01 O

PATHOLOGIC TUMOUR RESPONSE AND LONG TERM OUTCOMES WITH NEOADJUVANT TRASTUZUMAB IN WOMEN WITH HER-2 POSITIVE BREAST CANCER

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Introduction: Human epidermal growth factor receptor-2 (HER2) regulates cell growth, survival and differentiation and is over expressed in approximately 20-30% of all breast cancers. It is associated with poor prognosis with a shorter time to relapse and lower overall survival rate. Trastuzumab is a HER2-directed humanized monoclonal antibody administered in combination with chemotherapy in HER2-positive breast cancer. Compared with chemotherapy alone, it significantly improves response rates, time to progression, and overall survival. Its use in the neoadjuvant setting significantly increases pathologic complete response (pCR) rates to as high as 65%. Evidence based literature suggests that pCR is a surrogate marker of better survival.

Objectives: To determine the incidence of pCR after treatment with neoadjuvant trastuzumab in HER2-positive breast cancer and correlate with long-term outcomes. To establish the association between pCR and long-term outcomes in terms of recurrence and overall disease free survival in HER2-positive and HER2-negative patients receiving neoadjuvant chemotherapy only.

Results: Out of 3766 total breast cancer patients, 448 cases were included in the study of which 62(13.8%) were HER2-positive who received neoadjuvant chemotherapy (NAC) along with neoadjuvant trastuzumab, 63(14%) of HER2-positive who received NAC without neoadjuvant trastuzumab and a parallel group of HER2-negative patients who received NAC was also included for comparison (n=319). Incidence of pCR was highest in patients who received targeted therapy in the neoadjuvant setting (54.8%) and showed favourable overall disease free survival. Omitting neoadjuvant targeted therapy in patients with HER2-positive disease yielded lower incidence of pCR (23.9%) with response pattern identical to HER2-negative patients who received neoadjuvant chemotherapy only (23.5%). Lowest incidence of recurrence was observed in the HER2-positive group receiving neoadjuvant trastuzumab (4.7%) as compared to HER2-positive patients receiving adjuvant trastuzumab (7.7%) and HER2-positive patients who completely declined targeted therapy (20%).

Conclusion: In HER2-positive breast cancer, trastuzumab as a neoadjuvant agent significantly increases pCR. Patients who achieve a pCR in response to neoadjuvant trastuzumab have a better long-term outcome. Absence of targeted therapy in HER2-positive tumours yields lower incidence of pCR which in turn affects disease free and overall survival. In the long-term outcome, HER2-positive patients who do not receive trastuzumab show higher incidence of recurrence.

02 O

IDENTIFYING FACTORS THAT ESCALATE THE INCIDENCE OF TRASTUZUMAB INDUCED CARDIOMYOPATHY

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Objectives: To determine the risk factors contributing towards the incidence of cardiomyopathy secondary to Trastuzumab administration.

Materials/Methods: This was a retrospective cross-sectional study conducted between 2008-2015 at the Liaquat National Hospital in Karachi, Pakistan. Data was obtained for 71 HER2 positive breast cancer patients who were given Trastuzumab as a part of their treatment regimen. A greater than 10% drop in ejection fraction (EF) was considered a sign of cardiomyopathy. Data was analysed to determine the possible risk factors leading to the development of Trastuzumab induced cardiomyopathy.

Results: The study group consists of 71 females with 47.9% within the 45-60 age group, 35.2% and 16.9% in <45 and >60 respectively. 87.3% of the sample received anthracyclines previously and 80.3% were undergoing Trastuzumab treatment and concurrent radiations. Estrogen Receptors (ER) were positive amongst 45.1% of the females as opposed to Progesterone Receptors (PR) which were positive in 25.4% of them. The baseline EF recorded was >65 in 38% and 55-65 in 62%. 12.7% of the patients showed a drop of >10, however, 22.5% showed less than 10 and 64.8% showed no drop at all. Maximum amount drop (16%) was seen in the <45 age group. 14.5% of those taking anthracyclines showed a >10 drop. 14% of those receiving concurrent radiations showed >10 drop. Amongst those showing >10 drop, 55.6% had received 75-104 mg/kg cumulative dose. In females showing a >10 drop, 11.1% were getting weekly administrations, 44.4% were receiving it 3 weekly and 44.4% had weekly followed by 3 weekly thus showing a significant association (p-value=0.03). Moreover, amongst those showing >10 drop, 55.6% received the drug for a year. Furthermore, 16.7% and 17.4% of those having hypertension and diabetes mellitus respectively, showed maximum drop.

Conclusion: There was a statistically significant association amongst the patients who received three weekly dosage of Trastuzumab. There was a greater trend of associated cardiomyopathy in patients aged less than 45, comorbids such as Diabetes Mellitus and Hypertension. Moreover, some drug factors also serve as pertinent risk factors including total cumulative dose and total duration of the treatment. Thus, it might be worthwhile to consider the usage of cardioprotective drugs when Trastuzumab treatment is initiated in patients with the aforementioned risk factors.

03 O

PREDICTORS OF PATHOLOGICAL COMPLETE RESPONSE AFTER NEOADJUVANT THERAPY IN PATIENTS UNDERGOING BREAST CONSERVATIVE THERAPY; AN EXPERIENCE FROM TERTIARY CARE HOSPITAL

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Objective: Our aim was to identify the factors responsible for pathological complete response after neoadjuvant therapy.

Material/Methods: All the patients who presented to our hospital from Jan 2006 to Dec 2013 with breast cancer and underwent breast conservative therapy (BCT) were analysed. We included all the patients who received neoadjuvant therapy followed by BCT and excluded all those in whom upfront surgery and mastectomy was performed. On follow-up examinations, occurrence of loco regional and/or distant disease was considered as recurrence. The SPSS version 20 was utilized for all statistical analyses. Kaplan-Meier curve was employed to estimate the overall and disease-free survival. Multivariate cox proportional hazard model was used for the potential confounding effect of explanatory variables on end-point variables with p-value <0.05 taken as statistical significance.

Results: In total of 859 patients, CR was found in 242 (28.2%) patients had pathological complete response (pCR) while 617 patients had partial response / stable disease. Most of the tumours were Invasive ductal carcinoma (IDCa) found in 691 (80.5%) patients followed by IDCa plus ductal carcinoma in situ (DCIS) in 139 (16.2%) patients with poorly differentiated tumours being most prevalent 56% followed by moderately differentiated in 43.5% patients. ER was positive in 65.3%, PR in 56% and H2N in 53% patients. Most of the patients (75.8%) underwent BCT + axillary lymph nodes dissection (ALND). ER and H2N negativity and high grade were mostly involved with pathological complete response. Local recurrence was found in 69 (8%) patients while distant metastasis was found in 181 (21.1%) patients. Overall 84 (9.8%) patients died during follow-up.

Conclusion: Patients with pCR have good prognosis and survival in our patient population.

04 O

SURVEY OF CURRENT PRACTICES OF INTRAVESICAL THERAPY IN NON-MUSCLE-INVASIVE BLADDER CANCER (NMIBC) AMONG UROLOGISTS IN KARACHI

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Introduction: Human epidermal growth factor receptor-2 (HER2) regulates cell growth, survival and differentiation and is over expressed in approximately 20-30% of all breast cancers. It is associated with poor prognosis with a shorter time to relapse and lower overall survival rate. Trastuzumab is a HER2-directed humanized monoclonal antibody administered in combination with chemotherapy in HER2-positive breast cancer. Compared with chemotherapy alone, it significantly improves response rates, time to progression, and overall survival. Its use in the neoadjuvant setting significantly increases pathologic complete response (pCR) rates to as high as 65%. Evidence based literature suggests that pCR is a surrogate marker of better survival.

