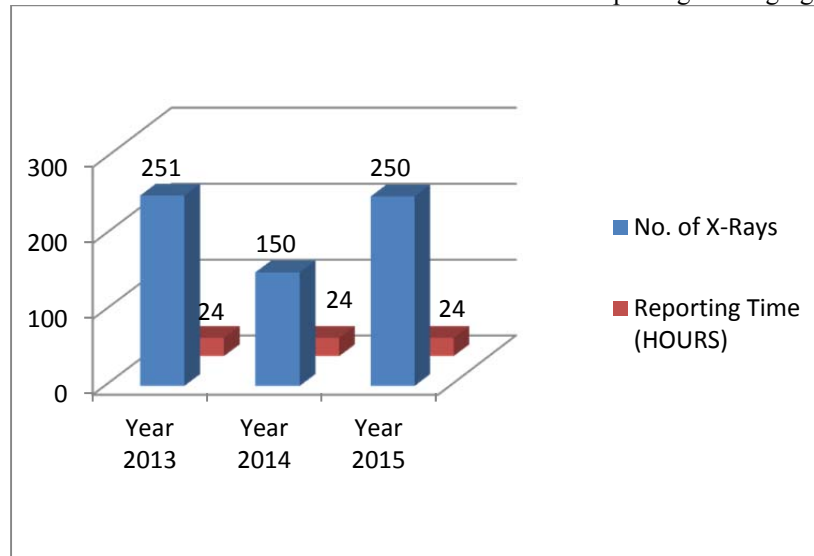
SHAUKAT KHANUM DIAGNOSTIC CENTER & CLINIC KARACHI PAKISTAN

Objective: Objective of this study I tried to prove comfort of reporting (X-Ray) without Radiologist through PACS from Karachi diagnostic Centre to SKMCH-RC within 24 Hours.

Background: PACS is a Picture Archival communication system it's a digital distribution system designed to replace a conventional film & paper. Radiology workflow that includes film, processor, camera scanner, file room & personnel, film jackets, repeat films, laser printers & lost films.

Material & Method: A study was carried out in local diagnostic centre and number of patients calculated since year 2013. All Images of X-Rays have been online & reported within 24 hours without any delayed.

Results: PACS Enhances Patients Comfort Level & Extreme Line Of Reporting & Imaging Transfer Process.



No .of X-Rays VS Reporting Time (Year 2013 till Year 2015)

Conclusion: Due to timely reporting following advantages achieved. Patient flow increases because due to quick reporting patient's now prefer SKMCH-Karachi as its reporting is more reliable & affordable. Patient satisfaction level is improved. Revenue savings (Online reporting through PACS). Reliable & Quick reporting also increased treatment response & reduced patient overall cost. Despite of achieving our bench mark we are still striving towards more excellence by making our HIS processes more efficient.

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MULTIFOCAL HAEMANGIOMATOSIS INCLUDING A GIANT HEPATIC HAEMANGIOMA WITH CAPSULAR RETRACTION AND KASABACH MERITT'S SYNDROME

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Background: Haemangioma are the most common benign lesions of liver with female gender preponderance. Multifocality and capsular retraction on computerized tomography are rare features. We are presenting a case of multifocal haemangiomas with a giant hepatic lesion showing capsular retraction on CT images raised a possible suspicion of a malignant lesion which is confirmed by Tc-99m Tagged RBC imaging.

Case History: This is a 40 year old hypertensive male presented with short history of upper abdominal pain and vomiting with past history of an episode of abdominal pain with thrombocytopenia. His recent laboratory tests were within limits. An upper abdomen ultrasound revealed a large echogenic lesion in the right hepatic lobe suggestive of a mass lesion. On subsequent contrast enhanced CT examination showed a vascular lesion 13/6 x 10.5 cm involving VI and VII hepatic segments with mild capsular retraction. In addition, high density lesions were also found in spleen (1.1 cm) and T8 and T9 bodies. Findings were highly suggestive of multifocal haemangioma with a giant one in liver. But the mild capsular retraction raised a possible suspicion of a malignant lesion. A planar Technetium-99m tagged RBC scan (20 mCi) was performed and dynamic images showed relatively reduced perfusion over segment VI of liver in early dynamic frames. Blood pool images revealed a large area of progressive enhancement of blood pool activity involving segment VI of liver. Splenic and vertebral lesions seen on CT were not outlined most likely due to limitation of camera to resolve small sized lesions. All these findings were consistent with multifocal haemangioma with a giant one involving the liver. On the basis of these evidences biopsy was considered unjustified. Patient was referred to vascular surgeon for resection of the lesion.

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COCKADE SIGN OF INTRAOSSEOUS LIPOMA OF CALCANEUS ON TRIPHASIC BONE SCAN**N. FATIMA¹, M. ZAMAN², A. JALIL¹, H. BIBI¹, S. ZEHRA¹, A. MOIN¹, H. NAEEM¹, M. K. IQBAL¹****¹DR. ZIAUDDIN UNIVERSITY HOSPITAL****²AGA KHAN UNIVERSITY HOSPITAL KARACHI, PAKISTAN**

Intraosseous lipoma is rare benign tumour of bone most commonly involving the calcaneus and derived from mature lipocytes. It has classical appearance of Cockade on plain X-ray (Cockade sign). We present a case of 40 years old lady with 05 months history of pain of moderate severity over left calcaneal region. On local examination, her left calcaneal region was normal looking with no sign of acute inflammation but she had mild tenderness. A dynamic triphasic bone scan was performed with 20 mCi of Technetium-99m Methylene Diphosphonate (Tc-99m MDP). Her dynamic images revealed asymmetrical flow over left calcaneal region and a well defined area of enhanced activity over mid of left calcaneus on blood pool images. Delayed images show a curvilinear area of increased tracer uptake over proximal part of inferior border of left calcaneus and small photon lucency just above it is also seen. Abnormal uptake over tarsal joints were also noted. This was followed by an X-ray of left calcaneus which revealed a large lytic area over left calcaneus with a well-defined radio-opaque area in the centre and significant sclerosis over the inferior surface. The findings were classical for Cockade sign of intraosseous lipoma with a central calcification.

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THINKING OF AN UNUSUAL MIMIC OF PROSTATIC CANCER**M. U. NASIR, A. IQBAL****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL & RESEARCH CENTRE, LAHORE,
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Objective: The aim of this study is to illustrate the clinical, radiological and pathologic features of atypical prostatic and periprostatic masses that may mimic prostatic adenocarcinoma.

Material and Method: We have studied 152 patients (n=152) who presented to radiology department of Shaukat Khanum memorial cancer hospital and research centre for trans rectal ultrasound (TRUS) guided prostate biopsy over the time period of 1 year from August 2013 to August 2014. These patients were studied retrospectively and patient record was derived from Hospital information system. All the patients who underwent a TRUS guided biopsy of prostate were between the age range of 40 to 79 years and had elevated PSA levels of more than 4 ng/mL. Correlation of clinical and radiological features was done with histopathology.

Results / Conclusion: Masses arising from prostate and periprostatic tissues may mimic the appearance of primary prostatic adenocarcinoma. Close attention to clinical and imaging features is helpful in narrowing the differential diagnosis. This study focuses on the clinical presentation and radiological features of mesenchymal, stromal and neuroendocrine tumours of prostate, tumefactive inflammatory conditions including chronic and granulomatous infection of prostate and periprostatic masses.

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EFFICIENT TECHNIQUE FOR CALCULATION OF TISSUE AIR RATIO AND TISSUE MAXIMUM RATIO IN RADIATION DOSIMETRY

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Background: The radiation therapy field is advancing continuously to achieve higher degrees of accuracy and efficiency. With rapid advancements in modern technology, it is highly desirable to have high degree of efficiency and accuracy in the field of radiation therapy physics. The purpose of this work is to enhance the efficiency of radiotherapy machine commissioning by applying computational tools to interpolate dosimetric quantities Tissue Air Ratio (TAR), which is vital dosimetric quantity for dose calculation in cobalt-60 radiotherapy, and Tissue Maximum Ratio (TMR).

Method: Technique of numerical analysis is used and interpolation of data is carried out with an efficient method. Newton Divided Difference interpolation method is used to interpolate data between tabulated values. In order to shorten the time, technique of interpolation is used; in which calculation of dosimetric quantities is made for certain depths and field sizes with reasonable step size and remaining values at different depths and field sizes are obtained. Results

It is found that interpolated results considerably agree with the measured data and so this method can be used efficiently for interpolation of above mentioned dosimetric quantities. The data obtained by this technique is highly reliable and can fill the discrete set of tabulated data to make it continuous.

Conclusion: The results obtained in this technique are in agreement with measured data and hence can be used as input data in radiotherapy treatment planning process. The interpolated results are well within accuracy limits and this method can significantly improve the efficiency of machine commissioning and resultantly improve treatment planning.

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SPECT-CT: HOW MUCH RADIATION DOSE CT CONTRIBUTE**S. YOUNAS¹, S. H. ALI¹, K. NAWAZ¹, H. BASHIR¹, S. SHAHID¹, A. NISAR¹, M. SIDDIQUI¹, M. BILAL², A. ZAMAN², M. KHALID³****¹SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL & RESEARCH CENTER, LAHORE, PAKISTAN,****²PIEAS, ISLAMABAD, PAKISTAN,****³ISLAMIA UNIVERSITY BAHAWALPUR, BAHAWALPUR, PAKISTAN**

Objective: Effective dose (E) is a single parameter to reflect the relative risk from exposure to ionizing radiation in term of detrimental biologic effects on whole-body exposure. SPECT with multi-slice CT systems has been employed for better attenuation correction and localization. The study was conducted to calculate effective radiation dose both from radiotracer and low dose CT to patients scanned from August, 2014, to August, 2015, on SYMBIA T16 SPECT CT in the department of Nuclear Medicine.

Material and Method: We analysed 151 patients injected with 99mTc-MDP for bone scan, 20 patients for stress 99mTc-MIBI, 6 patients for 99mTc-MIBI para-thyroid, 21 patients 99mTc HSA Sentinel, 45 patients Iodine whole-body post therapy. The CT and radiotracer doses were calculated using ICRP conversion factors. The CT portion of SYMBIA T16 system has variable tube current ranges from 20–345 mA.

Results: The maximum dose for bone patients (% increase with respect to radiotracer) is 1.99 mSv (45.76%) for 99mTc trunk patients and least for head which bears 0.1 mSv (1.79%). The CT dose for abdomen & Pelvis, Chest, Head & neck is 0.78, 0.64, 0.18 mSv respectively. However, chest dose in case 99mTc-MIBI is 3.56 mSv in one phase of the myocardial perfusion imaging. The calculated neck CT dose for 99mTc parathyroid is 0.8 mSv where as it decreased to 0.75 mSv for the 99mTc Sentinel chest patients. The negligible dose rise is observed in case of Iodine-131 post therapy patients with an average CT dose of 1.02 mSv for trunk areas against 1976 mSv dose from radioactive Iodine.

Conclusion: The risk factor in our case is 0.016% with the addition of diagnostic CT for SPECT/CT. Considering the benefit to the patient in comparison to conventional diagnostic CT the induced radiation doses by SPECT/CT are quite low in our calculations However, effective dose of CT may be balanced further by decreasing the injected nuclear medicine activity at the cost of increased patient scanning time.

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EFFECTIVENESS AND DURABILITY OF LEAD APRONS USED IN A CANCER DEDICATED HOSPITAL - PRACTICAL EXPERIENCES

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Objective: The objective of the study to find out effectiveness of lead aprons in term of their attenuation against sealed and unsealed radiotracers, handling and durability after implementation of lead garments quality assurance program since 2010.

Material: SKMCH&RC has total 57 lead aprons of 0.5 mm lead equivalent material being used in different departments. Annual quality assurance inspection of these lead aprons was initiated in 2010 as per Australian and New-Zealand Radiation Protection Regulations. We, further, assessed the attenuation capability of lead aprons using Barium (133Ba), Cobalt (57Co), Cesium (137Cs), Sodium (22Na), 99mTc, 18F and 131 I.

Method: We measured radiation exposure in micro-Sievert (μSv) at 10 cm with and without lead garments to find the effective attenuation of these lead garments using calibrated survey meter. The lead aprons were analyzed using standard Digital X-ray machine on the knee X-ray parameter to analyse holes and cracks during annual inspections.

Results: We found that the attenuation of 0.5 mm lead garments for sealed sources is 22% for 137Cs, 19% for 57Co, 60% for 133Ba, 13% for 22Na however for unsealed sources it is 17% for 131I, 81% for 99mTc and by 10% for 18F. Three lead aprons were rejected on the basis of radiological examination projecting holes in five years. However, we have observed sewing and untidiness as the main issue in few departments.

Table 1: Radiological Inspection Results for Lead aprons from 2010 to 2015

| Year / Defects | Hole | Cracks | Sewing | Untidy | Rejection |
|----------------|------|--------|--------|--------|-----------|
| 2010 | 2 | None | 15 | 20 | 1 |
| 2011 | None | None | 7 | 12 | None |
| 2012 | 2 | None | 10 | 16 | None |
| 2013 | 1 | 2 | 8 | 18 | None |
| 2014 | 2 | None | 9 | 13 | 2 |
| 2015 | None | None | 8 | 11 | None |

Conclusion: The usage of lead aprons reduces the radiation dose in the radiation areas. However, the less effectiveness of lead garments against 18F needs to be balanced with time and distance principle. The vigilant inspection and training of staff to handle and proper storage of lead aprons increase the durability and reduced the cost to purchase new lead garments.

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MR ENTEROGRAPHY: PROTOCOL AND CLINICAL APPLICATIONS IN SMALL BOWEL PATHOLOGY

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Objective: To discuss protocol for MRE and to review some common applications of this technique.

Background: Small bowel is not easily accessed by endoscope and diagnosis of its pathology relies on clinical assessment and imaging. Traditional contrast studies have the disadvantage of not including the mural and extramural details. This is best seen with MR Enterography (MRE) which is rapidly replacing CT enterography due to better soft tissue resolution and lack of ionizing radiation. We will share our departmental protocol and discuss clinical applications of MRE.

Subjects and Methods: We have a modified MRE protocol at our institute. Patients take nil by mouth for 4-6 hours prior to the appointment. They have to take about 1-1.5 litre of a 2.5% polyethylene glycol solution at regular intervals over a period approximately 40min prior to the study. The aim of using this hyperosmolar agent is to achieve luminal distension. It appears low signal intensity on T1-weighted images (T1-WI) and high signal intensity on T2-weighted images (T2-WI). On table 0.5 mg intravenous glycopyrolate is administered as spasmolytic agent. The study is performed on a 1.5-T MRI Philips scanner, using a phased array surface coil in supine position. Comprehensive MRE requires axial and coronal T1 and T2-WI, high-resolution diffusion weighted images (DWI), fat-suppressed three-dimensional (3D) T1-W breath-hold gradient-echo images of the abdomen and pelvis before and after intravenous gadolinium-based contrast material administration.

Conclusion: MRE is the preferred imaging technique for small bowel pathology owing to its ability to show mural and extramural details which allows differentiation in acute, active and chronicity of changes. Being radiation free, there is no age limitation for its use.

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RADIOIODINE ABLATION WITH RECOMBINANT THYROTROPIN IN DIFFERENTIATED THYROID CANCER - SKM EXPERIENCE

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Objective: Retrospective review of differentiated thyroid carcinoma (DTC) patients treated with recombinant human thyrotropin (rhTSH) stimulated radioiodine therapy (RAI).

Materials and Method:

Using hospital information system (HIS) a total of 43 patients were identified from July 2003 to December 2014. Demographic data and following information was retrieved: TSH at the time of RAI therapy, thyroid remnant size, therapeutic dose of RAI, outcome of ablation assessed by whole body scan acquired 6 to 12 months into follow-up.

Results: Our cohort of 43 patients included 30 (68.9%) females. Papillary thyroid carcinoma 36(83.7%), Follicular thyroid carcinoma 7(16.3%). Remnant size was assessed in three categories.

Category 1: Size up to 2 cm. 17 (39.5%) patients with TSH in range of 3.9–10.8, (4 were euthyroid, 13 insufficient hypothyroidism).

Category 2: Size 2–3 cm. 14 (32.6%) patients with TSH in range of 2.5–8.3. (4 in euthyroid stage, 10 insufficient hypothyroid stage).

Category 3: Size >3 cm. Four (9.3%) patients with TSH in range of 2.4–3.3. (2 were euthyroid, 2 insufficiently hyperthyroid).

Five patients had an irresectable disease (11.6%) with TSH in range of 1.05–21.3. (i.e. 3 euthyroid, 2 insufficiently hypothyroid). In 3 patients remnant size was not available. Total, 16 patients were euthyroid at the time of ablations while 27 patients were insufficiently hypothyroid. Overall mean TSH was 6.4 (range 1.05–21.3). In 40/43 patients response to therapy was available. Thirty four patients had complete ablation after one dose of radioactive iodine while 6 patients had to be given more than one dose of RAI. Two patients were treated with less than 100 mCi. Forty patients were treated with dose of 100–150 mCi while one patient was treated with the dose of >150 mCi. All patients had sufficient thyroid tissue destruction with rhTSH simulated RAI as evidenced by appropriate elevation in off thyroxine TSH levels checked within 12 months post therapy. This was also seen in nonsurgical candidates with intact thyroid. There was no statistically significant correlation between the size of the remnant or the successes of ablation. However, significant correlation was found between TSH and remnant size ($P = 0.013$).

Conclusion: Recombinant TSH assisted RAI therapy is an effective method of thyroid ablation irrespective of the remnant size.

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ADDED DIAGNOSTIC VALUE OF SPECT-CT IMAGING IN THE MANAGEMENT OF DIFFERENTIATED THYROID CANCER

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Purpose: To review the added value of single-photon emission computed tomography/computed tomography (SPECT/CT) to radioiodine whole-body scan [I-131 WBS] in the management of patients with differentiated thyroid cancer.

Methods: Retrospective review of all SPECT-CT scans acquired as an adjunct to planar I-131 WBS between January 2014 and August 2015.

Results: Four hundred nineteen I-131 WBS were acquired during 20 months. Additional imaging with SPECT-CT was performed in 68 cases [16%]. A total of 39 females, 29 males [Age range: 16-87 years] were identified with thyroid carcinoma (58 papillary, 8 follicular, 1 oncocyctic variant and 1 insular). Of 68 patients, 13 (19%) had diagnostic I-131 WBS [baseline n=5; Follow-up n= 8]. Fifty-five (81%) were post therapeutic WBS.

In 33 (49%) scans, similar unifocal or multifocal findings were observed on planar and SPECT-CT scans. However, SPECT CT led to better characterization of these foci of avidity; Thyroid remnant/neck nodes [n =28], Pulmonary nodules [n= 4], bone [n=1].

Twenty (29%) additional lesions were identified on SPECT-CT as compared to planar scan including Non-avid pulmonary nodules [n=7], bone lesions [n=2] and cervical/mediastinal nodes [n=11].

Fifteen (22%) findings on planar WBS turned out to be benign or physiological variants; Uptake in hyoid bone [n=4], oesophagus [n=4], thymus, vocal cord, thyroid cartilage, breast, collapsed lung, rib fracture and contamination [n=1 each].

Overall, SPECT-CT changed management plan in 51% of cases, upstaging disease in 29% cases. No further treatment was offered in 15% cases, based on benign findings confirmed on SPECT-CT.

Conclusion: SPECT-CT imaging improves the diagnostic yield and specificity of I-131 WBS altering patient management with regard to frequency of follow-up studies.

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PAEDIATRIC SOLITARY THYROID NODULES ON TC-99M THYROID SCAN AND THEIR CORRELATION WITH HISTOPATHOLOGICAL EXAMINATION- AN INSTITUTIONAL REVIEW

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Purpose: Institutional review of all paediatric patients with structural or functional thyroid abnormality who underwent Tc99m thyroid scans, to evaluate the correlation between scan findings and histopathology of selected patients.

Methods: Retrospective review of all paediatric patients who underwent thyroid scan for palpable thyroid swelling / deranged thyroid function tests at our centre from 2007 to 2014. The scan findings were classified as diffuse goitre, Graves' disease and nodular goitre. Hot or cold nodules were assigned based on level of Tc uptake. Cold nodules were correlated with histopathological/ultrasound findings.

Results: 227 patients with thyroid related signs and symptoms presented during the 8 years period. 177 females and 56 males. Mean age 14.8 years; age range 1 to 18 years.

Thyroid scan showed nodules in 30 patients and the rest had diffuse goiter / hypothyroid / Graves' disease. Out of nodular glands, 7 patients had toxic nodules.

23 patients had cold nodules detected on thyroid scan; 16 patients underwent ultrasound guided biopsy; of which 7 had papillary cancer and 1 medullary cancer of thyroid. Two patients with papillary carcinoma on cervical node biopsy had normal thyroid scan. Eight patients had Bethesda category II, out of which 3 patients had thyroid cysts on further evaluation while 5 patients had follicular colloid nodule/hyperplasia.

Conclusion: In paediatric population with cold thyroid nodules detected on thyroid scan, needs to be evaluated further as according to our retrospective evaluation 50% of these cases were diagnosed with Bethesda IV / Thyroid cancer on further evaluation.

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FREQUENCY OF SKELETAL METASTASIS IN PATIENTS WITH GERM CELL TUMORS ON BASELINE BONE SCINTIGRAPHY

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Purpose: To determine the frequency of skeletal metastasis in patients with newly diagnosed germ cell tumours (GCT) on baseline bone scintigraphy.

Method: Electronic medical records of 126 patients treated for histologically proven GCT of gonadal or extra gonadal origin between October 2010 and September 2015 were retrospectively analysed. Further sub classified on the basis of histologic subtypes. Bone metastases on baseline scintigraphy were further confirmed on the basis of clinical symptoms and correlative radiological imaging or histologic confirmation where available.

Results: A total of 126 patients, 59 females and 67 males, age range - 1 month to 72 years; mean age = 18 years) underwent Bone scans. 105 were paediatric (<18 years) at the time of initial diagnosis.

Of the total; 41 had yolk sac tumour (27 gonadal, 13 abdomino-pelvic masses and 1 mediastinal mass), 34 had mixed germ cell tumours (24 of gonadal origin, 9 sacrococcygeal and 1 on femur biopsy), 14 dysgerminoma of ovaries, 9 seminoma of testis, 16 mature cystic teratoma, 7 immature teratoma of abdominopelvic masses, 3 non seminomatous GCT of mediastinum and 2 embryonal carcinoma.

Osseous metastasis was detected in 12 (9.5%). Most frequent site of bone metastases was thoracolumbar spine (58%) with cord compression in 4 patients. Other sites included long bones (50%) and ribs (42%). 83% had multifocal metastases while 17% had solitary tibial metastasis. All patients had localized bone pain.

Concurrent systemic metastasis, commonly involving lungs (42%) and lymph nodes (42%) while 16% had no other site of metastasis. None had concurrent hepatic metastases. 42% died over a period of 4-18 months.

Conclusion: Distant skeletal metastases were found in 9.5% of the GCT patients at baseline. Bone scan is an easy, simple and reliable investigation for detecting skeletal metastases in staging of GCT patients.

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PERCUTANEOUS GASTROSTOMY-WHEN YOU REALLY WANT TO BE PERCUTANEOUS

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Abbreviations: Nasogastric (NG), percutaneous radiologically inserted gastrostomy (pRIG)

Background: Nasogastric (NG) intubation or image guided fine bore nasogastric catheter placement is often not possible in patients with absolute dysphagia which precludes percutaneous radiologically inserted gastrostomy (pRIG). The alternative in such cases is either open surgical or laparoscopic gastrostomy. We describe a technique which allow safe placement of pRIG in such cases without NG access.

Case

A 67 year male suffering from well differentiated SCC of post wall of pharynx, without any significant co-morbidities presented for pRIG placement. Endoscopy was unsuccessful. Initially NG intubation failed. Trans nasal image guided 0.35” terumo wire & 5Fr catheter placement was also unsuccessful. Subsequently stomach was visualized under real time US and micropuncture technique was used for access. Contrast injected and position confirmed under fluoroscopy. Track secured over guide wire and dilated to 5Fr using micropuncture set. This access was used to insufflate air and achieve adequate gastric distension. Three gastropexy sutures were placed, two medial and one lateral to point of initial access. Subsequently the tract was dilated to 14 F using serial dilators under real time fluoroscopy. 14G gastrostomy tube was placed. Final position confirmed with contrast injection under fluoroscopy. Patient had an uneventful recovery.

Conclusion: Percutaneous gastric access under real time ultrasound is safe and effective for pRIG placement and avoids the need for open surgical or laparoscopic gastrostomy.

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PERCUTANEOUS CHOLANGIOGRAPHY AND BIOPSY IN SUSPECTED MALIGNANT BILIARY OBSTRUCTION

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Background: Fluoroscopy guided percutaneous biopsy is a technique well described in literature to sample biliary duct/pancreatic tissue. We share a case in which we used this technique to obtain biliary track brushings and biopsy

Case

A 65 year gentleman with no comorbid, presented to GI department with obstructive jaundice. His CT showed a suspected pancreatic head mass. ERCP was attempted but was unsuccessful. An EUS was performed documenting 4cm pancreatic head lesion inseparable from portal vein over a short distance. EUS-FNA documented benign tissue

PTC was performed from left lobe segment 3 approach under US. Biliary track negotiated with catheter guide wire combination up to the duodenum. Then a second catheter guide wire combination was used to negotiate the CBD stricture in a tandem manner. This second access was then used to pass a brush in CBD and brushings and brush wash was obtained for cytological evaluation. After this a forceps was used to obtain punch biopsies in the region of the suspected pancreatic mass. Patient had an uneventful recovery.

Conclusion

CBD brushings and biopsy can be obtained with PTC

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CASTLEMAN DISEASE PRESENTING AS TENIS SYNDROME: A CASE REPORT**N. RASHID , H. BASHIR , N. AKHTER****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL AND RESEARCH CENTRE, LAHORE.
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Case Report: A 27-year-old male presented with one-year history of anterior neck swelling. Radionuclide thyroid scan showed a cold nodule. FNAC proved it to be Follicular Carcinoma thyroid. However, on total thyroidectomy it proved to be papillary thyroid carcinoma [T3 6.0 cm] with extra thyroidal extension. Baseline valid Thyroglobulin was 95. Postoperative whole body scan [WBS] showed multifocal I-131 avid thyroid remnants. Patient was treated with 150 mCi radioactive Iodine. Year one follow up investigations showed valid Thyroglobulin level of 354, however WBS did not reveal any Iodine avid remnant or disease – TENIS syndrome [Thyroglobulin Elevated, Negative Iodine Scan]. At this stage FDG PET/CT scan was done which showed subtle metabolic activity in the right thyroid bed with hyper metabolic multilevel cervical nodes, indicative of active disease with de-differentiation. Right-sided modified neck dissection was done. Histopathology revealed Castleman disease [hyaline vascular type] in right cervical nodes with no evidence of malignancy or granulomatous disease. Patient has been put on clinical follow up.

Discussion: Castleman disease (CD) is a rare disease of lymph nodes and related tissues. CD is not a cancerous disease with unicentric and multicentric presentation. Microscopic subtypes include Hyaline vascular, Plasma cell, mixed and plasmoblastic subtypes. The disease mainly involves the mediastinum and abdomen. Peripheral involvement, especially the head and neck are rare. A definite diagnosis is made on histopathological evaluation. The differential diagnosis includes lymphadenitis, tuberculosis, sarcoidosis, toxoplasmosis, cytomegalovirus, mononucleosis, HIV, or some tumours such as neurofibroma, cervical lipoma, Hodgkin's disease, thymoma, NHL, and lymph node metastasis from head and neck malignancies. Papillary thyroid cancer [PTC] is the most common type of thyroid cancer with excellent prognosis. A small percentage of PTC has the tendency to behave aggressively and represent TENIS syndrome. FDG PET-CT is the imaging of choice for TENIS syndrome. Our patient represents a FDG avid case of Castleman disease presenting as TENIS syndrome. In our patient elevated thyroglobulin levels remain unexplained and warrant clinical follow up in an otherwise asymptomatic patient.

Conclusion: Castleman disease is a potential mimicker of FDG avid metastatic disease in a variety of malignancies including thyroid cancer

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INTRASOSEOUS HAEMANGIOMAS ON TC99M MDP SPECT-CT

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Purpose: Osseous haemangiomas are benign skeletal tumours with incidence rate of 10% and usually identified as incidental findings. We present a review of haemangioma identified on bone scans at our department.

Materials and Methods: Electronic Hospital information system (HIS) was used to identify the term 'haemangioma' and 'haemangioma' in bone scan reports from July 2010 to September 2015.

Results: Twenty patients were identified to have osseous haemangioma on bone scan. There were 16 females and 4 males with age range of 13 to 72 years [median age = 56.5 years].

Seventeen patients were referred for skeletal metastatic work up while 3 underwent bone scintigraphy for backache. Breast cancer was the most common primary malignancy.

In total 23 lesions were identified in 20 patients with 3 patients having multifocal haemangiomas. 20 lesions [87%] showed increased radiotracer uptake while 3 had reduced tracer uptake.

Thoracic spine [n=12] was the commonest site of haemangioma followed by lumbar spine [n=8], iliac bone [n=1] and skull [n=2].

Out of 20 only 3 patients had osseous metastases with incidental haemangiomas. In 6 [30%] patients haemangioma was the only abnormal lesion on scintigraphy where correlation with radiology was essential for characterization. 11 patients had other benign findings along with incidental haemangioma.

Haemangiomas were characterized with SPECT-CT in 13 [65%] patients while 3 were characterized with CT and 4 with MRI.

Conclusion: Intraosseous haemangiomas show variable Tc99 MDP avidity and can be readily characterized with SPECT-CT.

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DIAGNOSTIC ACCURACY OF ULTRASOUND AND MAMMOGRAPHY IN PREDICTING COMPLETE PATHOLOGICAL RESPONSE IN POST NEOADJUVANT NON-PALPABLE BREAST CANCER

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Background: Neoadjuvant chemotherapy is the mainstay for treatment of locally advanced breast cancer as it reduces the size of the lesion prior to surgery; making it amenable to treatment by conservation. Accurate prediction of response to neoadjuvant chemotherapy is critical in surgical planning of non-palpable cancers. Mammography and ultrasound are the modality used for this purpose. We assessed the accuracy of both these techniques to predict complete pathological response and compared the two techniques as well.

Methods: We retrospectively reviewed the data of 225 patients diagnosed with stage 2 or locally advanced breast tumour. These patients had no palpable lesion post neoadjuvant chemotherapy and were selected for sono or stereo guided wire localization as a part of breast conservation treatment. All the patients were evaluated by sonomammogram at diagnosis and at the time of procedure after chemotherapy. Patients with complete mammographic (mCR) and sonographic (sCR) response were correlated with pathological complete response (pCR). Agreement between predicted radiological and pathological response, as well as sensitivity and specificity was calculated separately for both imaging modalities.

Results: 81 out of 225 patients demonstrated pCR which is defined as no residual microscopic or macroscopic tumour foci. mCR was achieved in 66% of patients and sCR in 60% of patients. Kappa method was used to calculate the agreement between mammography and sonography in predicting pCR as well as to individually correlate mCR and sCR with pCR. The sensitivity, specificity, PPV, NPV of mammography in predicting pCR was 65%, 80%, 66% and 79% respectively. The sensitivity, specificity, PPV and NPV of sonography in predicting pCR was 59%, 83%, 68% and 77% respectively. The sensitivity, specificity, PPV and NPV of combined mammography and sonography was 65%, 86%, 72% and 81% respectively.

Conclusion: Both mammography and ultrasound are important in assessing tumor response post neoadjuvant chemotherapy. Mammography is more sensitive while sonography demonstrates better specificity. However the combination of sonomammogram increased the specificity of the study. The agreement of pCR with mCR and sCR was moderate.

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A CRITICAL ANALYSIS ON QUALITY OF CHEST RADIOGRAPHS POSTERO-ANTERIOR PROJECTION BASED ON EUROPEAN GUIDELINES; OUR LIMITATIONS AND IMPROVEMENTS

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Introduction: Chest X-ray is one of the most common examinations performed in any health facility centre. It has a significant value in diagnosing early pathology related to lungs, mediastinum and bones, while many times it is also very helpful in detecting upper abdominal and other soft tissue abnormalities.

Material and Methods: An audit on Chest radiographs (Postero-Anterior projection) has been conducted in department of Radiology Shaukat Khanum Memorial Cancer Hospital by selecting a subset of 500 Chest radiographs out of 6660 X-rays after applying an Inclusion and Exclusion criteria in duration of 3 months.

Quality of radiographs were assessed on 8 different criteria including; Adequate inclusion, adequate projection, adequate penetration, adequate inspiration, rotation, Scapular retraction, vertical tilt and presence of artefact. Each radiograph was reviewed carefully and scored individually on each of these criteria with an aggregate score of 8.

Results and Conclusion: Results were compiled and the average score of the audited radiographs is calculated as 5.9 with mode = 6 and median = 6. The study revealed that 14.4% of the radiographs were of sub-standard (<50% score) quality. The main causes were wrong positioning, lack of proper collimation, non-usage of optimal radiographic factors, non-cooperation from patients and poor radiographic practice.

Re-evaluation study showed that sub-standard radiographs dropped to 7%. However regular quality auditing is the answer for continuous maintenance of standard. These types of studies are meaningful only if they are briefed to all radiographers and remedial measures are implemented.

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AN ANALYSIS OF CUMULATIVE EFFECTIVE DOSES FROM RADIOLOGIC PROCEDURES FOR PEDIATRIC WILMS TUMOR PATIENTS. ARE WE MEETING THE ANNUAL DOSE LIMITS?

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Introduction: The aim of this study is to estimate the cumulative effective doses (CEDs) from radiologic procedures for a cohort of Wilms tumour patients with diagnosed nephroblastoma on pathology. This study is important in highlighting the significant exposure that can be accumulated by children through diagnostic and interventional radiologic procedures, and it discusses the issues of potential future malignancy risk and approaches to help minimize the risks.

Methods: A retrospective cohort study of paediatric Wilms tumour patients was performed with complete data of imaging histories for one year. All procedures involving ionizing radiation were recorded, including plain radiography, computed tomography (CT), nuclear medicine (NM) studies, fluoroscopy, and interventional procedures. CED estimates were calculated.

Results: Individual CED estimates ranged from 2.4 mSv to 15.8 mSv, with a median of 9.8 mSv. CT and NM were the greatest contributors; CT constituted 25% of procedures (68 out of 262 procedures) and had 196.2 mSv of the total CED. Average CED estimated in nephroblastoma patients was 10.3mSV.

Conclusions: CEDs from diagnostic and interventional imaging for paediatric Wilms tumour patients vary considerably according to individual clinical courses, and imaging modalities used. However, increased awareness of radiation protection and justification of procedures, keeping in view the risk to benefit ratio of each examination may promote strategies to reduce the radiation burden to this age group.

TREATMENT VAULT DESIGNS: SURVEY RESULTS VS CALCULATED DOSE AT PRIMARY AND SECONDARY BARRIERS OF THREE RADIOTHERAPY CENTRES

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Objective & Introduction: Adequate shielding of radiotherapy treatment vault is an essential requirement. Proper shielding of the primary and secondary barriers reduces the radiation levels to “permissible levels” for radiation workers and the general public. The primary objective of this research work is to recalculate the shielding requirements of the existing treatment vaults at different radiotherapy centres across the country and verify the results with experimental measurements at primary and secondary barriers. This comparison yields technical recommendations for future treatment vaults designs.

Materials and Methods: The radiation survey has been performed at three different hospitals (Shaukat Khanum Memorial Cancer Hospital, INMOL Hospital & Shifa Hospital). Instantaneous dose rate was measured during this survey. Measurements at 90o and 270o degrees have been taken for 40×40 cm² with 45o collimator angle. Readings were taken with and without phantom on the treatment couch. Primary and secondary barrier calculations were carried out according to NCRP report 151.

Conclusion: After comparing the measured and calculated values of dose at a specific point outside the treatment vault (both primary and secondary), it was found that the numbers matched to a greater degree. Furthermore, the equations used for calculating primary and secondary barriers to the treatment vaults yielded good approximations. Thus it is safe to assume that once the calculations are done and the treatment vaults are completed as per Medical Physicist’s instructions, the radiation protection requirements would be met and the Accelerator will be good to use. However a detailed survey of the treatment vault is strongly recommended after the installation of the Accelerator to check for any in-consistencies in the material (concrete, lead, steel etc.) of the vault.

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AN AUDIT ON INPATIENT RECOGNITION, ASSESSMENT AND MANAGEMENT OF HYPONATRAEMIA

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Introduction: Hyponatraemia is the most common electrolyte abnormality in medical inpatients and is frequently found in people with cancer. Severe hyponatraemia is associated with high morbidity and mortality. Appropriate management of hyponatraemia requires careful assessment of patient's fluid balance, co-morbidities and medications. Rapid correction of hyponatraemia can lead to osmotic demyelination syndrome. Similarly early detection and appropriate management of hyponatraemia helps to avoid cancellation of elective surgery in people with cancer as identified in recent incidents at Shaukat Khanum Hospital.

Audit standards and Objectives: We aim to compare our current practice of recognition, assessment and management of hyponatraemia at SKMCH&RC with European Clinical practice guideline on diagnosis and treatment of hyponatraemia.

Our primary objectives are:

To assess whether hyponatraemia is identified by the clinical teams responsible for the patient and acted upon, whether appropriate investigations are performed, whether electrolytes are appropriately monitored, whether correction rates for sodium are safe and to assess patient outcome

Methods: We collected retrospective data for 100 consecutive admissions (either emergency or elective) with serum Sodium (Na) less than 125 meq/L. Data provided by MIS, collected and analysed through SKMCH&RC HIS systems. We divided patients into three subgroups based on severity of hyponatraemia i.e. Serum Na between 125-130 meq/L; serum Na: 115- 125 meq/L and serum Na less than 115 meq/L.