Objectives: To determine the incidence of pCR after treatment with neoadjuvant trastuzumab in HER2-positive breast cancer and correlate with long-term outcomes. To establish the association between pCR and long-term outcomes in terms of recurrence and overall disease free survival in HER2-positive and HER2-negative patients receiving neoadjuvant chemotherapy only.

Results: Out of 3766 total breast cancer patients, 448 cases were included in the study of which 62(13.8%) were HER2-positive who received neoadjuvant chemotherapy (NAC) along with neoadjuvant trastuzumab, 63(14%) of HER2-positive who received NAC without neoadjuvant trastuzumab and a parallel group of HER2-negative patients who received NAC was also included for comparison (n=319). Incidence of pCR was highest in patients who received targeted therapy in the neoadjuvant setting (54.8%) and showed favourable overall disease free survival. Omitting neoadjuvant targeted therapy in patients with HER2-positive disease yielded lower incidence of pCR (23.9%) with response pattern identical to HER2-negative patients who received neoadjuvant chemotherapy only (23.5%). Lowest incidence of recurrence was observed in the HER2-positive group receiving neoadjuvant trastuzumab (4.7%) as compared to HER2-positive patients receiving adjuvant trastuzumab (7.7%) and HER2-positive patients who completely declined targeted therapy (20%).

Conclusion: In HER2-positive breast cancer, trastuzumab as a neoadjuvant agent significantly increases pCR. Patients who achieve a pCR in response to neoadjuvant trastuzumab have a better long-term outcome. Absence of targeted therapy in HER2-positive tumours yields lower incidence of pCR which in turn affects disease free and overall survival. In the long-term outcome, HER2-positive patients who do not receive trastuzumab show higher incidence of recurrence.

05 O

ONCOLOGICAL OUTCOMES OF COLON CARCINOMA: 10 YEAR EXPERIENCE FROM A TERTIARY CARE CENTER

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Objective: Colorectal cancer is ranked second in cancer related deaths in United States and Europe, and is the third most common epithelial malignant tumour of human body. Total mesorectal excision (TME) has been institutionalized worldwide and was first applied by Heald. We conducted this study to see the oncological outcomes of carcinoma colon managed at our hospital.

Material/Methods: Medical records of all the patients who presented to Shaukat Khanum Hospital from Jan 2006 to Dec 2015 with colon tumour and who underwent surgery were analysed of any age, either gender were included in this study. Their demographic, clinicopathological features, operative information and outcomes were recorded on a pre-designed proforma and were analysed. Primary end point was 5 year overall survival (OS).

Results: In total of 244 patients, male to female ratio was 2.25:1, most of the patients were above the age of 45 years (66.4%). The most common presenting symptom was per rectal bleeding (27.5%) followed by altered bowel habits (23.8%) and pain (22.5%). Right (43.8%) and left side (44.3%) of the colon were equally involved. Almost half of them were performed laparoscopically (44.2%) and half open (48%) and conversion rate to open surgery was only 7.8%. Right hemi and extended right hemi was the most commonly performed procedure (54.5%) followed by sigmoid colectomy (21.3%) and left hemicolectomy (9%). Adjuvant therapy was offered to 128 patients (52.5%), as majority of the patients were T3 (63.1%) followed by T4 (18.9%) and near to half were node positive (41%) with an overall 5 year survival rate of more than 60%.

Conclusion: Advance disease and late presentation is very common in this part of the world with lack of any screening programme, the overall survival can be improved by implementing a proper screening programme on national level.

Key Words: Colon tumours, oncological outcomes, 5 years survival.

06 O

PELVIS EWING SARCOMA: A TEN-YEAR MULTICENTRE EVALUATION OF CLINCAL PREDICTORS AND LONG TERM SURVIVAL IN A LOW MIDDLE INCOME COUNTRY

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Objective: The purpose of this study was to evaluate treatment outcomes in pelvis Ewing sarcoma (ES) patients at two major paediatric oncology centres in Pakistan.

Material/Methods: All pelvis Ewing sarcoma patients diagnosed from 2005 to 2015 seen at Aga Khan University Hospital and Indus Children Cancer Hospital, Karachi were identified. Patient characteristics, treatment administered, outcomes and factors influential to survival and relapse were analysed. **Results:** Twenty-six patients met the inclusion criteria. Seven (26.9%) left before treatment started. Nineteen (73.1%) were incorporated in the study. The median age at diagnosis was 13.0 (5-18 years). Six (31.5%) patients had metastatic disease at presentation. Thirteen (68.4%) had no sacral involvement. Tumour size data was available in 15 patients, with ≥ 8 cm of bulk in 12 patients (80 %). All patients received chemotherapy; EURO-E.W.I.N.G.99 was utilized in 9 patients (47.3%), 3(15.7%) received AEWS0031 protocol while 7 (36.8%) were given different regimens. Two (10.3%) patients were treated with radiation-only, seven (36.8%) with surgery only, and four (21%) with surgery and radiation. Improved 3-years overall survival (OS) in localized disease was associated with surgery (n=7, 100%, P=0.10), $\geq 64\%$ reduction in tumour volume on imaging after chemotherapy (77%, P=0.009) and the absence of sacral involvement (66.0%, P=0.56). Tumour volume ≥ 100 ml showed inferior (55%, P=0.22) 3-year event free survival (EFS). Fourteen events occurred; 4 patients experienced relapse (21%), 3 (10.5%) had progressive disease, 1(5.2%) died post treatment due to sepsis, 1 (5.2%) died during treatment and 5 (10.5 %) were treatment abandonment. The 5-year (OS) and (EFS) of the whole group was 48.8%(95% CI: 19.1%-73.2%) and 51.8% (95% CI: 9.1%-83.5%). The 5-year (OS) and (EFS) for localized disease was 71.3% (95%CI: 34.4%-89.83%) and 54.55% (95%CI: 8.61%-86.09%). The 5-year EFS with treatment abandonment, relapse and death was 35.9 % (95 % CI: 7.6%-66.5%).

Conclusion: Our study demonstrates excellent survival for localized disease in low-and middle-income settings, comparable to international data. Although some of our correlations did not reach statistical significance due to small sample size, we observed that the site of involvement, radiographic response to treatment and local control modalities correlated well with the outcomes.

07 O

ROLE OF HYPOFRACTIONATED RADIOTHERAPY IN LOCALLY ADVANCED HEAD AND NECK CANCERS.

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Context: Cancers of the Head and neck approximately constitute 10% of all cancers worldwide. In our centre at the Ziauddin University Hospital over 25% of all cancer patients have squamous cell carcinoma of head and neck region, while over 25-30 % of these patients are only palliatively treated and we use different hypopofractionated schemes to palliate their symptoms.

Purpose/Objectives: To evaluate different Hypofractionated radiotherapy schemes in inoperable head and neck cancer patients in terms of disease related symptoms and acute toxicities.

Setting and Design: A Retrospective study. Cases of the last 1 year reviewed.

Material/Methods: A total of 60 patients included in this study with the diagnosis of locally advanced inoperable head and neck cancers, out of which 25 patients were treated with Quad Shot protocol. In this protocol each patient received 1400 cGy in 4 fractions over 2 days with 350 cGy twice a day. Each cycle was repeated after 14 days, minimum 2 and maximum 3 such cycles were given to patients depends upon disease response and treatment related toxicities. 25 patients received 3000 cGy in 10 fractions over 2 weeks' time, the patients who good response in terms of symptom relief and had bearable treatment related toxicities were further planned for the off cord boost of 1500. 10 patients received 3500 cGy 1n 10 fractions over 2 weeks.

Results: This review showed the significant response of all Hypofractionated Radiotherapy schemes in locally advanced head and neck cancer patients. However it was noted that Quad Shot regime was slightly better in comparison with the other two in terms of symptom control with less toxicity profile.