Results and Analysis: All 50 patients were receiving treatment for a cancer at SKMCH&RC. 44% and 30% of patients had essential and further investigations performed respectively to assess cause of hyponatraemia. 96% of patients had metastatic disease. 92% of patients had acute hyponatraemia and appropriate serum Na monitoring was performed in 92%. 50% of patients had a serum Na of 125-135 meq/L at the time of discharge. 66% of patients received medications contributing to hyponatraemia prior to admission. 22% of patients fulfilled criteria for SIADH.

Discussion: Hyponatraemia is noted in 15-20% of emergency admissions to hospital. Various studies have identified poor recognition and management of hyponatraemia. Currently there are no local or national guidelines in Pakistan to manage hyponatraemia or indeed in patients with cancer.

We aim to improve our current standards of practice of management of hyponatraemia in the context of these audit results and develop local protocols and pathways to quality and safety of patient care, reduce rate of potential cancellation of elective operative procedures and improve morbidity and mortality.

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UNDERLYING REASONS FOR DECREASED CALORIC INTAKE IN PALLIATIVE CARE PATIENTS REGISTERED AT SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL AND RESEARCH CENTRE

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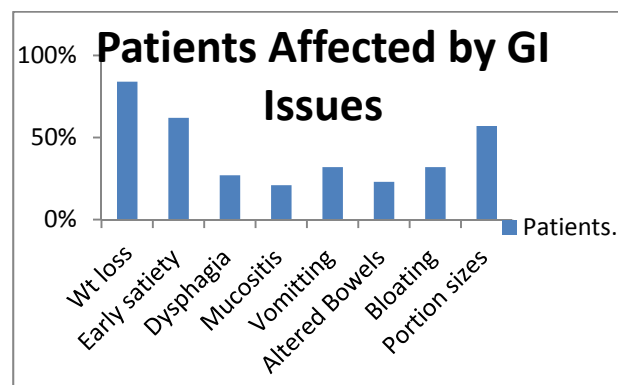
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Introduction: Anorexia and weight loss are common in advanced cancer. The progressive wasting may be due to decreased dietary intake as well as to increased energy expenditure mediated by metabolic alterations caused by the tumour. We studied the reasons of decreased caloric intake in patients registered at Shaukat Khanum Memorial Cancer Hospital & Research Centre (SKMCH&RC) in terms of GI symptoms (odynophagia / dysphagia, mucositis /sore throat,vomiting /nausea, anorexia, altered bowel function) ,Physical, Social and Financial issues.

Methods: Random sample of adult 100 patients from palliative care was taken and were interviewed using a questionnaire. A correlation/regression analysis was conducted on patients undergoing treatments of different types of cancer registered at SKMCH&RC.

Results: Weight change in among patients (n= 0.3400), Early satiety was seen among patients (n= 0.5200),

(n=0.7700) had odynophagia/dysphagia, (n= 0.7500) faced change in food's taste ,(n=0.9100) patients had mucositis ,Anorexic patients (n=1.22),Nausea/vomiting was a problem among patients (n=0.7300) ,altered bowel functions among (n=0.8800) ,Bloating (n=1.160), (n=0.7677) of patients had tiresome physical issues around meal timings, Mobility effected intake of patients(n=0.6100) .Lack of food options caused decreased caloric intake among patients (n=0.8800) ,Financial concerns/budget affected caloric intake in patients(n= 0.8200), Awareness level affected food intake in (n=0.9100) patients .



Conclusion

These findings indicate that GI issues contribute to decrease caloric intake in patients, however physical issues and social /financial issues come as second and third factor respectively.

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HEMOSTASIS - FROM THE BATTLEFIELD TO THE TUMOR FIELD

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Introduction: Acute upper gastrointestinal bleeding (UGIB) is among the commonest medical emergencies. It manifests as hematemesis, coffee ground vomitus or melena. Cancer is relatively less common albeit an important cause of UGIB. Bleeding control by endoscopic therapies is achieved by various modalities including (1) Mechanical devices (haemostatic clips and band ligators), (2) Thermal modalities (electro cautery, heater probe, Argon plasma coagulation, laser photocoagulation & radiofrequency ablation) and (3) Injection therapy (epinephrine & ethanol). In recent years haemostatic polymers have been developed for use in injuries on battlefields. These have been modified for endoscopic use as haemostatic sprays for achieving haemostasis.

Aim: This study was aimed at analysing our experience with haemostatic spray, with respect to its effectiveness at controlling an UGIB of tumour origin.

Methods: Data from 14 patients with UGIB originating from tumours treated with haemostatic spray was collected from August 2014 to August 2015 at our institution. Data collected included, demographics, baseline clinical characteristics and severity of bleeding as estimated by the Forrest bleeding class. Effectiveness of bleeding control was assessed in terms of control of bleeding at the end of the procedure, re-bleeding and/or a need for a repeat procedure. Adverse effects related to haemostatic spray were also noted.

Results: A total of 15 (12 males, 3 females) patients with UGIB originating from tumours were enrolled in this study. The mean age was 50 years (Range 30 – 71). Majority of the bleeds (80%) occurred from either gastric tumours, the gastro-oesophageal junction tumours or oesophageal tumours. The Forrest class bleeding score in the majority of the patients (93%, n=13) was 1b. Acute bleeding control was achieved in all 15 of the patients using haemostatic powder. 11 out of 15 (73%) patients did not have a repeat bleeding episode within seven days of the procedure. Two of the patients were referred for radiotherapy, one expired and one was lost to follow up. A repeat endoscopic procedure for achieving haemostasis was required in only one of the patients. There were no adverse effects attributable to the haemostatic spray in any of the patients.

Conclusion: Haemostatic spray appears to be an effective mode of achieving haemostasis of tumour origin, particularly diffuse oozing type of bleeding (Forrest class 1b), in an acute setting. A larger number of patients in a prospective manner are required to further confirm this finding.

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LONG TERM EFFECTS OF TAXANES BASED NEOADJUVANT CHEMOTHERAPY IN ADVANCED NON-METASTATIC BREAST CANCER

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Purpose: Pakistan has the highest rate of breast cancer for any South Asian population. We report on long term response and survival of primary non-metastatic breast cancer patients treated with neoadjuvant Adriamycin/Taxanes (AT) based regimens.

Methods: Between 1995 to 2009, we identified 517 women with pathologically confirmed breast cancer. All patients received neoadjuvant chemotherapy with AT based regimen followed by surgery. Median age was 43 years (range 17-71 years). AJCC stage; stage II 54%, stage III 46%. Axillary nodes were palpable in 72% of the patients at presentation. Histological sub-types were infiltrating ductal carcinoma 95%, infiltrating lobular carcinoma 3% and others 2% respectively. Pathological grade was I/II in 44% and grade III 56% of the patients. ER, PR, and Her2-neu receptors were positive in 44%, 40% and 24% respectively. 21% of the patients had triple negative breast cancer. Post-operative radiotherapy was delivered to 94% of the patients. Patients with positive ER/PR receptors also received hormonal manipulation. Median follow-up duration was 7.6 years (range 3.5-8.2 years).

Results: Following neoadjuvant chemotherapy, pathological response was; complete response 13.5%, partial response 21%, stable disease 52% and progressive disease in 13% of the patients respectively. Breast conservation was possible in 36% of the patients. The 7 year overall survival (OS) and disease free survival (DFS) in patients with CR was 60% and 56% respectively. The 7 year OS and DFS in patients without CR was 33% and 29% respectively. On multivariate analysis T stage ($p=0.001$) and response to neo-adjuvant chemotherapy ($p=0.001$) were found to be independent predictors for OS and DFS.

Conclusions: Long term results shows that pathological response to neoadjuvant chemotherapy is a predictor of long term survival. Chemotherapy regimens with high response rates merit evaluation in randomized trials to improve outcome in locally advanced breast cancer.

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HEAD AND NECK CANCER IN A DEVELOPING COUNTRY- A HOSPITAL BASED RETROSPECTIVE STUDY ACROSS 10 YEARS

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Introduction: Head and Neck Cancer is common in several regions of the world and is on rising trend in third world population.

Material and Methods:

Men and women diagnosed with HNC from 2004-2014 from Cancer Registry Database of SKMCH and RC comprising the following sites: Lip, Oral cavity, Pharynx, larynx, salivary glands, Nose and ear. Demographic data for each individual including age at diagnosis, sex, risk factors, grade, stage, geographic location were all obtained from the same database.

Results:

A total of 5027 patients has presented to Head and Neck Clinic, Shaukat Khanum Memorial Cancer, Hospital and Research Centre from 2004-2014 with mean age + SD of patients was 58.33 + 20.54. More than half of the population is from the Province of Punjab 3385(67.3%) followed by KPK province 1287(25.6%). Overall prevalence of Head and Neck cancer is approximately twice 3298 (65.6%) in males. Overall 29.1% patients had history of smoking. (Table 01) Almost 28% of males were Ex or current smokers in comparison to females where smoking as a risk factor is minimal <2%. Betel nut as a risk factor is approximately 3 times more common in males. Apart from all, Naswar (Snuff dipping) is almost 6 times more common in males and significantly higher (54%) population belongs to KPK province. Smoking has emerged enormously as a risk factor in the province of Punjab i.e. 78.5% as compared to other parts of the country.

Of all the sites in Head and Neck region, Oral cavity is most commonly involved (42.6%) site where anterior 2/3rd of the tongue is frequently involved sub-site followed by Buccal mucosa and lower alveolus. Larynx is the 2nd most commonly involved (13%) site with most of the cases involving glottis. Skin malignancies are 3rd on the list (11.6%), salivary glands contribute 6.9% to head and neck tumours with parotid as the most commonly involved salivary gland (Table 01). Among all Head and Neck cancers, squamous cell carcinoma is the most common histological type presented to our institute (69.2%) followed by basal cell carcinoma (6.6%), mucoepidermoid carcinoma (4%), adenoid cystic carcinoma(3.6%) and 1.9% adenocarcinoma. Amongst the histologic differentiation, 2016(40%) had well differentiated and 1891(37.6%) had moderately differentiated tumours, where as poorly differentiated and undifferentiated account for 16.9% and 5.3% respectively.

Conclusion:

A significant number of patients have been accepted with intent to cure the disease (81.1%) while only few (11.7%) have been treated with palliative intent. Majority of patients presented in advance disease; 43.4% in stage IV disease Response to chemo-radiation, whether neoadjuvant or adjuvant was complete in 1889 (37.6%) patients.

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BREAST CANCER TREATMENT IN HIGH RISK ELDERLY PATIENTS**R. BANO, A.I. KHAN, W. ZAFAR, A. A. ZAIDI, A. A. ZAIDI, H. M. KHAN, M. Z. CHAUDHARY****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL & RESEARCH CENTER LAHORE**

Background: Elderly breast cancer patients usually have multiple comorbid conditions and therefore may not be offered standard treatment including (surgery, chemotherapy, radiation therapy and hormonal therapy) according to the tumours biology. We present a review of elderly breast cancer patients 65 years and above treated at our hospital to assess whether high risk elderly patients with aggressive tumour biology can be offered standard treatment despite having multiple comorbid conditions.

Methods: We identified patients, 65 years or older, who were diagnosed and treated for breast cancer at a single centre and extracted data regarding patients' demographics, baseline clinical characteristics, comorbidities, treatment and outcomes.

Results: A total of 407 patients were identified, 399 (98%) of patients were females. Mean age at diagnosis was 70 years (range 65-90 years). Bilateral disease was found in 17 (4.2%) patients while the remaining were approximately equally divided between left and right breast cancer. Invasive ductal carcinoma was most common histopathology seen in 299 (73.5%) patients and neuroendocrine breast tumours were found in 2 patients. Single comorbid condition was present in 34% while 25% had two and 16% had three or more comorbid conditions. Surgery was successfully performed in 361 (88.6%) patients, 43.5 % received chemotherapy, radiation therapy was received by 70.8% patients, and 81.6% patients received adjuvant hormonal therapy.

Conclusions: Elderly patients of breast cancer may be offered treatment according to the tumours biology and their overall functional status. Our experience suggests that triple negative , node positive, advanced stage high risk elderly patients with multiple comorbid conditions but overall good functional status may tolerate standard therapy and are likely to benefit from standard therapy, therefore they may not be deprived of chemotherapy or radiation therapy if they present with aggressive disease and are otherwise healthy.

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STUDY ON QUALITY OF LIFE OF BREAST CANCER PATIENTS RECEIVING FIRST LINE CHEMOTHERAPY IN A TERTIARY CARE HOSPITAL

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Aim: The aim of our study is to assess how the quality of life is affected by the side effects of chemotherapy with doxorubicin, cyclophosphamide and Taxanes (Paclitaxel/Docetaxel), and to identify the factors which affect the quality of life most in breast cancer patients during chemotherapy cycles.

Method: Questionnaire form which includes questions on side effects of chemotherapy: psychological, spiritual, social, financial wellbeing and extent of fear in patients receiving chemotherapy. On this form, numbers are marked from 0 to 5 – level (0) indicating no problem and level (5) indicating a severe problem. The questionnaire form was filled by patients after explaining the study to them and after taking their consent. The patients' data was collected from the Oncology Daycare at the Aga Khan University Hospital.

Results:

Problems faced by breast cancer patients on chemotherapy: It was seen that most patients faced mild symptoms of fatigue, appetite changes, and aches/pain. However, patients also claimed to face no, as well as mild, changes in sleep; responses for vaginal dryness/menopausal symptoms and menstrual/fertility changes also fell within this range. Very few patients expressed severe responses.

Common fears faced by breast cancer patients on chemotherapy: Most patients expressed relatively extreme fears of hair loss and financial burden. However, only moderate fears of disease recurrence, metastasis, future diagnostics tests and feelings that life had returned to normal, were observed.

Patients' psychological well-being was taken into consideration: Responses were moderate in this area. Patients found it mildly difficult to cope due to treatment and concentrate/remember, as well as expressed feeling only somewhat happy, satisfied, and useful, and in control of their lives.

Social concerns of breast cancer patients: Patients were mild-to-greatly concerned about distress caused to their families, isolation caused by their illness, other female relatives regarding BRCA, and financial burdens incurred. These patients also claimed to receive relatively sufficient support, and none-to-mild impact on sexuality as a result of their disease.

Spiritual well-being of patients on chemotherapy: Responses regarding participation in religious activities, changes in spiritual life, sense of purpose, and hopefulness, were in the mild-to-high range. Patients expressed mild uncertainty about their future and moderately positive changes in their lives as a result of their illness.

Conclusion: On analysis of the data, it was concluded that the factors which mostly affect a patient's quality of life during chemotherapy cycles are fatigue, appetite changes, loss of hair and financial burden. Besides this, factors such as social, spiritual and psychological well-being, which includes happiness, satisfaction, usefulness and difficulties in carrying out routine work, also affect the quality of life greatly. Other problems, such as vaginal

dryness, infertility, menopause, mild fears of recurrence of disease, patients' uncertainty about their future, positive changes in life and future diagnostics tests, are factors that affect the quality of life mild-to-moderately.

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BENIGN AND MALIGNANT LESIONS OF SALIVARY GLANDS IN PAKISTAN: SIX YEARS DATA FROM THE LARGEST GOVERNMENT BASED REFERENCE LABORATORY OF SINDH

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Background: The spectrum of salivary gland lesions is wide and the relative prevalence of neoplastic versus non-neoplastic lesions is variable in different studies. The diagnosis of salivary glands lesions, usually presenting as a facial or neck lump, is a clinical dilemma for surgeons and histopathologists due to their unique anatomical location. Data regarding spectrum of salivary gland lesions is scanty in Pakistan. This study will therefore pool data into national and international statistics for salivary gland disorders.

Objectives: To describe Pathology based spectrum of salivary gland-lesions in Pakistani population.

Methodology: A six years observational study conducted at the Department of Histopathology, Dow diagnostic, reference and research laboratory (DDRRL), Karachi. All salivary gland lesions received at the laboratory during 2009-2014 were included in the study.

Results: A total of 370 samples were investigated. Of these, a total of 104(28%) were non-neoplastic and 266(72%) were neoplastic lesions. Out of 104 non-neoplastic lesions, 61 cases (58.6%) were of inflammatory origin and 43 (41.3%) were mucoceles. Out of 61 inflammatory lesions, chronic sialadenitis 48 cases (78.6 %) were the most common lesions. Submandibular gland was the most common effected site. For mucoceles, lower lip was the most common site.

Of the 266 neoplastic lesions, a total of 209 (78.5%) were benign while 57 cases (21.4%) were malignant. Pleomorphic adenoma was the commonest salivary glands benign neoplastic lesions, 188 (89.9%) followed by benign epidermal inclusion cysts as 6 cases (2.8%) and Warthin's tumour as 4 cases (1.9%). Parotid glands were involved in majority of pleomorphic adenoma cases, 132 (70.2) out of 188 cases. In malignant tumours, 21 cases (36.8%) of Adenoid cystic carcinoma were the most common salivary gland malignant neoplastic lesion, 18 cases (31.5%) were mucoepidermoid carcinoma as the second most common malignant lesion followed by 7 cases (12.2%) of Acinic cell carcinoma. Submandibular gland was the most common site in adenoid cystic carcinoma while parotid gland involved in majority of mucoepidermoid carcinoma.

Conclusion: Chronic sialadenitis was the most common non-neoplastic lesion, pleomorphic adenoma was the most common benign lesion and adenoid cystic carcinoma (followed by mucoepidermoid carcinoma) was the most common malignant lesion.

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OUTCOMES OF PATIENTS WITH ENDOMETRIAL CANCER - 5 YEAR EXPERIENCE FROM A TERTIARY CARE CENTER

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Objectives: To evaluate the clinicopathological features, patterns of relapse, disease free survival and overall survival of the patients with endometrial cancer and determine the effect of independent prognostic factors.

Methods: 177 patients with histological diagnosis of uterine carcinoma treated at SKMCH from January 2008 to December 2012 were identified from hospital data base. Their medical records and details of treatment were obtained and reviewed retrospectively. Patients were staged using FIGO 2008 classification. Disease free survival (DFS) and overall survival (OS) were calculated using Kaplan-Meier method and Log Rank was used to assess the prognostic significance of individual variables.

Results: The median age was 57 years (Range 27-75).98% had upfront surgery with total abdominal hysterectomy and bilateral salpingophrectomy with selective pelvic node dissection according to the risk of recurrence, while 2% had biopsy only. According to FIGO classification, Stage I,II, III, and IV tumours were identified in 72.3%,11.9%,10% and 9% of the patients, respectively. 81% of the patients had Type 1 carcinomas followed by carcinosarcomas 10% and rest were serous and clear histology.

The median follow up was 2.6 years and the 5 years DFS and OS were 68 % and 65% respectively. The statistically significant variables having impact on OS and DFS were age, advanced stage, serous papillary and clear cell histology and tumour Grade.