Discussion: This study shows the feasibility and benefits of different Hypofractionated palliative radiotherapy schemes for inoperable locally advanced head and neck cancer in terms of patient compliance, reduced side-effect, and effective palliation. There was significant improvement in symptoms of pain in and distress. Our results are comparable to some prior studies also.

08 O

PROGNOSTIC FACTORS AND THEIR INFLUENCE ON THERAPEUTIC OUTCOMES IN CHILDREN AND ADOLESCENTS WITH PARAMENINGEAL RHABDOMYOSARCOMA; A MULTICENTRE STUDY

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Objective: The purpose of this study was to evaluate prognostic factors and treatment outcomes in paediatric parameningeal rhabdomyosarcoma (PM-RMS) at two major paediatric oncology centres in Pakistan.

Material/Methods: All PM-RMS age 1-16 years diagnosed from 2005 to 2015 at Aga Khan University Hospital and Indus Children Cancer Hospital were identified. Factors relevant to survival and relapse were analysed.

Results: Forty-six patients were identified. Thirteen (28%) left before treatment started. Data from thirty-three (72%) patients (median age 6.0 years) were analysed. Twenty (61%) were male. Infratemporal region (n=16, 49%) was the commonest site involved. Majority belonged to group III (n=32, 97%) whereas 17 (52%) were stage III, 15 (46%) were stage II and 1 (3%) was stage IV. Twenty-nine (88%) were embryonal, 3 (9%) were alveolar histology and one was unknown. Majority (n=25, 76%) were given vincristine, actinomycin and cyclophosphamide while three (9%) received high-risk protocol. Chemotherapy toxicity included fever and neutropenia (n=25, 76 %), neuropathy (n=4, 12%) and diarrhea (n=2, 6%). Twenty-three (69.6%) received radiation whereas two (6%) patients each were treated with surgery and surgery + radiation. Improved 3-year overall survival (OS) was associated with stage II disease (51%, P=0.05) and dose of radiation 50Gy (72%, P=0.083) while complete response to treatment (74%, P=0.87), timing of radiation (69%, P=0.77) and nutritional status with $\geq$ 2SD of the WHO weight for height growth standards median (83%, P=0.21) showed superior (OS) but were not statistically significant. Age $\geq$10 years (42%, P=0.07), stage III disease (36 %, P= 0.07) and regional nodal involvement (30%, P=0.12) showed inferior 3-year event free survival (EFS). Twenty events occurred; 5 patients relapsed (15%), 5 (15%) had progressive disease, 3 (9%) died during treatment, 1 (3%) died post treatment and 6 (18 %) were treatment abandonments. Three-year (OS) and (EFS) were 42.2% (95% CI:15.6%-67%) and 50% (95% CI: 14.2%-78.2%) respectively.

Conclusion: Almost fifty-percent of our patients could not start or continue therapy because of insufficient resources and lack of early access to medical care. Nevertheless, early presentation with less advanced local disease, adequate nutritional status at baseline and appropriate doses of radiation correlated well with outcomes.

09 O

RETROSPECTIVE ANALYSIS OF CLINICAL FEATURES AND TREATMENT OUTCOMES OF CHILDREN WITH ANAPLASTIC LARGE CELL LYMPHOMA: A SINGLE INSTITUTIONAL EXPERIENCE

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Objective: Anaplastic large cell lymphoma (ALCL) is a rare disease in children accounting for 10% to 15% of all childhood non-Hodgkin Lymphomas. In 70-80% of paediatric cases it presents as advanced disease. The most common clinical features in the paediatric population include a generalized adenopathy with the frequent association of B symptoms and involvement of extranodal sites such as the skin, liver, lung, soft tissues, and bone. There is limited data on ALCL due to rarity of the disease and treatment options. The aim of this retrospective analysis was see our institutional experience in patients with ALCL and their outcomes over the span of 10 years.

Methods: Medical records at a regional cancer center Pediatrics patients with anaplastic large cell lymphoma from January 2005 till December 2015 was retrospectively collected after IRB approval. Data was reviewed for patients confirmed on histopathology and age less than 20 years of age at the time of diagnosis.

Results: A total of 40 children (64% Male, 31% Female) with ALCL (CD30 +) were reviewed retrospectively. B symptoms were present in 76%, Nodal involvement in 93% and Mediastinum involvement was present in 19% of patients. Extra nodal disease was not common, visceral (Lung, Liver, Spleen) and cutaneous involvement was seen in 38% and 15% of patients respectively. ALK was positive in 48% and Bone marrow positive in 24% of patients. None of the patients had CNS involvement. Stage III was seen in 69%. All patients were treated on ALCL 99 protocol. The 5 years EFS was 74% and OS was 54%. There were 7 relapses, 2 had progressive disease, 16 patients died and 3 refused treatment.

Conclusion: Our analysis shows poor outcomes and most common cause of mortality was due to hematological toxicity and febrile neutropenia associated with it. We need to improve supportive care.

Keywords: Clinical features, outcomes, ALCL

10 O

RISK STRATIFICATION OF MEDULLOBLASTOMA ON THE BASIS OF MOLECULAR SUBGROUPING: AN EXPERIENCE FROM A SINGLE TERTIARY HEALTH CARE CENTRE OF A DEVELOPING COUNTRY

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Objective: Medulloblastoma is the most common malignant child hood brain tumour. It has been risk stratified on the basis of clinical (age, metastasis and extent of resection. However, recently Medulloblastoma has been sub grouped by using a variety of different genomic approaches into 4 groups (WNT, SHH, Group 3 and group 4) after efforts from multiple independent groups. This has important therapeutic and prognostic implications. This is the only data from Pakistan on the clinical profile and molecular subgrouping in children with Medulloblastoma.

Methods/Materials: Children (0 – 16 years) with Medulloblastoma from April 2014 till December 2016 at Aga Khan University Hospital were reviewed retrospectively for clinical data, molecular sub grouping, risk stratification, and outcome. Biopsy samples of patients diagnosed to have Medulloblastoma were sent for molecular sub grouping to Hospital for Sick Kids, Toronto as a part of twinning program with Aga Khan University Hospital.

Results: Nineteen children were included in the study. Male to female ratio was 5.3:1. Most of the patients were > 10 years age group (57.8%). Common presenting complains were vomiting 14 (73.6%), headache 11 (57.8%) & ataxia 10 (52.6%). Four (21 %) patients presented with metastasis. Molecular subgrouping was done for 14 patients and showed Group 4 in 5, SHH in 4, WNT in1 patient. There were no patients in Group 3 and the subgrouping was inconclusive in 4 patients. Risk stratification based showed that there was only one low risk patient. There were 6 patients in standard risk, 11 patients in high risk and 1 patient in very high risk group. There were 14 patients treated with chemo radiation followed by maintenance chemotherapy. Eleven patients completed therapy of which 1 patient had progressive disease on treatment, 3 patients had relapse and expired. Eight patients are on regular follow up. One patient was lost to follow up. One patient is still on chemotherapy. Four patients continued their treatment outside our hospital.

Conclusion: Molecular sub grouping has a huge impact on the management and prognosis. Twinning programs can significantly contribute towards improvement in proper diagnosis and management of paediatric brain tumours.

11 O

EVALUATION OF DOSE CONFORMITY AND COVERAGE OF TARGET VOLUME FOR INTENSITY MODULATED RADIOTHERAPY OF PELVIC CANCER TREATMENT.

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Objective: Better conformity may help in delivering minimum dose to Organs at Risk (OARs) and maximum dose to Planning Target Volume (PTV). As per the requirements of modern radiotherapy 95% isodose should cover the Planning Target Volume PTV, so conformity indices are used for evaluating quality of conformation of treatment plans. This study aimed to investigate degree of conformity for pelvic patients by using Intensity Modulated Radiotherapy Technique (IMRT). Three formulas of conformity indices described in literature were analysed in this study.