At the time of analysis 158 patients were alive, 5 patients had local recurrence and 25 had distant relapse.

Conclusion: Endometrial carcinoma presents with early stage disease which is associated with better DFS and overall survival. Recurrent disease is associated with several independent prognostic factors which should be considered for risk stratification and adjuvant treatment.

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CONSUMPTION OF DEEP FRIED FOODS INTAKE AND BREAST CANCER RISK AMONG WOMEN IN KARACHI, PAKISTAN - A MATCHED CASE CONTROL STUDY

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Background:

Diet could be a major modifiable risk factor for breast cancer prevention.

Objective: The objective of this study was to assess the association between different food items and breast cancer among women attending two tertiary care hospitals in Karachi, Pakistan.

Materials/Methods: 284 cases of breast cancer and 580 controls, matched according to age (+ 5yrs) and hospital, were interviewed. A detailed quantitative food-frequency questionnaire was used to assess the usual intake of 36 food items. Conditional logistic regression analysis was conducted to assess the association between tertiles of intake of each food item and breast cancer. Results

Consumption: of fish (adjusted odds ratio (OR) 1.66, 95% confidence interval (CI): 1.11, 2.49) was positively associated with breast cancer comparing the highest to the lowest tertile of intake. We also observed a positive and graded association between intake of halwa poori and breast cancer (OR 1.71, CI: 1.16-2.52), OR in the highest as compared to lowest tertile. Fried potato intake was associated with higher breast cancer (OR 1.85, CI: 1.21, 2.81). Conversely we observed an inverse association between breast cancer and intake of green tea and milk dessert with higher levels being protective (OR 0.17, CI: 0.03-0.88 and OR 0.54; CI: 0.35, 0.82, respectively).

Conclusion: The unexpected association of breast cancer with use of fish may be explained by its usual consumption in deep fried form in our setting. Frequent consumption of other deep fried food items like halwa poori and French fries were also associated with an increased risk of breast cancer.

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INITIATION OF SAFE AND COST-EFFECTIVE HEPARINIZED LOCKS FOR CENTRAL VENOUS CATHETERS OF PAEDIATRIC ONCOLOGY PATIENTS

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Objectives: The objective of project is to explore and implement safe and cost-effective way to use heparin to lock central venous catheters to maintain its functionality for subsequent chemotherapy doses in paediatric oncology patients.

Material and Methods: Data was collected for number of patients with central venous catheters, its estimated consumption and cost of heparin vial on patients. International best practices were looked for locking central lines with heparin. Findings were shared with a multi-disciplinary group of physicians, pharmacists and nurses. Various pharmaceutical brands were looked upon for availability of pre-filled heparinized saline flushes. Co-ordination was done with sterile preparation area in AKUH pharmacy to prepare 5 ml syringes of heparinized saline of 100 units/ml concentration. Previous practice of nurses for locking of venous catheters with heparin after dilution from vial at floor level was replaced through usage of pre-filled locks received from pharmacy.

Results: 80% reduction in cost of heparinized lock resulted for patients. Previously, patients were charged Rs 540 for one time heparin lock and after project one heparinized lock charged only Rs 70 for patient. Secondly, accuracy and consistency in flushing volumes of central lines was achieved.

Conclusion: Flushing and locking of central lines with heparin is essential to ensure patency of central venous catheters throughout chemotherapy course. Pre-filled heparinized saline flushes proved to be cost-effective and safe for paediatric oncology patients who already have huge financial burden due to disease.

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VOLUMETRIC MODULATED ARC THERAPY (VMAT) VS. FORWARD INTENSITY MODULATED ARC THERAPY (FIMRT) OF HEAD AND NECK CANCER. A SINGLE INSTITUTIONAL COMPARISON

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Objective: To compare the radiotherapy treatment planning for head and neck cancer of two advanced techniques i.e. VMAT and FIMRT to improve the treatment and verification efficiency and also to improve patient comfort.

Methods: Sixty patients of head and neck cancer re-planned by VMAT and FIMRT were studied retrospectively. VMAT plans were made using Ergo++ Planning system and FIMRT plans were made by Precise Planning system. Dose rate varies in VMAT while in FIMRT; a beam is divided into several beamlets. The VMAT and FIMRT plans were evaluated for homogeneity and conformity of radiation dose to the targets, dose to the organs at risk and the time spent for these techniques.

Results: Both treatment planning techniques showed better target coverage and better sparing of organs at risk. The 95% of the tumour was receiving 95%-105% of the prescribed dose. Compared to FIMRT, VMAT showed reduction in beam delivery time by 35% to 45%. Conformity index for VMAT was 1.06 while for FIMRT was 1.11.

Conclusion: Compared to FIMRT plans, VMAT was able to reduce treatment time by 35% to 45%. However there was no significant difference in radiation dose to the tumour and organs at risk.

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CHARACTERISTICS AND OUTCOME OF PATIENTS WITH DIFFUSE LARGE B CELL LYMPHOMA--TREATED WITH CHEMOTHERAPY OR CHEMO-IMMUNOTHERAPY**M. QUBTIA , K. MUNNAWAR , M. A. HAMID , F. BADAR, A. HAMEED****SHAUKAT KHANUM MEMORIAL AND CANCER HOSPITAL, LAHORE**

Objectives: To evaluate the outcomes of adding Rituximab to standard chemotherapy regimens in the form of disease free survival (DFS) and overall survival (OS), in patients with DLBCL in Pakistani population.

Materials and Methods: Retrospective data of 750 patients who got registered at Shaukat Khanum memorial cancer hospital and research Centre, Lahore, Pakistan (SKMH&RC) between 2007 and 2014 were studied. After excluding those patients without baseline staging workup, who could not complete at least 3 cycles of chemotherapy, and who lost to follow up, we were left with 337 patients for final analysis. End of therapy response and disease status at three years (D3y) and patient status at three years (P3y) based on clinical and radiological parameters were utilized to calculate the DFS and OS. DFS and OS were compared between patients who received chemotherapy with or without Rituximab. These two treatment combinations were also analysed for responses in the presence of radiotherapy.

Results: In our study we found that 129(38.3%) patients received Rituximab plus standard chemotherapy(R-Chemo) while 197 (58.4 %) received standard chemotherapy (Chemo only). the DFS was 85.3% in R-chemo cohort vs. 74 % in chemo only cohort (P value 0.049). The OS was 82.2% in R-chemo vs. 72.6% in chemo only cohort (P value 0.023. in addition Complete remission on EOT scan was noticed in 34(63.0%) in RCHOP with XRT as compared to 45(58.4%) in CHOP with XRT, p=0.01. There were less number of deaths in RCHOP/XRT cohort than CHOP/XRT, 9 and 13, respectively

Conclusion: The addition of rituximab to standard chemotherapy significantly decreased relapse rate and increased over all survival in Pakistani patient population .this study advocates the addition of Rituximab to standard chemo for patients with DLBCL for better disease outcomes.

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AUDIT OF LIVER RESECTIONS AT SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL & RESEARCH CENTRE

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Introduction: Liver resections may be required for primary liver tumours, metastatic tumours as well as contiguous tumours with liver involvement. We conducted an audit of the liver resections performed at our institution.

Methods: Between September 2014 and August 2015, all patients undergoing liver resections were included. Basic demographic, clinical, operative and follow-up data was recorded.

Results: A total of 20 patients were identified. Median age was 52 with 12 males and 7 females. The indications were hepatocellular carcinoma in 5 patient, metastatic colorectal cancer in 4, Gallbladder carcinoma in 3, and hepatoblastoma in 3 patients, while one patient each had Adrenal tumour, metastatic germ cell tumour, metastatic breast ca, metastatic cervical leiomyosarcoma and metastatic renal angiomyolipoma. In three patients extended right hemihepatectomy was performed while in two patients posterior sectionectomy was performed. In the remaining patients, one or two contiguous segments were removed. Liver parenchyma was transected using CUSA in 8 patients and EnSeal in remaining patients. Intraoperative ultrasound was used in 6 patients. Median ICU stay was 16 hours while median hospital stay was 5.5 days. There were no reoperations, readmissions or operative mortality.

Conclusion: Liver resections have been performed for a number of indications over the last one year. The audit shows safe performance of liver surgery evident from acceptable recovery and no perioperative mortality.

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EFFECT OF AROMATASE INHIBITORS ON EARLY STAGE BREAST CANCER AND PREVALENCE OF JOINT SYMPTOMS IN POSTMENOPAUSAL WOMEN

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Purpose: Aromatase inhibitors (AIs) improve survival in postmenopausal women with hormone-sensitive cancer, but can cause joint pain and stiffness. The purpose of the current study was to evaluate the prevalence of and identify risk factors for AI-related joint symptoms.

Patients and Methods: We performed a cross-sectional survey of consecutive postmenopausal women receiving adjuvant AI therapy for early-stage hormone-sensitive breast cancer. A questionnaire used, assessing the presence of joint symptoms that started or worsened after initiating AIs. Multivariate regression was used to compare those with AI-related arthralgia with those who did not report symptoms.

Results: Of 200 patients who completed the survey, 93 (46.5%) reported having AI-related joint pain and 89 (44.5%) reported AI-related joint stiffness. In multiple logistic regression analysis, being overweight (body mass index of 25 to 30 kg/m²) and prior tamoxifen therapy were inversely associated with

AI-related joint symptoms. Patients who received taxane chemotherapy were more than four times more likely than other patients to have AI-related joint pain and stiffness (odds ratio [OR] _ 4.08, 95% CI, 1.20 to 10.43 and OR _ 4.46; 95% CI, 1.74 to 11.56, respectively).

Conclusion: Our study suggests that AI-related joint symptoms are more prevalent than what has been described previously in clinical trials. The success of AI therapy depends on patients' ability to adhere to treatment recommendations; therefore, additional studies of interventions that may reduce these symptoms are needed.

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METASTATIC PROSTATIC CARCINOMA PRESENTING WITH INTESTINAL OBSTRUCTION

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Prostate carcinoma is one of the most frequent malignancies encountered in males. The advancement of this cancer is seen in axial skeleton and lymph nodes most commonly. However, liver, lung and adrenal metastasis may also occur.

We here report the case of a 65 year old male who presented to us with the signs and symptoms of intestinal obstruction. He underwent emergency laprotomy with right limited hemicolectomy and ileostomy. He had a threefold increased levels of Alkaline Phosphatase also the PSA levels were suggestive of Prostatic Malignancy.

The surgical specimen along with prostatic biopsy was sent for histopathology and was consistent with the confirmation of prostatic carcinoma also the metastatic involvement of ileum, caecum and the ascending colon.

Rarely has prostatic carcinoma been seen to metastasize to the gastrointestinal tract. A search of published reports revealed 4 cases of metastasis to stomach, 2 cases of metastasis to ileum and 1 case of metastasis to the sigmoid colon.

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CLINICAL PREDICTORS OF ANTICIPATORY EMESIS IN PATIENTS TREATED WITH CHEMOTHERAPY AT A TERTIARY CARE CANCER HOSPITAL

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Introduction: Advent of new antiemetic regimens¹ and wide spread availability of guidelines²⁻⁵ of chemotherapy induce nausea and vomiting is an integral component of oncology care, ineffective control of nausea and vomiting can have serious medical and psychological repercussions. It can cause dehydration, wound dehiscence, severe anxiety, depression and loss of control⁶. It can also result in treatment delays and can adversely affect compliance, health resource utilization and costs⁷. Many randomized trials have used different composites end points to assess chemotherapy induce nausea and vomiting and the use of rescue antiemetic as the primary end point⁸.

Nausea and vomiting occurring after the use of chemotherapeutic drugs has been a well-recognized fact for some time. Recently the focus has been on nausea and vomiting occurring before actually administering the chemotherapy⁹. This is called anticipatory emesis which develops when the patient thinks about the treatment, nurse, doctor, the sight of hospital, chemo bay or drugs. This can become a significant problem resulting in psychological barriers to treatment¹⁰.

Objective: To determine the clinical predictors of anticipatory emesis in patients treated with chemotherapy at a tertiary care cancer hospital.

Methods: This was a cross-sectional study conducted on 200 patients undergoing first line chemotherapy with minimum of two cycles at inpatient department and chemotherapy bay of Shaukat Khanum Memorial Cancer Hospital and Research Centre Pakistan. Anticipatory nausea and vomiting develops before administration of chemotherapy. Clinical signs and symptoms in patients with or without anticipatory emesis were compared using chi square test statistics.

Results: The mean age of the study participants was 36.68 (SD+12.23). The mean numbers of chemotherapy cycles administered were 3.23 (SD+1.2). Chemotherapy related nausea and vomiting was experienced by 188 (94%) patients and anticipatory nausea vomiting were in 90 (45%) of participants. Greater proportion of patients with anticipatory emesis were females fifty eight 52.7% p=0.016, patient with history of anxiety and depression experienced anticipatory emesis fourteen 15.5% p=0.031, fifty nine 57.2% p< 0.0001 patients with severe nausea after last treatment experienced anticipatory emesis, thirty nine 56% p= 0.025 patient with severe vomiting had anticipatory emesis, forty six 51.11% p<0.0001 patient with motion sickness mentioned anticipatory emesis.

Conclusion: Female gender, history of motion sickness, anxiety and depression, severe nausea and vomiting experienced in pervious cycle of chemotherapy were clinical predictors of anticipatory nausea and vomiting.

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BORDERLINE TUMORS OF THE OVARY: A CLINICOPATHOLOGICAL STUDY**S. YASMEEN, A. HANNAN, A. A. SYED, W. ZAFAR, N. SIDDIQUI****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL AND RESEARCH CENTRE, LAHORE
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Background: Borderline ovarian tumours (BOTs) are relatively uncommon ovarian neoplasms that characteristically lack stromal invasion which is a hallmark of invasive cancers. There is paucity of information about BOT from South Asia.

Methods: Patients with Borderline ovarian tumour (BOT) managed at Shaukat Khanum Cancer hospital Lahore, Pakistan from 2004 to 2014 were included for analysis. Data was recorded on histopathological types, age, CA-125, stage of disease, treatment modalities and outcomes.

Results: Eighty six (86) patients with BOT were identified through the hospital cancer registry. Median age of patients was 35 years. Forty two (48.83%) patients had serous borderline ovarian tumours and 43 (50%) mucinous BOT, while one (1.16%) patient was diagnosed with mixed type. Using FIGO staging, 80 patients were classified as stage I (44(51.16%) stage IA, 21 (24.42%) IB, 15 (17.44%) IC) while two patients IIA, IIB and stage III each. Median follow-up time was 31.5 months (3-114 months). All patients were treated with primary surgery. Seventy (81.39%) patients underwent complete surgical resection of tumour. Forty three (50%) patients had fertility preserving surgery. Remission was achieved in 73 (84.88%) patients. Recurrent disease was observed in 13 (15.16%) patients, all within first 3 years of diagnosis. Time to recurrence (TTR) was 9.3-30.5 months. Five patients had invasive recurrence and eight had borderline tumours at recurrence. On univariate and multivariate analysis, late stage at presentation, incomplete surgical resection and peritoneal implants on histopathology were significantly associated with invasive recurrence.

Conclusion: Patients with BOT present at a younger age compared to invasive epithelial cancer of the ovary. Despite a low malignant potential, relapses were noted possibly due to incomplete surgery and staging information, advanced stage at presentation and peritoneal implants on histopathology. Because of a good prognosis, fertility sparing surgery should be considered in young patients. Complete excision of tumour and prolonged follow-up are advised because recurrence and transformation to invasive carcinoma may occur.

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PROGNOSTIC SIGNIFICANCE OF CA 19-9 IN PANCREATIC AND PERIAMPULLARY CANCERS

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Introduction: Despite advances in the management of pancreatic and periampullary cancer, a significant proportion is irresectable at presentation due to metastatic or locally advanced disease. CA 19-9 is a serum marker for pancreatic cancer mainly used for monitoring response to therapy. We aim to look at the prognostic significance of CA 19-9 in pancreatic and periampullary cancers.

Methods: All patients with pancreatic or periampullary cancers presenting to our institution were included. CA 19-9 levels at presentation, tumour size, resectability, metastasis at presentation, response to therapy and recurrence were assessed. SPSS V 20.0 was used for statistical analysis.

Results: A total of 187 patients were identified between 2011 - 2013. Of these 118 were pancreatic cancers and 69 periampullary cancers. CA 19-9 level varied from <2.5 to 22455 with median CA 19-9 level of 96.7 (IQR 15.8 – 859). The median CA 19-9 level was 27 in patients with resectable cancer and 239 in patients with irresectable cancer (p: 0.000). The median CA 19-9 level was 80 in patients with no metastatic disease at presentation compared to 498 in patients with metastatic disease (p: 0.031). The Receiver operative curve for resectability (Figure 1) showed an area under the curve was 0.674 (95% CI 0.597 – 0.751). Using a cut-off value of 200, CA-19-9 was able to predict irresectability with 80% specificity.

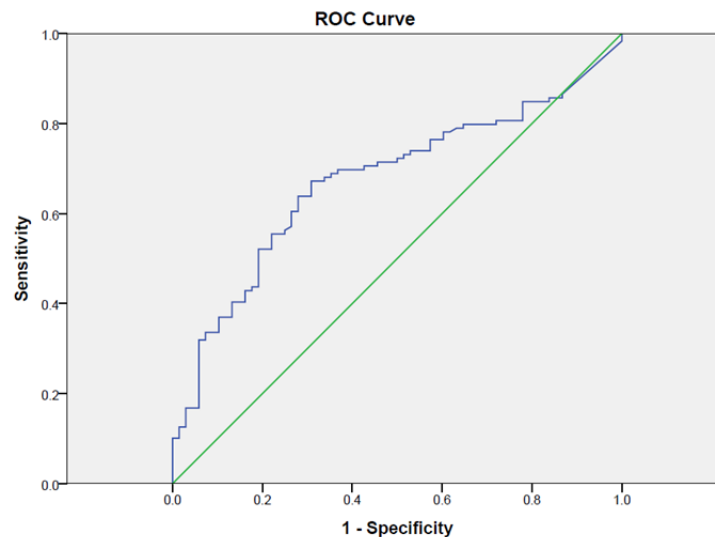


Figure1: ROC Curve of resectability with respect to CA 19-9 levels at presentation

Conclusion: Although mainly used for monitoring response to therapy, CA 19-9 levels can predict resectability and recurrence in our study. In addition, CA 19-9 levels are also significantly associated with metastatic disease at presentation in pancreatic cancer.

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RETROSPECTIVE ANALYSIS OF ONCOLOGIC OUTCOMES OF MINIMALLY INVASIVE VERSUS CONVENTIONAL ESOPHAGECTOMY FOR ESOPHAGEAL CANCER

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Background: Minimally invasive oesophagectomy is becoming the routine procedure for resectable oesophageal cancer with apparently similar oncological and peri-operative short and long term outcomes.

Objectives: Objective of present study is to evaluate the results of two procedures and their impact on patient outcomes.

Methods: The last ten year data of oesophageal cancer patients managed at our institute was analysed retrospectively. All patients demographic and baseline characteristics including age, gender, type and location of oesophageal cancer, radiological and endoscopic investigation, presence or absence of neo-adjuvant and adjuvant chemotherapy, body mass index prior to surgery was recorded. Patients were allocated into two groups depending upon the type of surgery conventional open or laparoscopic. The short term outcome measures are operative time, LOS, peri-operative thirty day mortality, readmission, operative complications and completeness of pathological specimen including number of lymph nodes and resection margins. Long term outcomes are disease free and overall survival over a period of 2 year follow-up.

Results: Out of 1252 registered patients for oesophageal cancer at our institute from 1st June 2005 to 30 June 2015, a total of 230 patients who underwent a surgical resection with curative intent were analysed. 45 % oesophagectomies were conventional and 55% minimally invasive. Short term peri-operative outcomes were comparable b/w the two groups with only significant difference in length of hospital stay which was 1 day shorter in minimally invasive group with a significant p value < 0.05. There was no statistically significant difference in the two arms for peri-operative mortality and minor or major complications rate. Mean number of lymph nodes removed in each group were 8-34 with no statistically significant difference, also disease free and overall survival stays comparable between two arms.

Conclusion: Minimally invasive oesophagectomies have same oncological benefits as compared to conventional surgery along with an enhanced recovery.

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SMALL CELL NEUROENDOCRINE CARCINOMA OF NOSE AND PARANASAL SINUSES: THE SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL EXPERIENCE AND REVIEW OF LITERATURE

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Background: Small cell neuroendocrine carcinoma (SNEC) is a rare disease of nose and paranasal sinuses. In contrast to other regions SNEC of this region has been reported to be recurrent and locally aggressive. No definite treatment has been established till date because of rarity of this disease. The purpose of this descriptive study is to present the series of 8 cases with SNEC of nose and paranasal sinuses.

Methods: Retrospective review of 8 patients presenting with SNEC of nose and paranasal sinuses, from January, 2005 to December, 2014, treated at Shaukat Khanum Memorial Cancer Hospital and Research Centre, was performed to determine the clinical characteristics and outcome of this disease.

Results: 7 of the patients were male and 1 was female. The mean age at presentation was 41 years (range: 24 to 59 years). Primary site of involvement in 4 patients was nasal cavity, ethmoid sinus in 3 and maxillary sinus in 1 patient. Half of the patients presented with AJCC stage IV-A. All patients had immunohistochemistry proven diagnosis. 7 cases were positive for cytokeratin, 5 for chromogranin, 2 with CD56 and 1 each with synaptophysin and neuron specific Enolase. Surgical excision of primary tumour was performed in 2 patients only. All patients received radiotherapy with mean doses 58Gy (Range 54-66Gy). Chemotherapy was administered in neoadjuvant setting in 4 patients and 1 received in concurrent setting. Recurrence occurred in 3 patients, one each with loco regional, distant and both. At a median follow up of 38 months, 5 patients were alive with no evidence of disease.

Conclusion: SNEC is a rare but aggressive neoplasm. Current standard of care varies but multi-modality approach should be the cornerstone in management of SNEC. Early diagnosis and surgical intervention improve the survival rates.

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RISK FACTORS OF ORAL CANCER IN LAHORE, PAKISTAN: A CASE CONTROL DESIGN

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Background: Increase in incidence of oral cancers associated with tobacco and smokeless tobacco products in South Asian countries, especially in Pakistan, is creating an alarming situation.

Objective: Current case-control study investigated the association of tobacco chewing, smokeless tobacco (naswar, gutka, supari/chalia), smoking and alcohol with oral cancer.

Methodology: 118 cases of oral cancer from hospital matched 354 controls were selected, during April to June 2015 from two tertiary care hospitals in Lahore. Case to control ratio was 1:3. Mean age of cases was 48.91±13.24 years, 77.1% being males and 22.9% females. Most of the participants belonged to low socioeconomic status.

Results: The association of pan with oral cancer was very significant ($p < 0.05$, OR= 9.755, 95%CI 5.7-16.5). However, 62/118 cases were non-chewers and still developed oral cancer. Pan chewing showed the strongest risk for oral cancer. We also found an increased risk for oral cancer in the consumption of Naswar ($p < 0.05$, OR= 3.941, 95%CI 1.6-9.8), gutka ($p < 0.05$, OR= 4.133, 95%CI 3.5-4.9), supari/chalia ($p < 0.05$, OR= 3.291, 95%CI 1.6-6.7) and alcohol ($p < 0.05$, OR=4.789, 95%CI: 1.7-13.6). Cigarette Smoking habit was present in both case and controls ($p > 0.05$, OR= 1.291, 95%CI 0.8-1.9) indicating the cultural habit prevalent in Pakistan.

Conclusion: Our study thus proved strong association between these predisposing factors and the development of oral cancer and the strength of association was found to be stronger than that of previous studies.

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DOES PROLONGED PRE-OPERATIVE CHEMOTHERAPY AFFECT RESECTABILITY AND SURVIVAL OF WILMS TUMOUR

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Objectives: To determine effects of prolonged chemotherapy on resectability of Wilms Tumour

Background: Survival of patients with Wilms tumour has improved significantly owing to development and adherence to comprehensive treatment protocols for the diagnosis, chemotherapy, surgery and radiation in addition to public awareness. Poor healthcare infrastructure, inconsistent referrals, and varied skill level of physicians hinder in following a regimented treatment protocol in developing countries.

Materials and Methods: A retrospective study of patients with Wilms tumour (WT) was conducted in a cancer hospital in Pakistan. Patients undergoing > 4 cycles of preoperative chemotherapy were included in the study. Patients following SIOP protocol (4 cycles of preoperative chemotherapy), having surgery outside and bilateral tumours were excluded. Three groups were identified. Group I patients received pre-operative chemotherapy followed by surgery. Group II includes patient where tumour remained inoperable after prolonged chemotherapy. Group III patients presented with a recurrence to our hospital that had upfront surgery elsewhere.

Results: A total of 25 patients with WT were studied. Eleven patients in Group I had 11 patients who underwent surgery after mean 16.4 (range 6 -34) weeks of chemotherapy. Five patients in Group II had inoperable tumours after 19.4 (16 -34) weeks of chemotherapy. Six of 9 patients in group III remained inoperable after 25 (6-42) weeks of chemotherapy, while 3 patients underwent excision of recurrence after 8 cycles of chemotherapy. Treatment response was observed in 11 (68.7%) patients of groups I and II compared to 0 patients in Group III.

Conclusion: Our review suggests that prolonged pre-operative chemotherapy does not improve resectability of Wilms tumours

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PENILE CANCER AND OUR EXPERIENCE AT SHAUKAT KHANUM HOSPITAL**M. F. SHAH, B. MASOOD, M. T. PIRZADA, I. I. NASIR, I. AHMED, K. MIR****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL AND RESEARCH CENTRE, LAHORE, PAKISTAN**

Background: Penile cancer is a rare malignancy which accounts for less than 1 % of adult male cancers. Phimosis, poor hygiene, smoking and human papilloma virus infection (type 16 and 18) are major risk factors for penile cancer. This analysis is to know the mode of presentation and treatment outcome of penile cancer in our setting.

Methods: We reviewed case notes of all patients who had histologically proven penile cancer from January 2005 to December 2014. Patient's demographics, predisposing factors, symptoms, type of tumour, treatment and its outcome were analysed using SPSS 19.

Results: Total number of 19 patients who had histologically proven penile cancer were included. Mean age was 64.7 + 11.02. Most of the patients were Muslims 16 (84.2%), followed by Christians 2 (10.5%) and one (5.3%) was Hindu by religion. Majority of the patients were smokers 17 (89.5%). Circumcision was done in 16 (84.2%), while 3(15.8%) were uncircumcised. Most of the patients presented with a lesion 16 (84.2%) and the rest 3 (15.8%) with pain. Patients having delayed presentation by one year were 15 (78.9%), 3 (15.8%) after 2 years and one patient (5.3%) after 5 years. Glans was the most common site 14 (73.3%) followed by shaft of penis 3 (15.7%). Squamous cell carcinoma remained the most common histological type 17 (89.47%), followed by one (5.3%) of each basal cell carcinoma and malignant melanoma. Total of 13 (68.5%) patients were treated and 6 (31.3%) refused treatment. Partial and total penectomy were performed in 4 (40%) patients each while wide local excision in 2 (20%) of the patients (n=10). Four (30.7%) patients had complication of treatment. There were 4 (30.8%) deaths (n=13). The overall five year survival was 69.2 %.

Conclusion: Penile cancer is an aggressive malignancy with generally poor outcome. There is a need of awareness among the masses of this cancer in order to detect the disease at an early stage. There is further need for specialized oncological centre in order to improve survival rates and outcome.

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SHORT TERM OUTCOME OF ADRENAL TUMORS MANAGED SURGICALLY AT SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL & RESEARCH CENTRE; A RETROSPECTIVE ANALYSIS

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Background: Adrenal tumours are rare tumours. Reported prevalence of incidental tumours is increasing with the continued advances in imaging technology. Currently laparoscopic intervention has been increasingly accepted as standard treatment. Purpose of the study is to evaluate short term outcomes of adrenal tumours managed surgically in terms of complications and duration of hospital stay.

Methodology: Retrospective database review of surgically managed patients of primary / metastatic adrenal tumours at Shaukat Khanum Memorial Cancer Hospital & Research Centre, Pakistan; January 2009 to August 2015. Demographics, clinical presentations, histopathological type, type of surgery, adjuvant treatment, post op hospital stay and complications were outcome measures. Duration of hospital stay and complications were compared according to type of surgery. SPSS 19 was used for statistical analysis.

Results: Total 29 patients with adrenal tumour were operated in the study period, mean age was 44.76 ± 17.6 , majority of patients were females 20 (69%), 1 (3.6%) had positive family history of adrenal malignancy. Majority of patients 25 (86.2%) belonged to Punjab province. 19 (65.5%) patients had incidental tumours. 25 (86.2%) had primary adrenal tumour and 04 (14.3%) had metastasis to adrenal gland; 01 (3.7%) metastatic mucinous adenocarcinoma, metastatic renal cell carcinoma, metastatic neuroendocrine tumour and metastatic papillary serous ovarian cancer. 06 (21.4%) patients underwent laparoscopic procedure, 12 (41.4%) had adrenocortical carcinoma, 08 (27.6%) had pheochromocytoma on histopathology. 03 (10.3%) had post-operative complication, mean duration of hospital stay in was 5.21 ± 1.6 days.

Conclusion: The short term outcome of resectable adrenal tumours is good. Laparoscopy is safe approach to deal with these tumours. Long learning curve is still going up due to less number of adrenal tumours and less number of surgeries.

TREATMENT AND PROGNOSIS OF LYMPHOMA BREAST, A REVIEW OF 31 CASES IN PAKISTANI POPULATION

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Background: Lymphoma breast is the rare form breast malignancies, worldwide and in Pakistan. It does not have a well-defined treatment strategy. Purpose of this study was to review of histological types of breast lymphomas, treatment modalities and outcome according to stage in 31 patients treated at a single institution.

Materials and Methods: 31 cases of Lymphoma Breast were registered and treated from the year 1995 to 2014 at Shaukat Khanum Memorial Hospital and Research Centre (SKMH & RC). Retrospectively their data was reviewed and analysed. Demographics studied were age, gender, clinical presentation, histopathological subtypes, immunohistochemistry, staging workup, stage at presentation, treatment modalities, and outcome. Cases were further divided into primary Breast lymphoma (PBL) , secondary breast lymphoma (SBL) according to Wiseman and Liao criteria.

Results: A total of 31 patients were treated in our institute. 15 (48.38%) cases were of PBL while 16(51.61%) were SBL. 28(90.3%) patients were female whereas only 3 were male. Median age was 35 years (22-76). Diagnosis was made on core or excisional biopsy. 16 (51.6%) patients had Left sided, while 10 (32.3%) had right sided tumours. Bilateral involvement was present in 5 (16.1%) cases only. B symptoms were present in 17(54.8%) cases. 4 (12.9%) cases were pregnancy associated. All patients underwent imaging of the breast, staging workup which included whole body computed tomography, bone marrow biopsy and bone scan, prior to start of treatment. Diffuse large B cell lymphoma (DLBCL) was the most commonest type , present in 20 cases(64.5%), remaining 14 patients had Anaplastic Large cell Lymphoma, Low grade B cell Lymphoma, Lymphoblastic Lymphoma, Hodgkin's Lymphoma, follicular Lymphoma, MALT and Small Lymphocytic Lymphoma. 9(29%) patients had bone marrow involvement at the time of presentation. Main stay of treatment was Chemotherapy RCHOP (Rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisolone) for Non Hodgkin's lymphomas. Surgery at our institute was performed for 3 patients, for progressive disease. Radiotherapy to the breast was offered in 14 (45.2%) patients. Complete response was achieved in 16 cases (51.6%) partial response in 5 cases, while disease progressed in 9 cases (29%). 3 patients developed local relapse after complete treatment ,while 4 developed bone and visceral metastasis, Brain metastasis were present in one case only. Follow up period was from 1 to 177 months. 12(38.7%) patients died. Five year survival was 35.48 %, and 10 years survival was 6.45%.

Conclusion: Patients of lymphoma breast should receive aggressive treatment, with combination of chemotherapy and radiation therapy. Surgery should be limited for diagnosis and palliation of local symptoms in progressive disease, bilateral breast lymphomas carries poor prognosis.

RECTAL CARCINOMA: DEMOGRAPHIC AND CLINICOPATHOLOGICAL FEATURES FROM PAKISTANI POPULATION PERSPECTIVE

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Background: Rectal carcinoma is ranked as the third most common cancer and considered to be a disease of elderly population. The risk of occurrence at a younger age is linked to the genetic arm of causation and has led to the development of many screening tools. Presentation in younger than 40 years of age has been reported to carry a poor prognosis. Purpose of the study is to analyse rectal patient characteristics in our population in view of designing a screening tool to detect the tumour earlier for better outcome.

Objective: To evaluate the demographical features of rectal carcinoma patients and compare the clinicopathological features according to different age groups managed at Shaukat Khanum Memorial Cancer Hospital & Research Centre, Pakistan.

Methodology: Retrospective review of database of managed patients of rectal adenocarcinoma (surgically or non-surgically) at Shaukat Khanum Memorial Cancer Hospital & Research Centre, Pakistan; January 2010 to October 2014. Clinicopathological features, patient's age (<40 or >40 years), sex, ethnicity (Punjabi, Pakhtoon, Sindhi, Balochi and Afghani race), family history of cancer, clinical presentations, staging, histopathological type and response to chemo-radiation were analysed according to ethnicity and age.

Results: 209 (43.8%) patients belonged to age group <40 with mean+SD age was 44.6+16.1 years. Majority of patients were males (70.2%). 82 (17.2%) patients had family history of cancers in 1st degree relatives (12.9% in <40 & 20.5% in >40 age group; p=0.037). Majority of patients belonged to Punjab province 240 (50.3%), followed by 148 (31%) from Khyber Pakhtoon Khuwa (KPK). Overall (432) 90.5% of patients presented with locally advanced tumours (T3/T4) (93.3% in <40 & 88.4% in >40 age group; p=0.008) and 7.8% with metastatic disease. Among histological types; 178 (37.3%) were moderately differentiated, 113 (23.7%) were poorly differentiated and 07 (1.5%) were rectal melanoma. In response assessment following Chemo-Radiation; 151 (31.7%) had partial response (PR), 110 (23.1%) had stable disease (SD), 90 (18.1%) had progressive disease (PD) and 28 (5.9%) had complete response (CR). 56 (31.1%) patients in <40 age group while 34 (17.1%) had progressive disease in >40 years of age group (p=0.002).

Conclusion: Locally advanced rectal carcinoma presentation is substantial in younger age group in Pakistan. Considering the numbers observed in this large single centre study and yet non availability of screening program in this part of world, we suggest a need of screening program in light of presentation of patients in young age with advanced disease.

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FREQUENCY OF MALIGNANCY IN SURGICAL JAUNDICE

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Introduction: Obstructive or surgical jaundice may be a life – threatening condition because of the interplay of various factors e.g. ascending cholangitis, acute renal failure, hampered defence mechanisms with poor antibiotics penetration, high serum fibrinogen/fibrin degradation products and peripheral & portal endotoxaemia. Therefore the differentiation between intra-hepatic cholestasis (also called as medical jaundice that cannot be much benefited from surgery) & extra-hepatic cholestasis (which can be benefited from surgery) should be made immediately after the admission of the patient.

Methods: A descriptive case series study was conducted to establish the common causes of surgically correctable jaundice and determine the frequency of malignancy in it.

Results: Out of 50 patients in this series, 13 (26%) presented with a malignancy which was the cause of the obstructive jaundice and had to be dealt with accordingly while the rest 37 patients (74%) had benign causes that were treated with endoscopy or open surgery.

Conclusions: Accurate diagnosis of obstructive jaundice depends upon clinical presentation & imaging studies like ultrasound abdomen & C.T scan Abdomen. ERCP & MRCP are effective tools in difficult cases. Stones in common bile duct (CBD) & carcinoma head of pancreas are the most common causes of the biliary obstruction. Open surgery is still the best approach to these problems. In cases of growth in biliary tree these patients should be operated in specialized centres with curative intent. ERCP with stenting or Bypass procedures should be carried out in advanced cases of malignancy

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WEIGHT CHANGES IN PATIENTS WITH HODGKIN LYMPHOMA AFTER TREATMENT

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Purpose: We undertook a retrospective review of weight changes in adults Hodgkin's lymphoma after treatment.

Methods: Data was collected from 405 patients enrolled in SKMCH&RC from January 2010 till December 2013. Patient and disease characteristics including age, stage, presentation and treatment details were noted. Baseline weight was evaluated at initial presentation and then at 6, 12, and 18 months after initial presentation.

Results: Progressive increase in weight was observed in patients after treatment. The mean weight gain at 18 months was 9.65 kg. At 18 months, 5.9, 8.0, and 7.8 kg more weight gain in stage II/III and IV, compared to stage I. Those with advanced stage of disease at presentation and complete response to treatment gained more weight than those in early stage and in PR ($p = <0.01$).

Weight gain was not significantly associated with, absence or presence of B symptoms, gender, age at presentation and radiation therapy.

Conclusion: The evaluation of Hodgkin lymphoma patients after treatment demonstrated considerable tendency for weight gain. This study showed statistically significant association between weight gain and stage of disease. as well as response to therapy.

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CLINICOPATHOLOGICAL CHARACTERISTICS OF PATIENTS WITH SYNCHRONOUS PRIMARY OVARIAN AND ENDOMETRIAL CANCERS

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Objectives: Synchronous primary endometrial and ovarian cancers are infrequent. The objective of this study is to evaluate clinicopathological characteristics and treatment outcomes of synchronous endometrial and ovarian cancer treated in our institution.