Material and Method: This study was performed to evaluate degree of conformity of eighteen patients treated with radiotherapy treatment plan using Cumulative Dose Volume Histogram. Effectiveness of different conformity indices were explored for IMRT plans using 15 MV photon beam. Doses delivered to Organ at Risk were also studied.

Result: Conformity Index (CI) suggested by International Commission of Radiation Units and Measurement (ICRU) ,Radiation Conformity index (RCI) and Conformity index CI PITV had mean± standard deviation values of 1.02 ± 0.018, 0.98 ± 0.017 and, 1.63 ± 0.333 respectively. Dose distribution for all patients was highly conformal and clinically acceptable. Values of CI PITV exceeded acceptable value for 27% patients with minor deviation. No statistically significant differences were observed for three conformity indices reported. Target volume lies between 95% and 107% of prescribed dose which shows ideal target coverage.

Conclusion: Conformity Index parameter is advantageous since it is easy to interpret and helped to determine quality of treatment plan. This study clearly demonstrated that favourable dose distribution in PTV and OARs is achieved using IMRT technique and hence the risk of damage to normal tissues is reduced.

12 O

DYNAMIC GLUCOSE ENHANCED MAGNETIC RESONANCE IMAGING

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Objective: D-glucose has potential as a biodegradable contrast agent that can be detected using the chemical exchange saturation transfer (CEST) technique (glucoCEST) or relaxation-based (T1rho or T2) approaches. Here we provide a demonstration of the feasibility of DGE-MRI in four normal volunteers and in three patients with glioma.

Material/Method: Informed consent was obtained prior to the study from all participants. For this study, limited to age group 18 – 75 years, all participants were required to fast for at least 8 hours and have a baseline fasting glucose level within the normal range. Furthermore, exclusion criteria for recruitment: persons with a) diabetes mellitus; b) sickle cell disease; c) blood iron; d) Hypertension requiring medication; e) Multiple myeloma; f) Solid organ transplant; h) History of severe hepatic disease/liver transplant/pending liver transplant. For healthy volunteers, additional exclusion criteria were seizure disorder and taking prescription medicine.

Results: Dynamic glucose-enhanced (DGE) image data from four normal volunteers and three glioma patients showed strong signal enhancement in blood vessels, while the enhancement varied spatially over the tumour. Areas of enhancement differed spatially between DGE and conventional Gd-enhanced imaging, suggesting complementary image information content for these two types of agents. In addition, different tumour areas enhanced with D-glucose at different times post-infusion, suggesting a sensitivity to perfusion-related properties such as substrate delivery and blood-brain barrier (BBB) permeability.

Conclusion: Using DGE-MRI, findings provide preliminary support for potential use of D-glucose as an MRI contrast agent and the use of DGE for studying glucose uptake properties of tumours and the brain.

13 O

COELIAC PLEXUS NEUROLYSIS FOR PANCREATIC CANCER PATIENTS; RETROSPECTIVE ANALYSIS OF SKMCH & RC EXPERIENCE

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Background: Pancreatic cancer is the second most common abdominal cancer. Majority of the patients present with an excruciating pain at the time of diagnosis. Coeliac plexus neurolysis (CPN) is a technique that can potentially improve pain control in pancreatic cancer while preventing further escalation of analgesic consumption. CPN is performed by injecting phenol / alcohol into the coeliac plexus neural network of ganglia. There is a high proportion of pain relief with CPN in up to 80% of the patients.

objective: The aim of our study is to determine the pain relief after CPN, reduction in analgesics and evaluation of overall patient satisfaction.

Study Design: Retrospective, cohort study

Materials & Methods: The data was collected from December 2016 to August 2017. A total of 25 patients of either gender (male and female) were included in this study. Procedure was carried out via transcrural approach using 6% phenol. Follow up of patients was done after 1 and 4 weeks of the procedure. The patients were evaluated for pain scores on numeric rating scale (NRS), reduction in analgesia and patient satisfaction regarding the procedure and pain relief. The analysis was done using mean values.

Results: Total numbers of patients were 35.The mean age was 53.12 ± 12.41 (SD) years with a male to female percentage of 24% and 76%. Follow up was done after 1 week and 4 weeks. Patients reported decrease in mean pain score (8.5 to 4.8 in Males and 8.4 to 2.5 in Females), reduction in analgesics (83% among Males and 84% among Females) and over all patients satisfaction was (50% Males and 84% Females)

Conclusion: It has been observed from the results that CPN works effectively for pancreatic cancer patients. CPN has a strong recommendation in patients with pancreatic cancer pain as it improves the pain scores, significant reduction in analgesics and overall good patient satisfaction.

Key Words: Coeliac plexus neurolysis; Pain scores; Patient satisfaction

14 O

INTEROBSERVER VARIABILITY FOR PREDICTION OF DIFFICULT INTUBATION BY THREE TESTS AMONGST RESIDENTS OF VARIABLE EXPERIENCE

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Objective: To determine the inter-observer variability for the prediction of difficult intubation.

Background: The incidence of difficult intubation ranges between 1.5% - 13%. Failed intubation leads to hypoxia and brain death. Pre-operative evaluation of airway can be accomplished by non-invasive bedside clinical tests. Combining tests for evaluation increases the accuracy of assessment. One model known as SARI (Simplified Airway Risk Index) has been proven valid. We determined the inter-observer agreement of the specific test combinations included in SARI.

Materials and Methods: 12 observers assessed 80 patients undergoing elective surgery with general anaesthesia and endotracheal intubation. Investigators were divided into 2 groups I-e, Group A (1st and 2nd year residents) and Group B (3rd and 4th Year residents). The variables evaluated were age, gender and BMI. Three tests were carried out including Mouth opening, Mallampati scoring and Mandibular protrusion. The variability and agreement between pair of assessors was evaluated and analysed using kappa test. The limits were evaluated using 95% confidence interval. The agreement between two quantitative outcomes was described using the following interpretation of the coefficients as poor (<0.20) , fair (0.21-0.40), satisfactory (0.41-0.60), good (0.61-0.80) and excellent (0.81-1.00)

Results: Incidence of difficult intubation is 5%. Two tests Mouth opening and mandibular protrusion had excellent interobserver agreement (κ =0.92) while mallampati score had good agreement (κ =0.75)

Conclusion: We demonstrated good inter rated agreement using three tests from SARI and recommend these tests for pre-operative airway evaluation for prediction of difficult intubation

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AN AUDIT OF ANESTHETIC RECORD KEEPING

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Introduction: The record keeping that is potentially reproducible is an essential role of the anaesthetist, and provides the details of pre-operative assessment, intra-operative management and physiological variables, along with post-operative recovery and discharge. The record should provide sufficient data to allow comprehension of a sequence of events, the pertinent factors for decisions made, and instructions for a patient's ongoing management. This data can be used for inter-professional communications , future plans for anaesthesia and may have medico legal implications.

Materials & Methods: We analysed the anesthetic chart of the patients that underwent anaesthesia in department of anaesthesiology at Shaukat khanam hospital Lahore , from 1st july 2017 to 31st july 2017. Eleven parameters were recorded as per " Good practice " (2006) jointly published by the Royal college of Anesthetist and Associations for Anesthetists of Great Britain and Ireland , which includes Patient identification, Preoperative assessment, Pre induction vital signs, Anesthetic equipment and machine check, Anesthesia technique, Antibiotic time, Patient monitoring used, Incision time, Frequency of physiological measurements (5 minutes interval), Fluid balance and Postoperative instructions will be noted. We tried to find out common reasons for failure to meet the standards. All the data was recorded on designed Proforma.