Methods: The clinicopathological characteristics of 12 patients with synchronous ovarian and endometrial cancer treated at SKMCH from July 2005 to July 2015 were reviewed retrospectively. Their medical records and pathology reports were reviewed in depth from hospital database. The histologic determination was followed by the World Health Organization Committee classification, and cancer stage was based on FIGO.

Results: The median age at the time of diagnosis was 50 years (Range 23-66). The incidence of synchronous primary endometrial and ovarian cancers was 2.01 % in patients with endometrial cancer. A total of 7 patients were menopausal (58%), 8 patients were nulliparous (66%) the median BMI was 29 kg/m² (range, 20–38).

The most common presenting symptom was abnormal uterine bleeding. According to FIGO stage 10 cases of endometrial were I/II (88%) and 2 cases were stage III (16%). Of the ovarian cancers, 9 cases were stage I/II 83.3% and 2 cases were stage III (16.7%).

Endometrioid cancer was the main pathological type in uterine carcinoma (86%) followed by serous carcinoma (14%) and similarly for ovarian cancer endometrioid was the most common pathology 67 % followed by serous/clear cell 16% and mucinous 16.7%. Most endometrial and ovarian primaries in our series were grade I and II tumours, 83% and 66% respectively.

8 patients (66%) had similar histology in both primaries while 4 patients (44%) had different histology. All patients underwent surgical intervention. Only one patient did not receive any postoperative adjuvant therapy. 10 patients received platinum-based adjuvant chemotherapy and six patients received adjuvant radiotherapy.

Conclusion: Synchronous primary endometrial and ovarian cancers are infrequent and distinct set of patients. Abnormal PV bleed was the most common symptom which helped in early detection. Majority of the patients belong to concordant endometrioid histology, low grade, had younger age and High BMI. Treatment should be tailored to the stage, histology, and grade of the individual tumours.

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LONG TERM SURVIVAL AND IMPACT OF VARIOUS PROGNOSTIC FACTORS IN T1, T2 ORAL TONGUE CANCER IN PAKISTAN

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Background: The objective of this study was to determine outcome in patients with early (T1/T2) squamous cell carcinoma of tongue (SCCOT) and impact of various prognostic factors on survival in Pakistan.

Methods: Between 2003 and 2009 a total of 137 patients with early oral tongue carcinoma underwent partial glossectomy with or without neck dissection followed by radiotherapy or chemo-radiotherapy. Kaplan-Meier estimates, log rank test and Cox-regression models were used for statistical analysis.

Results: There were 74 (54%) males and 63 (46%) females, median age 55 years (15 - 85). 95(69%) of the patients underwent both partial glossectomy and elective neck dissection. With a median follow up of 46 (6-110) months the overall survival (OS) of T1 and T2 tumours was 73% and 64%. A total of 29(39%) patients had occult metastasis. Patterns of failures included; local 19 (14%), regional 22 (16%), loco regional 4 (3%) and distant 5 (4%) respectively. The 5-year local control, regional control, loco-regional control was 86%, 82% and 72%. The only significant predictor of OS was clinical and pathological N stage in T1 patients and surgical procedure, grade, pathological N stage in T2 SCCOT.

Conclusions: Treatment of early tongue SCC effectively achieves local control and disease free survival. Nodal stage is the most important prognostic factor in terms of survival and recurrence in our set of population.

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HYPOFRACTIONATED RADIOTHERAPY IN GLIOBLASTOMA MULTIFORME**S. J. CHAUDRY, S. BUTT, S. USMAN, I. K. NIAZI, A. RASHID, S. HAMEED, A. RASHID, K. HUSSAIN****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL AND RESEARCH, LAHORE, PAKISTAN****Purpose:** To report overall survival in Glioblastoma patients treated with hypofractionated radiotherapy**Methods and Materials:** Retrospective review at Shaukat Khanum Memorial Cancer Hospital identified 62 Glioblastoma patients treated between Jan'2006 till July'2013 with hypofractionated radiotherapy (HRT) 48Gy given at 3Gy/fraction in 16fractions in post-operative settings. Temozolamide couldn't be given in concurrent setup due to cost constraints. Overall survival was calculated using Kaplan-Meier method.**Results:** There were 44 males (71%) and 18(29%) females with a median age of 50 years (20-71years). Performance status according to the WHO criteria was ECOG-0 76 %(n=47), 1 24%(n=15). 11% (n=7) of the patients underwent gross total resection, 83 %(n=52) had subtotal resection and 5%(n=3) had biopsy only. Response assessment on MRI at 3 months post HRT showed 22% (n=14) patients had regression, 34%(n=21) stable, 35% (n=22) progressive primary disease. With a median follow-up of 7.8months, no instances of grade 3 or higher non hematologic toxicity was reported. The median overall survival was 9months. Patients with ECOG-0 showed a median survival of 7months as compared to 6 months for ECOG-1. Patients with stable or partial response showed a median survival of 8 months in comparison to 6 months for progressive disease. There was no significant difference in median survival based on extent of resection. A Cox multivariate model confirmed a significant co-relation of age and response to radiotherapy on survival.**Conclusion:** Hypofractionated radiotherapy consisting of 48Gy in 3 weeks can be used for selected GBM patients to reduce the overall treatment time of conventional RT by 35-40% without apparent increased toxicity or decrement in survival in a low resource set-up.

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A LOCAL SURVEY OF PINUM HOSPITAL FOR THE EVALUATION OF TRANSFORMING CANCER CARE FOR THE CANCER PATIENTS

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Purpose/Objectives: The update information regarding transforming cancer care towards human experience of the suffering humanity health care system (Punjab Institute of Nuclear Medicine (PINUM), Faisalabad), health care providers and the patients who had gone through with cancer care along with possible solutions based on emotional or socioeconomic pressures.

Material/ Methods: The informational data of 400 cancer patients specifically designed Performa regarding the transforming cancer care problems and health recovery of the patients was collected from PINUM, Faisalabad. This was based on health care system, health caring family members and the patients.

Results: In developing countries like Pakistan, cancer is a silent killer of humanity and the collected information indicated that its prevalence was found significant in females (85%) and among them breast cancer significantly high (78%), above 60 years persons were more susceptible to oncological diseases as compared to children and youth. In males' leukemia (49%) was more common. Our studies indicated that most of under investigated persons (72%) did not comments about the transforming cancer care facilities and only a few (03%) know about the problem but they commented that there was no any innovation in this regards. About 96% family members have showed capabilities to bring the new life for the depressed patients and gave a new thought-able approach towards life. Therefore, it was because only the human responsibility for giving the hope to the cancer suffering humanity. In the care providing hospital system some innovation was done in the form of technical advancement in imaging and surgery and trained staff. In Pakistan especially in investigated hospital there are still a lot of improvements required for transferring the cancer care facilities even some advanced technical resources is available for the patients.

Conclusion: Therefore, rising costs of cancer treatments concerns to remodulate the health delivery systems with new methodologies, such products and medical devices as to reduce the economic pressures.

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TREATMENT OUTCOME OF ADULT BRAIN STEM GLIOMA: A SINGLE INSTITUTION EXPERIENCE

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Adult brain stem gliomas are rare accounting for 1-2% of adult gliomas. They are heterogeneous with varying clinical and radiological presentation. Prognosis remains poor because of limited surgical options and radiotherapy still remains the main treatment option. We report our clinical experience of treating brain stem glioma.

Materials and Methods: A Retrospective review was made to analyse the clinical presentation, diagnosis, treatment outcome and survival in adult brain stem glioma patients treated at Shaukat Khanum Memorial Cancer Hospital Lahore. Between July 2007 and August 2014,

Results: 46 patients were identified from Hospital record system. Diagnosis was mostly based on radiological findings with MRI brain and Biopsy was done only in 11 patients. 98% of the patients were treated with radiotherapy as a first line treatment on presentation and 1 patient was kept under close surveillance which was treated on progression. Median radiotherapy dose used ranged between (20-60Gy) with a median dose of 51Gy.

Age of the patients ranged from 18 to 72 years (median 33 years) with a Male to female ratio of 3:1. Median follow up duration was 9 months (range 1-72). Radiological response was seen in 65% (13% partial & 52% stable) of the patients. The median overall survival (OS) for entire cohort was 10 months. One and two year OS rates were 46% and 25% respectively. Radiological Low grade Glioma showed a median survival of 11.5 months and was found to be 9.5 months for High grade Glioma. ($p=0.864$). ECOG Performance status 0,1,2 and 3 showed median survival of 13.6, 11.5, 6 and 3 months respectively ($p=.02$).

Conclusion: Survival still remains dismal despite high radiotherapy dose. The role of cytogenetics and chemotherapy should be explored to improve outcome.

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TREATMENT OUTCOMES AND PROGNOSTIC FACTORS OF RECURRENCE IN ORAL CANCER PATIENTS

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Objective: To determine the outcomes in the management of oral cancer patients and identify tumour thickness as independent prognostic factors of recurrence.

Material and Methods: A total of 141 patients with oral squamous cell carcinoma, who underwent treatment at Patel hospital were prospectively included in the study. Study period ranged from April 2006 to April 2015. A study Performa was used to collect the demographic and clinical data. Fields included clinicopathological findings, tumour staging according to sites in the oral cavity, surgical intervention and radiation/chemo given to patient. Patients were staged according to AJCC system. Survival data was gathered and overall survival and disease specific survival was calculated. Data was entered on SPSS (version 21). Impact of clinicopathological factors on the recurrence is calculated using chi square and Fischer exact test. Kaplan-Meier curve will be applied for 5 year survival analysis well. P value of < 0.05 will be treated as significant.

Results: Out of 141 patients of squamous cell carcinoma there were 97 males and 44 females in the study. Mean age of the patients is 48 years. Majority of the patients, 62.4% had moderately differentiated SCC. Cheek tumours formed the major bulk of the disease (69 patients) followed by tongue tumours (38 patients). Majority of the patients 85(60.3%) were classified as late stage tumours. Patients were followed up for a mean period of 21 months. 30 patients developed recurrence, Tumour thickness >10 mm, reconstruction had association with recurrence but it was insignificant in univariate analysis. Stage IV disease was also identified as risk factor of recurrence and it was a significant association ($p=0.003$). 24 patients died of loco regional recurrence and 8 from distant Mets. Overall survival rate in oral cancer patients is 70.9% and diseases specific survival rate is 76.6%.

Conclusion:

Majority of the tumours were cheek tumours followed by tongue tumours. In our study moderately differentiated SCC was found in most patients. Tumour thickness >10 mm had recurrence. Stage IV disease was significant risk factor recurrence. Overall survival & disease specific survival were 70.9% & 76.6% respectively.

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ADULT INTRACRANIAL AND SPINAL EPENDYMOMAS: RESULTS FROM A SINGLE INSTITUTE IN PAKISTAN**M. IRFAN, S. BUTT, F. BASHIR, A. RASHID, A. JAMSHED, T. SADAF, I. K. NIAZI.****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL & RESEARCH CENTRE, LAHORE**

Ependymomas constitute up to 4-5% of adult CNS tumours and 10% of paediatric CNS tumours. Most common site is spinal cord. There is paucity of robust studies. Surgery and radiotherapy still remains the main stay of the treatment. We report our experience of treating adult intracranial and spinal ependymomas with radiotherapy.

Methods: 21 patients were treated for intracranial and spinal ependymomas with surgery followed by radiotherapy between Jan 2002 and Dec 2013 at Shaukat Khanum Memorial cancer Hospital & Research Centre. Retrospective analysis was performed to determine various patients' characteristics, prognostic factors, event-free survival (EFS) and overall survival (OS).

Results: Out of 21 patients, 7 (33%) had intracranial while 14 (67%) had spinal ependymoma. There were 16 (76%) male and 5 (24%) female with median age of 35 months (range 20-72). Surgery was gross total resection in 8(38%), subtotal resection in 10 (48%) and biopsy only in 3(14%) patients. All patients received radiotherapy with a total dose of 45-60Gy. With a median follow up time of 59 months, the 5-year OS and EFS were 74% and 63% respectively. Out of 21, fifteen patients are still alive and 6 were dead at time of last follow up. The median time to any event was 26 months. Survival was directly related to the grade of the tumour and low grade tumours did better as compared to high grade ependymoma. Similarly gross total resection was also linked with statistically better survivals.

Conclusion: Local control remains the main stay of treatment in ependymoma and complete surgical resection is associated with better survival however local radiotherapy results in good local control with improvement in survival in surgically irresectable high grade ependymoma and should be considered as a standard treatment.

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REVIVAL AFTER CARDIAC ARREST FOLLOWING RANITIDINE INJECTION IN A POST EXTENDED RIGHT HEMI-HEPATECTOMY PATIENT- A CASE REPORT**A. Q. QAZI, M. F. SHAH, F. HANIF****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL & RESEARCH CENTRE, LAHORE**

This case report is about a 2 year 8 months old boy, who was admitted in paediatric surgical oncology unit with non-metastatic hepatoblastoma. He had 6 cycles of cisplatin. He underwent extended right hemi-hepatectomy. He was recovering post operatively in intensive care unit (ICU) with normal physiological parameters for that stage of the recovery. He was on prophylactic dose of intravenous ranitidine. On 2nd post-operative day when he was due to be discharged from ICU, he developed cardiac arrest after a bolus of ranitidine given into his central venous line. Cardiopulmonary resuscitation was performed and he revived needing another period of overnight assisted ventilation. He underwent full body CT scanning and no other cause could be found. The patient was extubated successfully next morning. He developed a degree of cerebral hypoxia related encephalopathy and also mild decompensation of his liver function. However he subsequently recovered with full return of normal physiological function and was discharged from hospital after a week. There are some reports in literature describing ranitidine bolus related cardiac arrest. After ruling out all other possibilities we feel that the cardiac arrest was related to ranitidine injection given through the central line. We recommend that intravenous ranitidine should only be given slowly through a peripheral line.

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A RARE CASE OF PLASMACYTOID VARIANT OF UROTHELIAL CARCINOMA OF BLADDER: A CLINICOPATHOLOGICAL STUDY & LITERATURE REVIEW

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Introduction: Plasmacytoid variant of urothelial carcinoma is a rare malignant neoplasm in the urinary bladder recognized by recent WHO classification of urothelial carcinoma. It is an aggressive variant with poor prognosis that presents at an advanced clinical stage. Limited data is available about the pathological, immunohistochemical characteristics and clinical behaviour of this variant. Morphological distinction from other malignant neoplasms with plasmacytoid phenotype is critical for its management. Treatment remains a challenge due to late presentation of the disease, presence of metastasis at the time of presentation and lack of guidelines. We combined our case to already reported cases, with an intention to define the characteristics of plasmacytoid variant of urothelial carcinoma and to provide a therapeutic guidance for this rare disease.

Case Report : A 52 years old female, non-smoker, presented with a 2 months history of significant weight loss, anorexia, nocturia and increasing urinary frequency. CT chest abdomen and MRI lumbosacral spine & pelvis showed T3AN0M1 disease, bilateral obstructive uropathy and extensive bone metastasis. Other Abdominal & pelvic organs were unremarkable. Baseline labs revealed raised alkaline phosphatase only. Cystoscopy was performed and revealed an extensive tumor at the base, posterior and left lateral wall. Ureteric orifices could not be visualized. Transurethral bladder resection biopsy revealed a high grade urothelial tumor with a plasmacytoid variant, invading the lamina propria, detrusor muscle not identified in entire tissue specimen. On immunohistochemistry, the tumor cells were positive for cytokeratin and GATA 3.

Further, her scans and histopathology were discussed in our URO-MDT, chemotherapy was recommended. But, due to her deteriorating functional status, she was given ten cycles of radiotherapy for skeletal metastasis which showed significant improvement. Unfortunately, she died after 33 days of her diagnosis even before starting her chemotherapy. Literature review revealed that most plasmacytoid variant of urothelial carcinoma cases showed similar clinical and pathological features along with poor prognosis.

Discussion: Recent years have reported the illustrations and documentations of several morphological variants of urothelial carcinomas, which have significance from therapeutic and prognostic perspective. The plasmacytoid variant is an unusual variant. It came from the case reported by Sahin et al in 1991 and since then, to the best of our knowledge, less than 65 cases have been reported in the English literature with detailed pathological information.

Conclusion: Plasmacytoid variant of urothelial carcinoma is a rare and important variant from diagnostic, therapeutic and prognostic point of view. It has an aggressive behaviour with poor prognosis. It can be mistaken for other pathologies of bladder having plasmacytoid features and should be differentiated from them because of the difference in the therapeutic approach. The role of neoadjuvant chemotherapy is to be further evaluated.

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AUDIT OF PELVIC LYMPH NODE DISSECTION FOR ENDOMETRIAL CARCINOMA**S. ALI, R. SAYYED, A. A. SYED, T. SADAF****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL AND RESEARCH CENTRE**

Introduction: Pelvic lymph node metastasis associated with endometrial cancer carry a poor prognosis. However, routine lymphadenectomy has not conclusively been shown in prospective randomized studies to improve survival in endometrial cancer. We aim to analyse patients undergoing pelvic lymph node dissection for endometrial cancer at our institution.

Methods: All patients with endometrial cancer who underwent pelvic lymph node dissection in the last one year were included in the study. Clinical and demographic features were looked at. Data was analysed using SPSS V 20.0. Association of various factors in their ability to predict positive lymph nodes was looked at.

Results: Between August 2014 to August 2015, a total of 35 patients with endometrial cancer underwent surgery. Of these, 16 patients underwent pelvic lymph node dissection. The median operative time was not statistically different for surgery with or without pelvic lymphadenectomy. The indication of lymph node dissection was enlarged lymph nodes found on imaging in 7/16 patients compared to myometrial involvement of >50% on imaging in 9/16 patients. A median of 5 lymph nodes were retrieved. Only 2 of the 16 patients showed positive lymph nodes. There was no significant association between positive lymph nodes and enlarged nodes on imaging or myometrial invasion on imaging or pathology.

Conclusion: Pelvic lymph node dissection can be performed without a significant increase in operative time. There were no clinical or pathological factors identified to predict positive lymph nodes in our study, however the numbers are too small to draw any meaningful conclusions.

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RENAL EPITHELIOID ANGIOMYOLIPOMA AN UNPREDICTABLE TUMOR, A CASE REPORT

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Epithelioid angiomyolipoma (EAML) are rare tumours and belong to a family of tumours known as perivascular epithelioid cell tumours which also include classic angiomyolipoma. Renal EAML have a female preponderance and are often difficult to diagnose as they mimic renal cell carcinoma due to similar clinical symptoms and imaging. There are few anecdotal reports on liver metastasis from renal EAML highlighting the fact that the patients should be followed up with imaging so that any metastasis can be picked up in time and treated on its merit. We present a case report of a 20 year old male who developed liver metastasis needing resection, 3 years after left nephrectomy for an EAML. MRI brain was performed to rule out tuberous sclerosis. Histopathology confirmed 6.0 cm x 5.5 cm x 4.6cm metastatic EAML with clear resection margins. Microscopic evaluation revealed cellular neoplasm with proliferation of epithelioid cells having abundant granular and pigmented cytoplasm. Tumour cells were arranged in sheets and numerous dilated vessels with perivascular cuffing was present. Individual cells were polygonal with vesicular nuclei and prominent nucleoli. There were multiple areas with clear cell morphology and mitotic figures were present with strongly positive HMB45. Patient had uneventful post-operative recovery. He is recurrence free one year after his surgery on follow-up.