Results: We observed that Patient identification, ASA status, Weight, History of previous GA, Allergy and Addiction history, Airway assessment, Chest auscultation, Documented complete blood count, Anesthesia plan, Drugs concentration and Physiological measurements documentation was 100%. Documentation of **Monitoring** was 99%, **Urea & Electrolytes** 92%, **Fluid balance** 89%. **ECG** 88%, **Anesthesia equipment and machine checked** 76%.**Temperature** reading was 68.5%, **Oxygen** 59.5% **Patient destination** recording was 54%, **Analgesia** 52.8%, **Fluids** 32% , **Incision time** recording was 13.5% and **Pre induction vitals** was 12.16%.

Conclusion: We concluded from this audit that most of the documentation was complete , Out of **36 parameters 22** were 100%, However **14** parameters were not recorded accurately we need to develop process to improve the standards of documentation in our practice.

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CORRELATION OF TUNNELLED CENTRAL VENOUS CATHETER INFECTION RATE AND ABSOLUTE NEUTROPHIL COUNT AT A SPECIALIZED CANCER CENTRE: A SINGLE INSTITUTE RETROSPECTIVE AUDIT

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Background: The first long term central venous catheter was used in 1970 by Broviac. The tunneled Central Venous Catheters have become an important tool in the management of cancer patients. Patients receiving cancer treatment undergo regular infusions of irritant chemotherapy, need frequent transfusions, require frequent blood sampling for laboratory tests and stem cells for Bone marrow transplants. However tunneled central venous catheters carry the risk of both immediate and long term complications which ranging from mild complications e.g pain, bleeding whereas infection remains the major one with reported rates of upto 60%.

Material/Methods: We analysed the medical records of all patients that underwent Broviac Line Insertion in our department from 1st January 2011 to 30th September 2016.The primary malignancy , type of catheter, absolute neutrophil count at time of insertion and reason for removal was noted. Primary outcome measure of the study was correlation of tunneled central venous catheter infection and low absolute neutrophil count at the time of insertion.

Results: Total numbers of 282 tunneled central venous catheters were placed in the period of audit. Out of 282 central venous catheters 61.7% broviac lines were placed for chemotherapy and 38.3% for apheresis. Among total patients 53.2% had low ANC. Out of total number of patients 46% patients had unexplained fever out of which 28.3% patients were neutropenic while 17.7% patients had unexplained fever who were non-neutropenic. 43.7% patients had infection in line, 34.7% were neutropenic patients, while 9% had infection in line who were non-neutropenic. 20.4% patients had blood stream infection ,14.4% patients were neutropenic whereas 6.02% non-neutropenic patients had blood stream.

Conclusion: The complication rate and number of catheter days in our setup is comparable to international standards. We conclude that the incidence of unexplained fever, infection in line and blood stream infection was higher in neutropenic patients undergoing tunneled central venous catheter insertion. But further data is needed to support these results.

Key words: Central venous catheter , Infection , Neutropenia

17 O

PAIN INTERVENTIONS FOR CANCER AND NON-CANCER PATIENTS; RETROSPECTIVE ANALYSIS OF SKMCH & RC EXPERIENCE

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Background: Chronic pain is a common condition for which patients seek treatment from the physicians. It remains a major concern for patients suffering from cancer and chronic non-cancer ailments. Opioid drugs remain the gold standard for treatment of chronic pains but their prolonged use can cause a lot of side effects and leading to decreased patient satisfaction. The purpose of pain intervention is to inhibit impulse transmission in a nerve terminal, thus terminating the pain signals perceived by the cortex.

Objective: The aim of our study is to determine the pain relief, reduction in use of analgesics and overall patient satisfaction after various nerve blocks done in cancer as well as non-cancer patients.

Materials/Methods: It was a retrospective observational study. The data of all the pain procedures done in our set up was collected from December 2016 to August 2017. The data was recorded on MS excel sheet. A total of 86 patients of either gender (male and female) were included in this study. Out of these 86 patients, 26 were non-cancer patients and 60 were cancer patients. Follow up of patients was done after 1 and 4 weeks of the procedure. The patients were evaluated for pain scores on the basis of numeric rating scale (NRS), reduction in analgesia and patient satisfaction regarding the procedure and pain relief. The analysis was done using mean values.

Results: The results will be divided into two groups: outcome of the cancer patients and the non-cancer patients. Among the cancer patients mean age was 47.72±15.62 with 63.33% females and 36.67% males, the average pain score before intervention of all these patients was 9.03±0.74 and after intervention it was found out to be 2.52±2.01.85% of the patients reported a reduction in analgesia while 15% of the patients kept on using the same analgesics in the same doses. The overall patient satisfaction was seen in 83.33%. Similar parameters were observed for the non-cancer patients. The mean age was 50.12±14.58 with 30.77% females and 69.23% males. The average pain score before intervention of all these patients was 9±0.8 and after intervention it was found out to be 1.62±1.13. In contrast to the cancer patients the reduction in analgesia was reported in 100% of the patients. 88.46% non-cancer patients were satisfied.

Conclusion: It is seen from the results that the interventions play a pivotal role in the improvement of chronic pains irrespective of their origin. There was a drastic decrease in the pain scores of all the patients after the intervention. The reduction in the use of analgesics was also commendable in both the groups. However non-cancer patients found to be more satisfied.

Key Words: Nerve blocks; Chronic Pain; Pain scores; Patient satisfaction

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RISK FACTORS FOR CONVERSION FROM LAPAROSCOPIC TO OPEN RESECTION FOR RECTAL CANCER

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Objective: To evaluate the risk factors for conversion from laparoscopic to open resections in a tertiary care cancer hospital.

Methods: All patients with a diagnosis of rectal cancer from Jun 2006 to Jun 2015 were studied. Patient demographics were recorded. All patients who underwent lalaprscopic resections were studied. Reasons for conversion were noted for each patient.

Results: A total of 440 surgeries were performed for rectal cancer. 262 were laparoscopic and 178 were open. There were 27 conversions (10%). Male gender was the most common risk factor (OR 2.1). Advanced tumour was responsible for conversion in 10 patients (OR 1.7). Obesity was a risk factor in 16 patients (OR1.6). Lower tumour were more likely to be converted. APR had more conversion (OR 1.4). Converted patients more complications than laparosopic group (laparoscopic: 5.7 %; vs. converted: 8.2 % vs. open: 8.4 %) and a longer mean hospital stay (laparoscopic: 7.2 days; vs. converted: 9.1 days; vs. open: 8.2 days).

Conclusion: Male gender, obesity, advanced tumours and abdominoperineal resections are a strong risk factor for conversion from lap to open resection in rectal cancer

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MEASUREMENT OF PORTAL VENOUS PRESSURE PRIOR TO MAJOR LIVER RESECTIONS: HOSPITAL BASED EXPERIENCE

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Background: Preoperative measurement of portal venous pressure (PVP) is performed routinely in patients with Hepatocellular carcinoma, at Shaukat Khanum Memorial Cancer Hospital (SKMCH), to assess for portal Hypertension (PHT). Our study aimed to correlate preoperative PVP values with post-operative liver dysfunction and post-operative 30 day mortality.

Material/Methods: All Child's A patients who underwent liver resection for Hepatocellular carcinoma at SKMCH between 1'st January 2012 to date and had portal venous pressures measured prior to intervention, were included. PHT was assessed by direct trans-jugular PVP measurement (it is hepatic venous wedge pressure, classified in to mild 5-10 mmHg, moderate 10-20 mmHg and severe >20 mmHg). Data was retrospectively reviewed via patients' charts and medical records. Postoperative bilirubin, INR, albumin and ascites were recorded to asses liver decompensation.

Results: A total of 21 patients were enrolled in the study out of which n=15 patients underwent surgery. All patients undergoing surgical intervention had normal PVP values (mean = 4.86, range 0 – 9). PVP was raised (>10 mmHg) among two patients who underwent RFA/TACE. None of the patient developed postoperative liver decompensation and no 30-day mortality was recorded. Overall only 2 (9.5%) patients had raised PVP in this study.

Conclusion: PVP measurement in Child's A patients was not predictive of post-operative 30 day mortality or liver dysfunction, in patients undergoing liver resection. This study brings to question the routine measurement of PVP, an invasive investigation, as an assessment tool for all patients nominated for surgery.

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CONTRAST ENHANCED MRI IN THE PREOPERATIVE EVALUATION OF ENDOMETRIAL CARCINOMA

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Objectives: To determine the association of pre-operative contrast enhanced MRI findings with post-operative histopathological staging parameters in endometrial carcinoma. To determine the relationship of post-operative histopathological staging parameters to lymph node metastasis.

Material/Methods: The study was conducted after the institutional Ethical Review Committee's approval and it included 144 patients with biopsy proven endometrial carcinoma. All patients had contrast enhanced MRI (CE MRI) of the pelvis done within one month prior to surgery. Myometrial invasion (MI), Cervical invasion (CI) and Lymph node metastasis (LNM) was viewed on T2W images and contrast enhanced T1W images. Patients underwent staging laparotomy followed by peritoneal cytology, total abdominal hysterectomy, bilateral salpingo-ohorectomy and pelvic lymphadenectomy. Histopathological findings were used as the definitive diagnosis. The co relation co efficient was calculated to determine the association of preoperative contrast enhanced MRI findings with postoperative histopathological staging parameters. The logistic model was employed to evaluate the relationship these factors had to the frequency of positive pelvic nodes.

Results: For the identification of myometrial invasion, cervical invasion and lymph node metastasis the sensitivity and specificity were 85.71% and 89.47%, 90.9% and 100%, 85.7% and 79.6% respectively. Correlation of histopathological pelvic lymph node metastasis with ≥ 50% histopathological myometrial invasion, revealed a sensitivity of 100% and a specificity of 97.9%, however similar correlation was poor with cervical invasion. In the univariate model with lymph node involvement as an outcome of interest, stage of the disease, tumour grade and type, positive peritoneal cytology, histopathological myometrial and cervical stromal invasion were all significantly associated with lymph node involvement.

Conclusion: Cases with < 50% myometrial invasion and without cervical invasion on contrast enhanced MRI can be considered as low risk for lymph node metastasis and hence surgical treatment can be tailored accordingly.

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RESAMPLING STRATEGIES IN ANATOMICALLY-GUIDED PET IMAGE RECONSTRUCTION

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Introduction: PET-CT or PET-MR allows simultaneous acquisition of functional and structural images which facilitates spatial localization of the biochemical and physiological processes to physical organs or regions of interests (ROIs). However, PET image resolution is severely hampered by physical degradation factors that compromise quantitative accuracy of functional parameters. The resolution and signal-to-noise ratio (SNR) of reconstructed PET images could be boosted by utilizing complementary/correlated information from co-registered, high-resolution structural images to guide PET image reconstruction. The high-resolution structural image is resampled to PET resolution to obtain voxel-wise correspondences. This work explores the impact of resampling strategies on anatomically-guided PET image reconstruction.

Material/Methods: A T1-weighted MR image was generated from a normal anatomical model comprising of 8 tissue classes: WM, GM, CSF, Fat, Muscle, Skin, Glial, and Connective tissues. The image dimensions were 181 x 217 x 181 cubic voxels with an isotropic dimension of 1 mm. A hyperactive spherical lesion of diameter 20 mm was created by increasing the WM intensity by 45%. A PET uptake image was generated as follows: (1) The ROIs for the 9 tissue classes (including the WM lesion) were downsampled to an isotropic resolution of 2 mm. (2) The dowsampled masks were scaled by clinically realistic activity values (in Bq/mL) – 12500 in GM, 3125 in WM, 0 in CSF and bone, and 1000 in all other tissues. The WM lesion in PET had 45% enhanced uptake. (3) Finally, the scaled low-resolution masks were added to generate a brain PET image. An attenuation image for 511 keV photons was also generated by assigning a value of 0 cm-1 in air, 0.146 cm-1 in bone, and 0.096 cm-1 in tissues. The obtained MR, PET, and attenuation images were used to simulate reconstructed PET images (including partial volume effects, randoms, and scatter) using in-house software. PET images were reconstructed using MLEM and Kernel-EM which utilizes resampled MRI to guide image reconstruction. High resolution MRI were resampled to PET resolution using linear, cubic, and edge-preserving filter guided interpolation schemes.

Results: Figure 1 shows transaxial, coronal, and sagittal slices of the simulated T1-weighted MRI, PET, and attenuation images. The hyperintense WM lesion is shown on the PET and MRI by a yellow arrow. Figure 2 shows slices of resampled MRI using linear, cubic, and edge-preserving filter guided interpolation schemes. The latter is shown to preserve the sphericity of the tumour unlike the other two approaches where the lesion is elongated. Figure 3 shows a slice of reconstructed PET images with MLEM and KEM algorithms, where the latter employs various resampling approaches to conduct an anatomically-guided image reconstruction. KEM with edge-preserving filter guided resampling results in sharper lesion boundary.

Conclusions: Resampling strategies play an important role in anatomically-guided PET image reconstruction. Edge-preserving filter guided resampling methods better preserve high resolution boundary information in uptake images thereby improving quantification.

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ROLE OF PET AND CT IMAGING FOR DETECTING DISEASE RECURRENCE FOLLOWING ADJUVANT RADIOTHERAPY IN OROPHARYNGEAL CANCER

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Objective: The role of post-treatment imaging for oropharyngeal cancer (OPC) patients treated with definitive chemoradiation is well-defined. However, the role of post-treatment surveillance for patients undergoing adjuvant radiotherapy is unclear. The goal of this study is to provide data on how surveillance modality (Physical Exam vs CT vs PET) impacts the detection of disease recurrence.

Materials/Methods: This is a retrospective, institutional review board approved analysis of 52 OPC patients with recurrence from the years 1997 to 2015 at Mayo Clinic, Rochester, Minnesota. Recurrences developed after OPC being treated with surgery followed by adjuvant radiation therapy with or without chemotherapy. Time to recurrence was determined following adjuvant radiation treatment. Local, nodal or distant recurrence patterns were categorized based on clinical and/or imaging evaluations.

Results: A total of 52 patients with disease recurrence were evaluated. The mean time to recurrence following adjuvant treatment was 10.7 months (median 8 months, range 1 – 40 months). Distant, nodal and local recurrence comprised 79%, 13% and 8% of the cohort respectively. 36 patients recurred during the first year (69%) following completion of treatment. Categorized as: 3 local, 5 nodal, and 28 distant. The patients that recurred, 12 were detected clinically whereas 24 were detected by imaging modalities. CT scans detected 8 cases (CT Chest = 6, CT head and neck = 2) while PET scan was successful in detecting 16 cases. Most common site of recurrence was lung (48%) followed by bone (20%). Mean time of detection by physical exam was 5 months [3 local (25%), 2 nodal (17%), 7 distant (58%)]; and by imaging was 6.2 months [1 local (4%), 5 nodal (21%), 18 (75%) distant]. Early local recurrences are generally detected by physical exam (25% vs 4%). Nodal and distant recurrences (17% vs 21% nodal and 58% vs 75% distant) were detected by imaging exams. PET detected distant recurrences earlier than CT by an average of ~2 months.

Conclusion: Imaging modalities remain the optimal tool for detecting early distant and regional recurrence. Effective surveillance in adjuvant OPC patients is achieved by an initial PET at 3 months followed by another PET at 1 year.