All patients with renal EAML should be carefully followed up with radiological imaging after resection of the primary tumour as this tumour can metastasize to other organs including liver.

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QUANTIFICATION AND COMPARISON OF IMMUNE CELLS IN THE TUMOR MICROENVIRONMENT OF TRIPLE NEGATIVE AND NON-TRIPLE NEGATIVE BREAST CANCER

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Objectives: To quantify immune cells in the tumour microenvironment of triple negative and non-triple negative breast cancer.

Materials and methods: A total of 104 breast cancer tissue were analysed in the study. Clinico pathological parameter of breast cancer patients were investigated for age, tumour size, tumour grade and lymph node status. Special stains (giemsa and toluidine blue) and immunohistochemistry technique were performed using α -ER, α -PgR, α -Her-2, α -CD3 and α -CD20 antibodies. Quantification of immune cells/mm² was performed. Data were entered and analysed using SPSS version 16. Correlation of immune cell densities with various tumour sub-types was investigated using paired t-test and Chi square test. A p-value of <0.05 was considered as significant.

Results: Our data showed out of 104 patients mean age was 47 years. 27 (25%) patients were triple negative and 77(74%) were non-triple negative. 100 (96%) were IDC, whereas 4 (0.03%) showed special subtypes. Moreover there was increased infiltration of immune cells in triple negative breast cancer. Moreover there was significantly high infiltration T-lymphocytes (p-value=0.013) and B-lymphocytes (p-value=0.01) were recorded as compare to non-triple negative breast cancers. In addition, there was no significant difference (p-value > 0.05) demonstrated in number of macrophages, mast cells and neutrophils in triple negative and non-triple negative breast cancer cases.

Conclusion: Our study delineates interesting facts and provides important insights into infiltration of immune cells in breast cancer tissues. Secondly, high population of T and B- lymphocytes in the worst prognostic group, i.e triple negative breast cancer, revealing the role of immune cell in the tumour progression. These findings demand further investigations into tumour microenvironment as immune cells could potentially be exploited as bio-molecules of diagnostics, therapeutic and prognostic significance. Leukocytes are densely infiltrating triple negative cases, another target for chemotherapy

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ROLE OF STAGING LAPAROSCOPY IN PATIENTS UNDERGOING PANCREATODUODENECTOMY

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Introduction : Staging laparoscopy helps detecting small volume liver and peritoneal metastatic disease not picked up on standard imaging in patients planned for pancreaticoduodenectomy with curative intent. Identifying this subset of patients can help prevent unnecessary laparotomy, especially with advancement in endoscopic palliation techniques. We aim to evaluate the role of staging laparoscopy in patients undergoing pancreatoduodenectomy for pancreatic/periampullary tumours at our institution.

Methods: All patients planned for pancreatoduodenectomy who underwent staging laparoscopy between September 2014 and August 2015 were included. Findings at laparoscopy and whether a change in management plan occurred was recorded.

Results: Between September 2014 and August 2015, a total of 20 patients underwent staging laparoscopy before pancreatoduodenectomy. Of these, 5 patients were found to have liver lesions and 2 patients had peritoneal nodules. Among patients with liver lesions, 1 patient had metastatic pancreatic adenocarcinoma, one had metastatic neuroendocrine tumour, while the other three had benign lesions on histopathology, both the patients with peritoneal nodules turned out to have benign lesions on histopathology of these nodules. Management plan was changed in two patients due to staging laparoscopy. One patient was planned for curative resection but liver lesions consistent with metastatic pancreatic carcinoma were found making him irresectable. The other patient was previously known to have a liver lesion the biopsy of which showed a neuroendocrine tumour thus making him potentially resectable.

Conclusion: Staging laparoscopy is a useful investigation for patients planned for pancreatoduodenectomy with curative intent as it helps to detect small volume peritoneal and liver metastatic disease. If any liver or peritoneal lesions are encountered, biopsy is useful in differentiating benign lesions from metastatic disease.

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GENERALIZED JUVENILE XANTHOGRANULOMA: AN UNCOMMON HISTIOCYTIC DISORDER**I. AHMED¹, A. MOATASIM¹, R. MUKHTAR¹, M. A. HUSSAIN²****¹PAEC GENERAL HOSPITAL, ISLAMABAD. PAKISTAN.****²AZIZ FATIMAH HOSPITAL, FAISALABAD. PAKISTAN.**

Background: Juvenile Xanthogranuloma is an uncommon benign condition variably found in patients by birth to childhood. It is a disorder of histiocytic involvement expressed usually as cutaneous lesions or may rarely have systemic manifestation. We present a case of generalized xanthogranuloma in a 7 month old baby.

Case Presentation: A 7 months old male baby presented clinically with papulonodular waxing and waning lesions, yellowish pink in colour, appearing on scalp, face, body and limbs over the past 4 months. Skin biopsy from scalp on routine histological examination revealed dense infiltration of histiocytes with lymphocytes, eosinophils and Touton's giant cells within dermis and subcutaneous tissues. Immunomarkers CD-68 was found positive while S-100 was focally positive. No reactivity was found for CD-117 and CD1a.

Conclusion: Juvenile xanthogranuloma may clinically and histologically mimic several disorders including mastocytosis and Langerhan's cell histiocytosis. The recognition and correct identification of this condition is necessary for definite management of the patient.

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CD 117 EXPRESSION IN PHYLLODES TUMOR OF BREAST AND ITS CORRELATION WITH MORPHOLOGY AND CLINICAL OUTCOME

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Introduction: Phyllodes tumours of breast are fibroepithelial neoplasms with uncertain clinical behaviour. C-kit (CD117) is a proto-oncogene tyrosine kinase receptor which has recently been described to be expressed in phyllodes tumours of the breast mainly because of its similarity with the gastrointestinal stromal tumours (GIST). Accurate assessment of the level of expression of c-kit, and its role in the pathogenesis of phyllodes tumours is an essential first step in determining the potential effectiveness of imatinib mesylate as a therapeutic agent for phyllodes tumours.

Material and Method: 78 patients with phyllodes tumours diagnosed between 2004 and 2014 were retrieved from the database of a single tertiary care center. CD117 immunohistochemical stain was performed on a representative tumour block of all the cases. Results were analyzed as negative (<25%), weak positive (>25% positivity but mild to moderate staining intensity) and strong positive (>25% strong staining) in stromal cells. CD117 results were correlated with age, tumour grade and disease recurrence.

Results: The mean age of patients was 45 years. There were 34 cases of benign phyllodes tumour, 22 of borderline tumour and 22 of malignant phyllodes tumour. CD117 was positive in 12/38 benign, 14/38 borderline and 12/38 malignant phyllodes cases. 12/19(63%) cases with disease recurrence showed CD117 positivity. Ages at diagnosis or tumour grade had no association with CD117 expression and logistic regression analyses found no association of CD117 expression (adjusted odds ratio [AOR] 3.84 & 2.40 and 95% confidence interval [CI] 0.75-19.5 & 0.65-8.77 for weak positive and strong positive, respectively) or age 50 years or older (AOR: 0.69; 95% CI 0.20-2.40) on risk of recurrence. The only factor significantly associated with the risk of recurrence was having a malignant tumour (AOR: 6.92; 95% CI: 1.71-35.3 - p value<0.01)

Conclusion: CD117 was not found to be associated with tumour grade or age and was not predictive of risk of recurrence in our sample of patients. Further works with higher number of cases are needed to better understand the prognostic value of CD117 expression in phyllodes tumours.

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MALIGNANT PERIVASCULAR EPITHELIOID CELL TUMOR (PECOMA) OF THE MEDIASTINUM IN A FEMALE PATIENT , A CASE REPORT

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Introduction: PEComa is a rare tumour and malignant PEComa rarest. It is composed of distinctive perivascular epithelioid cells with variable immunoreactivity for melanocytic and muscle markers. The histological clarification of the malignant potential of these tumours is still problematic despite the proposed risk stratification systems. Up to now, few cases of PEComa have been described and treatment modalities are still controversial, particularly in advanced conditions.

Case Presentation: We presents a case of large mediastinal mass in a 40 year old female, tumour was radiologically infiltrative with foci of calcification on CT scan, histologically nest of clear cells with intervening thick and thin walled vessels seen. Scattered large pleomorphic cells, mitosis 20/50 HPF and necrosis present. HMB45 was strongly positive with negative SMA, S100, CK ,Calretinin ,Inhibin , CD117 , Chromogranin , OCT3/4 , SALL4, EMA and WT-1 Case send to Prof. Fletcher CDM and diagnosis of Malignant PEComa confirmed.

Discussion and Conclusion: Classic benign PEComa are positive for muscle marker and melanocytic marker. Here we report and discuss the peculiar clinical, radiological and morphological presentation of malignant PEComa which is SMA negative, infiltrative on radiology with calcification and located in mediastinum. We emphasis here the challenges in ascertaining a definitive diagnosis due to limited clinical studies.

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COMPARATIVE STUDY OF HISTOPATHOLOGICAL FEATURES OF LYMPH NODE POSITIVE AND LYMPH NODE NEGATIVE BREAST CANCER

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Objectives: Lymph node metastasis in breast cancer carries a bad prognosis with lower survival rates as compared to cases without metastasis. This study is aimed to compare the histopathological features of lymph node positive breast cancer (NPBC) and lymph node negative breast cancer (NNBC).

Materials & Methods: All the breast cancer cases reported at the Department of Pathology, Fatima Memorial Hospital (Lahore) from January 2011 to August 2015 were reviewed, NPBC and NNBC cases were sorted and the data was analysed. Chi-square test was used to determine p-value and the value of $p < 0.05$ was considered to be significant.

Results: A total of 91 cases of breast cancer with available axillary lymph node status were identified out of which 62.5% were NPBC and 37.3% were NNBC. More than 60% of NPBC were in women of age 50 and above as compared to only 41% in cases of NNBC and this difference was statistically significant ($p = 0.034$). About 50% cases of NPBC belong of pT3 and pT4 stage as compared to 14.7% cases in NNBC and this difference was statistically significant ($p = 0.009$). No statistically significant difference was found in relation to cancer type, histologic grade, presence or absence of lymphovascular invasion & DCIS, molecular subtype of cancer and chemotherapy status in our study.

Conclusion: NPBC are more frequent in older age group and present at higher T stage as compared to NNBC. Our data is in accordance with the available literature.

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PERIVASCULAR EPITHELIOID CELL TUMOR (PECOMA) INITIALLY MISDIAGNOSED AS MYOEPITHELIAL CARCINOMA OF SALIVARY GLAND

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Background: Perivascular epithelioid cell tumours (PEComa) constitute a group of tumours including angiomyolipoma, clear cell sugar tumor, lymphangiomyomatosis and PEComa-NOS. These tumours are characterized by distinct morphology and immunoreactivity to melanocytic markers. The entity is rare and most cases have been described in female genital tract and visceral organs. To the best of our knowledge only one intraoral case of PEComa has been described previously in the literature. Here we present a case of PEComa arising in the upper lip that was previously misdiagnosed as myoepithelial carcinoma of salivary gland.

Case Report: A 55 year old male patient presented with an upper lip growth. Biopsy of the lesion was diagnosed from a local facility as myoepithelial carcinoma and was referred to our laboratory for second opinion. On microscopic examination the lesion was composed of sheets of clear cells arranged around vessels with distinct boundaries, clear to slightly granular eosinophilic cytoplasm and small round nuclei. There was brisk mitotic activity and necrosis. The tumour showed positivity for HMB-45 and presence of intracytoplasmic glycogen (Periodic acid Schiff stain). It was negative for pan-Keratin (AE1/AE3) and P63 ruling out myoepithelial and epithelial-myoepithelial carcinoma. Negativity for S100 and cyto-morphological features ruled out malignant melanoma and a diagnosis of PEComa was established.

Conclusion: PEComa are rare tumours with uncertain malignant potential. The characteristic morphological appearance of these tumours should prompt the pathologist to use appropriate ancillary techniques for its diagnosis and, avoid its benign and malignant morphological mimickers.

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TANCYTIC EPENDYMOMA: A RARE HISTOLOGICAL DIAGNOSIS**M. Z. MEHDI, S. MUSHTAQ, N. AKHTER , A. LOYA****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL & RESEARCH CENTRE, LAHORE**

Introduction: Tancytic ependymoma is a rarely diagnosed tumour predominantly arising in intramedullary spine. It morphologically resembles schwannoma or pilocytic astrocytoma and therefore a correct histological diagnosis can be a challenging task. We here present a case report of a patient diagnosed with tancytic ependymoma on histology.

Case Report: A 44 year male patient presented with a complaint of numbness and weakness in left upper limb for four months. MRI of the spine revealed an intramedullary lesion starting from the cervico-medullary junction extending up to C6 cervical spine. The lesion was removed via surgery and a frozen section was sent. No definite diagnosis could be made on the frozen section. On permanent histopathological examination keeping in view the radiological findings, a diagnosis of tancytic ependymoma was made. The tumour showed positive staining for GFAP, S100 and EMA immunohistochemical stains.

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CASE REPORT OF INTRACORTICAL LIPOMA OF TIBIA, IN AN ADULT**J. SIDRA, L. ASIF, M. SAJID, NAJAMUDDIN****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL AND RESEARCH CENTRE, LAHORE,
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Intracortical lipoma is a rare entity. A true incidence is not known but literature search revealed only 5 case reports. To the best of our knowledge only 1 case of intracortical lipoma in adult tibia is described in literature.

The current case report was a bone biopsy from a 70 year old female who had lower limb pain from last few months, plain x-ray revealed multiple well defined bony lytic lesion with sclerotic margin and central translucent area present on the metaphysis of tibia. We received multiple bony hard nodules with smooth surface. Histological evaluation after decalcification revealed mature adipose tissue without any evidence of hematopoiesis present with in the mature cortical bone. No atypia or necrosis was seen in adipocyte histologically. Radiology was correlated and the diagnosis of intracortical lipoma made based on classic morphological and radiological findings.

Intracortical lipoma is a benign neoplasm, accounts for <0.1% of primary bone tumour. Conservative surgery is curative and needed in symptomatic cases only. No recurrences or evidence of malignancy reported so far in any of the case.

In conclusion, current report presents second case of an adult female with an intracortical lipoma in tibia. biopsy is the gold standard. This tumour should be kept in differential diagnosis of intracortical, osteolytic lesions of long bones.

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THE IMPACT OF GENDER AND URBANIZATION ON PLASMA LIPID PROFILE AND CARDIOVASCULAR RISK IN A COHORT OF HEALTHY VOLUNTEERS

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Aim of Study: Previous studies have reported increased prevalence of coronary heart disease (CHD) in Indians or South Asian settlers in North America. This increased burden of CHD among South Asians is mainly caused by dyslipidemia. To the best of our knowledge none of the previous works has studied the patterns and prevalence of dyslipidemia and CHD risk in the Pakistani population. Present work studies the plasma lipid abnormalities and CHD risk in a cohort of healthy volunteers.

Methods: The study included 238 healthy participants. Plasma lipid profiles were determined using standard protocols. Framingham risk scores (FRS) for CHD over 10 years were accordingly calculated.

Results: We observed that 63% of our study population displayed irregularity in at least one major lipid-fraction. The most common form of isolated-dyslipidemia was low-HDL-C level (17.3%). Gender and urbanization were observed to have an impact on lipid profiles and CVD-risk. Briefly, male and urban participants displayed higher prevalence of dyslipidemia than female and rural participants respectively. In comparison to normal subjects the dyslipidemic subjects displayed significantly high values for different anthropometric variables including BMI, body fat percentage and waist circumference.

Conclusions: The present work provides an estimation of the prevalence of dyslipidemia and CHD risk in the Pakistani population. This information will be helpful for better healthcare planning and resource allocation in Pakistan.

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CORRELATION OF CELLULAR AND PLASMA CHOLESTEROL CONTENT IN ACUTE LEUKAEMIA

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Purpose/Objectives: Alterations in plasma lipid profile and in intracellular cholesterol homeostasis have been described in various malignancies; however, significance of these alterations, if any, in cancer biology is not clear. In order to understand the role of cholesterol in the pathophysiology of the acute leukaemia we aimed to investigate a possible correlation between alterations in plasma and intracellular cholesterol levels in acute leukaemia.

Materials/Methods: Lipid profiles in plasma and in peripheral blood mononuclear cells (PBMNCs) isolated from patients with acute leukaemia and healthy subjects were determined using commercially available enzymatic kits.

Results: In the present study we observed that acute leukaemia cells display decreased intracellular cholesterol content in comparison to healthy counterparts. To further comprehend the cholesterol homeostasis, we studied the interrelationship between intracellular and plasma cholesterol levels in leukaemia. We did not observed any correlation between cellular and plasma cholesterol in leukaemia patients.

Conclusion: As compared to normal lymphocytes, freshly isolated leukemic cells showed lower levels of intracellular cholesterol. These results suggest that pathways that control intracellular cholesterol levels might represent promising targets for novel anticancer strategies. The present work will contribute in better understanding of cholesterol homeostasis in acute leukaemia.

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PSEUDOMYOGENIC HEMANGIOENDOTHELIOMA OF THE UPPER LIMB IN YOUNG ADULT MALE: CASE REPORT**IFTIKHAR R, MUSHTAQ S, LOYA A, AKHTAR N.****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL AND RESEARCH CENTRE, LAHORE**

Pseudomyogenic hemangioendothelioma is a rare tumour that usually presents as multiple lesions in extremities of young adults. We present a case of pseudomyogenic hemangioendothelioma in a 26 years old male who presented with history of pain and swelling in right shoulder and upper arm for last 14 months. MRI of right sided upper limb was done which demonstrated the involvement of the metaphysis of right humerus with multiple circumscribed nodules in the deltoid and triceps muscles. Open biopsy of the lesion was done which showed clusters of spindle and epitheloid cells with abundant eosinophilic cytoplasm. The tumour cells showed very mild pleomorphism or atypia and occasional mitotic figures were seen. Immunohistochemistry showed positive staining for Cytokeratin, FLI-1, SMA and CD31. This is a newly described tumour and knowledge of its clinical presentation, morphology and immunophenotyping is required for making a correct diagnosis.