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18F-FDG PET-CT IN STAGING AND THERAPEUTIC RESPONSE EVALUATION OF PRIMARY BONE LYMPHOMAS: AN INSTITUTIONAL EXPERIENCE

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Objective: Primary bone lymphomas [PBL] are characterized by single bone involvement with/without regional lymph nodes or multiple bones without visceral or nodal involvement. Given the limited availability of data, aim of this study was to assess the role of 18F-FDG PET-CT in staging and therapeutic response evaluation.

Material/Methods: Retrospective, cross-sectional analysis of baseline 18F-FDG PET-CT scans in 27 patients with PBL acquired between January 2010 and December 2016. All staging scans were assessed for metabolic and morphological bone changes. For therapeutic response evaluation 5-point Deauville criteria was used. Correlative MRI scan (15 baseline; 11 follow-up) were also reviewed. Analyses were performed with IBM SPSS statistics 20.

Results: Data set included 76 FDG PET-CT scans performed in 27 patients (17males, 10females; Age range: 9-56 years). Histologically, DLBCL was 85%, Burkitt's 15% and T cell lymphoma 4%. All 27 primary bone lymphomas were hypermetabolic (SUVmax 11.7 ± 6.5). Solitary site was noted in 59% (16/27), while 41% (11/27) had multiple bone lesions. Of these, 52% (14/27) were located in axial and 48% (13/27) in extremity skeleton. Soft tissue infiltration was found in 85% (23/27). On concurrent CT, there were mixed lytic/sclerotic (55.6%), destructive, lytic (25.9%) and sclerotic lesions (18.5%).

Twenty-six patients had more than one 18F-FDG PET-CT scan for monitoring therapeutic response. Six patients had complete resolution (CR); 16 had complete metabolic response (mCR, Deauville score 2 or 3) with residual inactive bone changes; 5 had partial response (PR, Deauville score 4). Of these, one was proven to be osteonecrosis (False positive) on subsequent biopsy. Average time interval to achieve the therapeutic response on subsequent PET-CT was 5.5 ± 3.7 months. In comparison, marrow signal abnormality on MRI persisted for an average period of 11 ± 6 months (K=0.06).

Overall sensitivity, specificity, PPV, NPV and accuracy of FDG PET-CT for therapeutic response evaluation were 100%, 94%, 83.3%, 100% and 96% respectively. Six patients relapsed during the course of disease and 2 deaths were observed. Overall 5-year Kaplan Meier survival was 90% (95%CI: 0.53-0.66).

Conclusion: 18F-FDG PET-CT scan is a sensitive imaging modality for staging PBL and accurately evaluates therapeutic response.

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CHARACTERIZATION OF SOLITARY METASTASIS IN BREAST CANCER AS SEEN ON BONE SCINTIGRAPHY

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Objective: The aim of the study is to characterize solitary metastasis in breast cancer as identified on bone scintigraphy.

Materials/Methods: Retrospective review of Tc99m MDP bone scans acquired in patients with biopsy proven breast cancer, from February 2016 to July 2017, using electronic Hospital Information System (HIS).

Results: A total of 84 patients (females=83, male=1, age range: 25 - 83 years) had solitary lesions on planar bone scan. Invasive ductal carcinoma was the most frequent [88%] histopathology. Out of 84, 49(58%) were staging and 35(42%) restaging scans.

Solitary lesions were identified involving sternum 38 [45%], vertebrae 17 [20%], limbs 11 [13%], skull 9 [10%], ribs 7 [8%], pelvis 2 [2%]. SPECT-CT was acquired in 59 patients. Diagnostic CT was available for correlation in 25 cases. Metastatic lesion was characterized in 78 [93%] as sclerotic [n=24], lytic [n=39] and mixed [n=15] lesions. Out of these, 6[7%] remained indeterminate after SPECT-CT/CT. In 4 patients metastases was confirmed on MRI. Two patients have been put on follow-up as indeterminate. 27 (32%) of the metastatic lesions had associated soft tissue component out of these 19 (70%) were involving the sternum. Our results are in consonance with published literature and add to the debate about sternal metastasis being local or distant involvement.

Conclusion: Sternum is the most common site of solitary metastasis, with associated soft tissue component, in breast cancer.

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MESENTERIC LYMPH NODES; WHEN TO CALL THESE ABNORMAL IN LYMPHOMA CHILDREN ON ROUTINE SURVEILLANCE SONOGRAPHY?

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Background: Imaging modalities in post-treatment follow up of lymphoma varies; however, CT scan remains the mainstay in most of the centres. In our local recommendations, abdominal sonography is considered as a first line surveillance imaging for the children in whom baseline disease has involved the abdomen. Detection of mesenteric lymph nodes on routine ultrasound is a common finding. Nevertheless, the delineation of normal mesenteric lymph node from the abnormal one is made on the basis of short axis diameter, and the available literature is exclusively based on CT scan, yet no established data is available providing the cut off values on gray scale sonography. Very limited research has been performed on the utility of sonoelastography to ascertain the nature of mesenteric lymph node.

Objective: The purpose of this study is either to reaffirm or negate the already established size criteria of mesenteric lymph nodes on imaging in children being treated for lymphoma using ultrasound and to provide guidelines for further imaging or to keep the patients on ultrasound follow up.

Materials/ methods: We evaluated the sample of 100 consecutive abdominal ultrasound scan of the children on follow up of lymphoma (62 male and 38 female; age range, 1–15 years; mean age, 7.8 years). Mesenteric lymph nodes greater than 3 mm in the short axis has been included with emphasis on lymph node size rather than the number considering the limitation of the ultrasound. The location of the lymph nodes was also observed being central, peripheral or right lower quadrant.

Results: According to the preliminary evaluation, the size range was between 3.1 mm to 11 mm with mean size of the largest nodes of 5.7 mm. Most of these nodes were identified in the central abdomen denoting their location in mesenteric root. With lymph node short axis diameter of 7.5 mm or above were considered suspicious and were kept on close follow up ultrasound. Any patient with nodal size above 10 mm was considered for further imaging to assess the disease relapse.

Conclusion: Detection of mesenteric lymph nodes on routine sonography provides a very useful information about the disease status during follow up of lymphoma treated children. According to our recommendation, any mesenteric lymph node measuring less than 5 mm remains radiologically insignificant; however, the short axis between 5 mm and 7.5 mm should be closely observed with ultrasound follow up. The nodal diameter of 7.5 mm or above requires further evaluation with CT/ PET-CT.

Keywords: Mesenteric lymph nodes, lymphoma, surveillance, ultrasound.

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CANCER HOSPITAL ENDOSCOPY PRACTICE, PUT TO THE TEST – AN AUDIT BASED ON JAG GUIDELINES.

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Objective: We aimed to evaluate our hospital's endoscopy unit practices against JAG quality and safety indicators for endoscopy. The procedures audited included oesophago-gastro-duodenoscopy (OGD), colonoscopy, endoscopic retrograde cholangio-pancreatography (ERCP) and endoscopic ultrasound (EUS).

Material/Methods: Data for one year were obtained retrospectively from our electronic hospital database and various defined auditable parameters were calculated and compared to the selected standard.

Results: For colonoscopy, a total number of 1353 procedures were performed. The adenoma detection rate (ADR) was 17.5% (recommended ADR – 15%), while the bowel prep adequacy was found to be 74.5% against a standard of more than 90%. The rectal retroversion rate was 98.3% whereas the recommended rate was more than 90%. The caecal intubation rate was 99.2% against a recommended rate of more than 90%. No post-polypectomy bleeding was observed in a total of 63 polypectomies performed (the standard being less than 1/200 procedures). Our colonic stent-related perforation rate was 2.8% (recommended less than 10%). With regard to OGD, a repeat OGD was performed in 100% of patients in whom a gastric ulcer was seen, six weeks after the index OGD, in accordance with JAG recommendations. JAG requires that biliary brushings be obtained in more than 80% of those with a biliary stricture on ERCP. Our brushings rate was 100%. Cannulation of the intended duct was achieved in 72.5% of patients while the standard is for more than 80%. This might be explained by the relatively lower number of ERCP's carried out at our centre per gastroenterologist, being 67, 40 and 33 whereas the recommended number is 75 per year per gastroenterologist. For EUS, our rate of successful EUS-FNA of mediastinal nodes and pancreatic lesions was 93% each, the recommendation being more than 90% and 75%, respectively. Our EUS-related complication rate was 0.5%, which is lower than the 1% allowed by the guidelines.