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MULTIFOCAL NODULAR ONCOCYTIC HYPERPLASIA**ZARA SAEED, SAJID MUSTAQ, NOREEN AKTHAR****SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL & RESEARCH CENTER, LAHORE,
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Background: Multifocal nodular oncocytic hyperplasia, clear cell variant is a rare benign lesion of parotid gland which mimicks oncocytic tumour. Oncocytes are observed in lesions of several organs such as the thyroid, kidney, pancreas, ovary, liver, and salivary gland [1]. In the salivary glands, oncocytes are known to arise in Warthin tumor, oncocytoma, oncocytic carcinoma, and oncocytosis. Oncocytosis is a rare non-neoplastic lesion that is classified as diffuse oncocytosis and multifocal adenomatous oncocytic hyperplasia (MAOH) [2]; it comprises approximately 0.1% of salivary gland lesions [3, 4]. Most of the previous cases are reported on FNAC but confirmed after histological examination. Common clinical presentation is mostly painless swellings in bilateral parotid regions. Histologically, the lesion consists of many variable-sized nodules, comprising oncocyte-like cells with small round nuclei and eosinophilic granular cytoplasm that was positive for mitochondrial antibodies. The diagnosis of MAOH is difficult to make by cytology alone, because the findings overlap with those of other oncocytic lesions. Therefore on histological existence of the clear cell component in the lesions led to misdiagnoses of other clear cell neoplasms. . To the best of our knowledge, few cases have been described previously. This lesion consists of oncocytic foci with predominantly clear cells. Here we report a rare case of multifocal nodular oncolytic hyperplasiain a parotid gland. A 23 years old male, presented with history of left check swelling for 2 months duration. An incisional biopsy was provided for examination. Microscopy showed a clear cell neoplasm arranged in nodules and separated by fibrous septa. The oncocytic like cells showed small round nuclei and eosinophilic cytoplasm. The differential diagnosis provided was of metastatic renal cell carcinoma, clear cell myoepithelioma and clear cell mucoepidermoid carcinoma. Immuno-history showed positivity for CK 7 and CK AE1/AE3. Further IHC PAX-8 negativity ruled out possibility for metastatic renal cell carcinoma . Myoepithelial markers P63 (focal positive in scattered cells), SMA and calponin negativity also rules out possibility for clear cell myoepithelioma and clear cell mucoepidermoid carcinoma. On the basis of morphology and immune histochemical findings, clear cell carcinoma was favoured. Due to rare incidence of this subtype of tumour case was sent abroad for expert second international opinion. Further work was performed, which showed on immohistochemistry strong positive M1A (anti-mitochondrial antibody), P63 and CK positivity favouring benign multifocal nodular oncocytic hyperplasia, clear cell variant. Regular follow up of the patient was recommended.

Conclusion: In conclusion, MNOH is a rare non-neoplastic salivary gland lesion classified as multifocal nodular hyperplasia and should be considered in the differential diagnosis of oncocytic neoplasm and clear all neoplasm of salivary gland.

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RIGHT-SIDED AND LEFT-SIDED COLON CANCERS ARE TWO DISTINCT DISEASE ENTITIES: AN ANALYSIS OF 200 CASES

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Purpose: Growing amount of data suggests that there are differences in histological and genetic characteristics along with clinical behaviour between right and left sided colon carcinomas. We have compared various parameters of both right and left sided colon carcinomas and associated the results with the prognosis in our population.

Method: e reviewed 200 cases from our institutional database; 100 cases of right-sided and 100 cases of left-sided colon cancer. The parameters including age, gender, TNM stage, histological features and clinical outcome were analysed.

Results: The patients of right-sided colon cancer were significantly older as compared to patients with left-sided cancer. They presented with a lumbar mass rather than symptoms of obstruction and perforation as seen in left-sided colon cancers, and the histology showed higher percentage of poorly differentiated tumours with advanced pT stage. Moreover, Crohn's- like reaction, intra tumoral lymphocyte response and other poor prognostic factors like lymph vascular invasion and perineural invasion were more common in right-sided cancers.

Conclusion: We found that right- and left sided cancers are different from each other in terms of clinical presentation, histology and clinical behaviour. Right-sided colon cancers are more aggressive and are associated with poor clinical outcome as compared to left sided colon cancers in our population.

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SYNTHESIS AND BIOLOGICAL EVALUATION OF ^{99m}Tc-LABELED ANTICANCER AGENTS FOR DIAGNOSTIC PURPOSES**S. HINA¹, T. H. BOKHARI², M. I. RAJOKA¹, S. ROOHI³****¹DEPARTMENT OF BIOINFORMATICS AND BIOTECHNOLOGY, GOVERNMENT COLLEGE UNIVERSITY FAISALABAD, PAKISTAN****²DEPARTMENT OF CHEMISTRY, GOVERNMENT COLLEGE UNIVERSITY FAISALABAD, PAKISTAN****³IPD, PAKISTAN INSTITUTE OF NUCLEAR SCIENCE AND TECHNOLOGY, P.O. NILORE, ISLAMABAD, PAKISTAN**

Technetium-99 m (^{99m}Tc) is the most commonly used radiotracer in nuclear medicine. At pH 6, Epr was labelled with ^{99m}Tc with a labelling yield of 99% by adding ^{99m}Tc to 200µg Epr in the presence of 35µg SnCl₂.2H₂O whereas ^{99m}Tc-vinc was labelled (99.6±0.4%) by adding ^{99m}Tc to 5µg vinc in the presence of 6µg SnCl₂.2H₂O. Radiochemical purity of both compounds was investigated by ascending paper chromatography and Instant thin layer chromatography. HPLC and electrophoresis analysis were performed for the characterizations of labelled compounds. In vitro radiochemical stability was studied in human serum at 37°C for up to 24 hour. Biological distribution was accessed in natural tumour bearing Swiss Webster mice and scintigraphic images showed that both of these compounds accumulated in the tumour with significant uptake and excellent retention. The high initial tumour uptake with worthy retention and suitable scintigraphic images emphasized their potential for tumour imaging.

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TRIGLYCERIDES METABOLISM IN LEUKAEMIA CELLS**R. RASHID, N. ZAIDI****UNIVERSITY OF THE PUNJAB, QUAID-E-AZAM CAMPUS, LAHORE, PAKISTAN**

Purpose: A major factor in leukaemia pathogenesis is unique microenvironment of leukaemia cells as they are circulating throughout peripheral blood environment. It is very important to study that whether or not the metabolism of leukaemia cells is different from other neoplastic cells – such as prostate or breast cancer cells – that are more widely studied in the metabolic context. Potential role of triglyceride accumulation and increased lipogenesis in tumour development and progression is still in progress. Nevertheless, emerging evidence suggests that lipid droplets along with its constituent proteins, triglycerides (TGs) and cholesterol esters (CEs) are required for carcinogenesis. The presented project deals with alterations in triglyceride metabolism in leukaemia.

Materials and Methods: Present study was conducted using Leukaemia patients (n=10) and healthy subjects (controls) (n=10). Plasma lipid profiles of patients and controls were determined using commercially available enzymatic kits. Intracellular triglyceride content was determined by using commercially available triglyceride estimation kit as well as through Oil Red O (ORO) staining for neutral lipids.

Results: In the present study we observed that acute leukaemia cells display increased intracellular triglyceride content in comparison to healthy counterparts. To further comprehend the triglyceride homeostasis, we studied the interrelationship between intracellular and plasma triglyceride levels in leukaemia. We did not observed any significant correlation between cellular and plasma triglycerides in leukaemia patients.

Conclusion: Attempts to exploit the lipid requirements of cancer cell have focused on disrupting de novo lipid synthesis pathways. The present study will extend these findings and evaluate in depth the relative significance of environmental versus endogenously synthesized lipids for cancer cell growth, survival and progression. This knowledge will lead us to the new therapeutic strategies for treatment of cancer.

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MIR34A AS A TARGETED THERAPEUTIC WEAPON: A ROUTE TO THE CLINICAL PROGRESS BY NANO-DELIVERY SYSTEMS FOR CANCER THERAPY**M. J. IQBAL, U. RASHEED, S. MEHMOOD, A. A. KHAN****UNIVERSITY OF GUJRAT**

MicroRNAs based therapeutics has proved to be a promising strategy that provide new hope for cancer therapy and continue to gain encouraging functional acceptance as therapeutic candidate to knockdown oncogene expression. miR34a, a key regulator of p53 tumour suppressor network, play a decisive antagonize role for cancer stemness, metastasis and chemoresistance behaviour. With the emergence of high throughput technologies in clinical oncology to conquest cancerous dilemmas, microRNA couple with nano-delivery systems proved to be an attractive platform leads to the efficient and safe targeting of the tumour. Recent studies have explored that the systematic delivery of miR34a endorses survival and inhibit cancer metastasis in mice models. Previous studies have confirmed that abnormal expression of miR34a is one of the key culprit of carcinogenesis. Successful cancer treatment is still a dilemma and demands for further novelty towards ground breaking action against cancer.

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A NOVEL DELETERIOUS C.2656G>T MSH2 GERM LINE MUTATION IN A PAKISTANI PEDIGREE WITH A PHENOTYPIC OVERLAP OF HBOC AND LS

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Objectives: Hereditary breast and ovarian cancer (HBOC) and Lynch syndrome (LS) account for the significant proportion of inherited gynecologic malignancies, caused by pathogenic germ line mutations in BRCA1 and BRCA2 genes or in mismatch repair (MMR) genes including MLH1, and MSH2, respectively. Women harbouring deleterious mutations in one of these genes have increased life-time risk of developing cancers with a considerable phenotypic overlap between HBOC and LS. Hence, timely identification of the right syndrome is crucial to optimize cancer risk management.

Materials and Methods: A 67-year-old Pakistani woman was diagnosed with triple negative breast carcinoma. She also had a history of endometrial carcinoma at age 48. She reported a strong family history of malignancies with in the spectrum of HBOC and LS and was referred to the SKMCH&RC for genetic counselling and risk assessment. Due to the presence of multiple breast and ovarian cancers in this family, the preliminary diagnosis considered was HBOC. Hence, comprehensive mutation screening of BRCA1, BRCA2, CHEK2, and RAD51C was performed using denaturing high performance liquid chromatography and DNA sequence analysis and found to be mutation negative. Since this pedigree also fulfilled the diagnostic criteria of suspected HNPCC, the patient was moreover screened for MLH1 and MSH2 genes.

Results: Pedigree analysis showed cancers of breast (n=6), endometrium (n=4), ovarian (n=3), colon (n=3), and intestine (n=2) and seven other malignancies in this family. A novel pathogenic MSH2 mutation, c.2656G>T, was found in the index patient diagnosed with breast-endometrium cancer. Her daughter and niece also found to harbor the MSH2 c.2656G>T mutation, affected with cancers of the endometrium and ovaries, respectively. However, the mutation was not identified in 100 healthy female controls, further strengthens its association with the disease.

Conclusion: This is the first report of the identification of a novel deleterious MSH2 c.2656G>T germ line mutation. It is clinically significant to identify individuals with LS so that they can benefit from life-saving cancer surveillance strategies. Our study warrants the screening of MMR genes in BRCA1/2 negative families presented with LS-associated tumours from Pakistani population.

TRANSFORMING CANCER CARE: HOME AS A BEST OPTION THAN HOSPITAL AT THE END OF LIFE CARE

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Objective: To identify the preferred place of care and its determinants at the end of life of terminally ill cancer patients.

Background: Cancer is a leading cause of mortality, worldwide. In Pakistan, approximately 80,000 deaths occurred due to different cancers annually. With this raising mortality pattern, end of life care for terminally ill cancer patients is considered vital during their disease trajectory. At this stage, patients preferred place of care is recognized significant to maintain their dignity and offered them a peaceful environment. Home is reported as the preferred place by most of patients/caregivers, however; various factors influenced the fulfilment of this desire.

Methods: Systemic review of literature from multiple research studies from 2000 to 2015 were conducted using electronic data bases such as CINAHL, Pub-Med, Science Direct, Springer-link and Google scholar.

Results: Literature findings revealed that majority of the patients and caregivers valued and prioritized home as a primary place to be taken care for themselves and their ill loved ones, respectively. When reached at end of life, the dying needs to look after and surrounded by family members, was rationalized in most of the studies. Factors like extensive family support/familiar environment, fear of hospital and neglect from staff, money saving, less emergency admission (as less hospital acquired infections), and availability of homecare physicians/staff supports patients/family desire. Whereas, poor planning and knowledge of end of life care, feeling of burden on caregiver, caregivers own health issues, lack of community health facilities and anxiety of family members were few elements responsible to create a gap between patients' desire and actual outcome.

Conclusion: Home is rated as the preferred place of care at the end of life. Patients felt comfortable and satisfied between their love ones (family members, friends, relatives). End of life care is not limited to alleviate the physical symptoms of dying but also includes the emotional and social aspect of care. Health care professionals when planning end of life care must coordinate with family members. Moreover, this planning should be a compulsory part of their initial assessment to ensure a peaceful journey of the dying patients.

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SHOULD CHEMOTHERAPY BE CONSIDERED AS A MANAGEMENT OPTION FOR ELDERLY ONCOLOGY PATIENTS?

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Introduction/Objective/Purpose: Cancer is the most leading cause of death these days around the world which has affected numerous lives. Whereas, chemotherapy is considered to be the drug of choice to treat it as it targets the rapidly dividing abnormal cells of the body. But is it really the preferable choice for the elderly patients? Whether or not chemotherapy be a part of treatment plan for elderly-oncology patients remains controversial. This paper is going to discuss about chemotherapy should not be given to elderly oncology patients as they cannot tolerate its cytotoxic effects and have poor prognosis.

Methodology: A comprehensive literature review was done including 18 studies from past 10 years, using various scientific databases.

Results/Findings: According to Hood (2003) chemotherapy has adverse effects on multiple organ systems including gastro-intestine which leads to malnutrition and nephrotoxicity which further worsens patient's condition. Since, elderly are already immune-compromised, after chemotherapy they become more prone to acquire infection. As a result, it leads to febrile neutropenia; prolong hospitalization and other life threatening situations. Studies show that incidence of neutropenic infection related to death is 5%–30% in patients greater than 70 years of age (Hood, 2003). McCall and Johnston (2007) highlights that the principal goal to maintain health of patient is to maximize benefit and minimize harm. Therefore, we should not give harm to elderly patients by such aggressive treatment therapy if that treatment regimen is not suitable for them.

Conclusion/Recommendations: Finally, chemotherapy is less effective for elderly patients since they have compromised immune system, declined organ system and various co-morbid already. In order to make elderly patients live peacefully, one should avoid this cytotoxic therapy due to its adverse effects. Therefore, elderly patients should be provided only with therapeutic and supportive care in order to keep them pain free.

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ISSUES, RESOURCES AND CAPACITY IN PALLIATIVE CARE: A LITERATURE REVIEW

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Background: Palliative care term is used, to provide “comfort care” to the patients suffering from cancer, by minimizing pain and relieving stress. Moreover, this term is often interchangeably used with “end of life care” which is an integral part of palliative care and aims to support patient and family members at the last and terminal stage of life.

Methodology: A comprehensive literature search was done through two search engines; Google Scholar and Science Direct, Search was limited to the last ten years. The purpose of this literature review is to explore the issues, resources and capacity in palliative care. Altogether, 21,061 hits were received for palliative care. However, when the search was limited to the last five years focusing on Pakistan and India 153 hits remained. 30 to 40 research and thematic papers were appraised and added in this systemic review.

Results: Literature describes palliative care as providing comfort and quality of life to patients of all ages with various diseases and life threatening conditions. The ultimate goal of palliative care is to improve quality of life` of patients and their caregivers. There are several stakeholders of palliative care ranging from care providers to receivers. Moreover, there are several models to guide the practice of palliative care. The major domains of care for palliative services include: physical symptoms, psychosocial issues, family concerns, terminal/advanced care planning. Literature also reveals several challenges in terms of provision of palliative care at the terminal stage of the disease. Moreover, literature supports that, cultural and religious beliefs and practices have significant impact on patients’ ability to cope with the terminal illness and sufferings. Patients with terminal illnesses share more comfortable and dignified experiences when provided care at home.

Conclusion: Palliative care is an integral and essential part of the healthcare delivery system. World Health Organization (WHO) significantly emphasizes upon the provision of palliative care in each health care system. In relation to end of life care and terminal illnesses; health policymakers and individual healthcare organizations need to take more initiative to expand the scope of palliative care in the health care delivery systems in Pakistan.

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TRANSFORMING CANCER CARE: IS HUMAN ATTITUDE IMPROVING PATIENTS' CANCER CARE?

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Purpose/Objectives: The collected data would be provided update information regarding human attitude towards transforming cancer care of the suffering humanity health care system (Allied Hospital, Faisalabad), health care providers and the patients who had gone through with cancer care and the possible solutions based on emotional, social or economic problems.

Material/ Methods: The informational data of 300 cancer patients specifically designed Performa (45 parameters) regarding the transforming cancer care problems and health recovery of the patients was collected from Allied Hospital, Faisalabad. This was based on health care system, health care providers including family members and the patients.

Results: The collected information indicated that above 54 years persons were more susceptible to oncological diseases as compared to children and youth. Females' age ranges between 30-35 and 50-60 were highly suffering ones and high prevalence of breast cancer (60%), but in males' leukaemia (49%) was more common. Our studies indicated that most of under investigated persons (75%) did not comments about the transforming cancer care facilities and only a few (01%) know about the problem but they commented that there was no any innovation in this regards. About 90% family members have showed positive behaviour to change the depressive mood of the patients and gave a new approach towards life. Therefore, it was because only the human attitude responsible for giving the hope to the cancer suffering humanity. In the care providing hospital system some innovation was done in the form of technical advancement in imaging and surgery. In Pakistan especially in investigated hospital there are a lot of improvements required for transferring the cancer care facilities.

Conclusion: Therefore, rising costs of cancer treatments concerns to redesign the health delivery systems in order to incorporate improvements in methodologies, such products and medical devices as to reduce the socioeconomic pressures.

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BREAST CANCER AT ALARMING RATE- HEALTH CARE PROVIDERS NEED TO BE ALARMED**K. Z. ALI****AGA KHAN UNIVERSITY SCHOOL OF NURSING AND MIDWIFERY**

Purpose: This study aims to make health care providers vigilant about the increasing rates of breast cancer in Pakistan and promote early detection and prevention of women with high risk breast cancer.

Method: A literature review was done for this study. An extensive literature search was conducted. Articles were sought published between 2006 to July 2012 from search engine “Springer Link and Science direct”. A total of 8 articles were identified. Finally, 3 articles were considered for inclusion.

Result: Breast cancer is the most common cancer in Pakistan. It kills nearly 40,000 women every year. Women in the developing countries, like Pakistan tend to die at greater rates than in more developed countries because the disease is generally detected when it is in its advance stages. The assessment made by the primary care provider regarding screening for breast cancer is generally limited to decisions about when to initiate mammography. Early diagnosis is stressed as the best protection against breast cancer morbidity. The use of breast cancer risk assessment tools (which includes exploring family history, early testing, and regular breast assessment) in the evaluation of risk and educational sessions for spreading awareness are some good ways for physicians to engage their patients in a discussion of factors that may contribute to their increased risk and it’s preventive measures.

Conclusion: Screening for breast cancer is one of the topics that primary care providers should address with their patients. Early detection of breast cancer is highly recommended. Women should be enforced for regular screening and assessments for breast cancer. Health care provider should also be reinforced to promote this practice of regular assessment and early identification of breast cancer among women. Therefore, it is important for primary care providers to be familiar with these issues