Conclusion: Overall, our endoscopy practice is in keeping with established international quality standards, although colonoscopy bowel prep adequacy needs to be addressed. Our sub-optimal biliary cannulation rates are likely to be due to the relatively small number of procedures per operator.

Recommendations: We intend to improve the instructions for bowel preparation, with language specific assistance, as well as to educate our physicians on reporting adequacy of bowel prep more accurately. We also plan further audits on a regular basis to ensure continuing adherence to guidelines and to assess improvement where remedial measures have been taken.

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THE DIAGNOSTIC ACCURACY OF ENDOSCOPIC ULTRASOUND GUIDED FINE NEEDLE ASPIRATION IN PATIENTS WITH ENDOSCOPIC BIOPSIES INCONCLUSIVE UPPER GASTROINTESTINAL LESIONS.

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Background: Certain gastrointestinal lesions like sub-mucosal stromal tumours are quite difficult to diagnose with conventional endoscopic forceps biopsies, because of the tumour location in the deeper layers of the gastrointestinal tract. Half of such deeper lesions are usually false negative on endoscopic biopsies (1). Surgical biopsies are considered to be the gold standard for such lesions (2). Newer, less invasive diagnostic modalities are now available for diagnosis of such lesions. One such modality is endoscopic ultrasound guided fine needle aspiration (EUS-FNA) of gastrointestinal tract lesions and is considered to have high diagnostic yield (3), but limited studies have been done. Therefore, we aimed to study the diagnostic accuracy of ultrasound guided fine needle aspiration in patients who had inconclusive endoscopic biopsies of the same lesions.

Materials/Methods: This retrospective study was conducted at Shaukat Khanum Memorial cancer hospital and research centre Lahore, Pakistan, after approval of the hospital's ethical committee. The patients included in the study were from Jan 2008 to Aug 2017, and had inconclusive endoscopic forceps biopsies. They therefore underwent EUS guided FNA of the same lesions. The demographics including age, gender, clinical presentation, endoscopic appearance, endoscopic ultrasound appearance and cytology were studied. The patients were then followed and EUS-FNA cytology outcomes were compared with surgical biopsies, radiological or clinical outcomes. The data was analysed through SPSS-IBM version 20, and diagnostic accuracy, sensitivity, specificity, positive and negative predictive values were calculated.

Results: A total of 972 patients who underwent EUS-FNA were screened, out of which 30 patients fulfilled the inclusion criteria and were included in the study. The mean age was 52.73 years (range 18-80). 70% (n=21) were male and most common clinical presentation was abdominal pain in 40%, (n=12), followed by dysphagia in 33.3 %, (n=10). Oesophageal lesions were in 30 %, (n=9), gastric lesions in 66.7%, n (= 20) and duodenal lesions in 3.3%, (n=1) On EUS 33.3% (n=10), patients had mass lesion, 30%, (n=9) had thickened GI tract mucosa, 10%, (n=3) had heterogeneous mass, 10 %, (n =3) had homogenous mass appearance. EUS-FNA cytology came out to be malignant in 60%, (n=18).Benign epithelial cytology was seen in 30 %,(n=9) while in 10%, (n=3) tissue was inadequate for cytological diagnosis. The EUS-FNA cytology was compared with gold standard surgical biopsies in 30%, (n=9). 50 %,(n=15) patients had clinical follow up at 6 months while radiological follow up at three months was available in 43% (n=13) and 16 %(n=5) were lost to follow up. Diagnostic yield was 66.7 %(of these n=5 were true negative).Sensitivity was 94.4 %, while the specificity was100%. The positive predictive value came out to be 100% and negative predictive value 83.3%.

Conclusion: It is concluded from our results that EUS-guided-FNA has very high diagnostic yield, sensitivity and specificity and thus, is an accurate newer and less invasive modality for diagnosing gastrointestinal tract lesions. Small sample size and retrospective nature of the study are main limitations of our study. Therefore, prospective trails with large sample size are needed to confirm our results.

28 O

AMPHOTERICIN- B ASSOCIATED NEPHROTOXICITY – A SINGLE CENTER RETROSPECTIVE STUDY.

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Objectives: To assess use of Amphotericin B and associated nephrotoxicity at our centre.

Materials and Methods: This retrospective study was conducted at Shaukat Khanum Memorial Cancer Hospital and Research Centre, Lahore, Pakistan, and comprised medical records from 1st May 2016 to 30th April 2017 which were reviewed to identify use of Amphotericin B and associated nephrotoxicity. A total of 228 patients who received Amphotericin B during the study period were included in the study and their data was retrospectively evaluated for the dose and duration of Amphotericin B therapy, baseline renal profile and electrolytes, followed by maximum derangement in renal profile and electrolytes with Amphotericin B therapy. Determinants including their Primary diagnosis, age , gender, indications for the use of Amphotericin B, baseline ANC, days of neutropenia, co morbidities, need for RRT, hospital admission outcome, survival at 4 weeks and readmission were also noted.

Results: A total of 228 patients received Amphotericin B in the study duration. The mean age of the patients was 21.03±19.30 years, with 118 (51.75%) patients being >18 years of age.150 (65.8%) patients were male. ALL was the most common primary diagnosis 78 (34.2%), followed by NHL in 59 (25.9%) patients. 15 (6.6%) patients had co morbid conditions. 13(5.7%) patients had baseline CKD, while 12 (5.3%) had baseline AKI. 151 (65%) patients received Amphotericin B empirically, 16 (7%) had positive cultures and 17(7.5%) had radiological findings suggestive of fungal infection, rest of the patients had a combination of these indications for the use of Amphotericin B.Candida was the most common organism in cultures,17(7.5%) patients, followed by Aspergillus in 13(5.7%) and Mucor in 1(0.4%) patient. Mean dose of Amphotericin B was 0.97 mg/kg.

182(79.8%) patients developed hypokalaemia with therapy. Mean baseline K level was 3.9 and mean of lowest k level with therapy was 2.9.

65(28.5%) patients developed hypomagnesemia. Mean baseline Mg level was 1.92 and mean of lowest Mg level with therapy was 1.47.

9 (3.9%) patients underwent renal replacement therapy. Mean baseline serum creatinine level was 0.45 and mean peak creatinine level was 0.94.

79(34.6%) patients died during hospital admission. 140 (61.4%) patients had 4 weeks survival. 85(37.3%) patients readmitted within 30 days.

Conclusions: These findings allow documentation of side effects profile of Amphotericin B therapy in our centre. Data shows that use of Amphotericin B is commonly associated with electrolyte abnormalities with hypokalaemia in 79.8% and hypomagnesemia in 28.5% of the cases. Derangements in serum creatinine levels were not that common with only 4% patients requiring renal replacement therapy.

29 O

RE-AUDIT: MANAGEMENT OF ADULTS WITH DIABETES MELLITUS UNDERGOING SURGERY

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Introduction: The presence of diabetes or uncontrolled hyperglycaemia in surgical patients is associated with increased morbidity and mortality. Optimal glycaemic control in the peri-operative period leads to improved morbidity and reduced length of stay. We developed and implemented an insulin infusion protocol (VRIII) for management of patients with diabetes mellitus undergoing surgery. Introduction to the use of VRIII was based on the results of our previous audit, which showed poor glycaemic control in this patient population. In this re-audit we reviewed implementation of the protocol and if it led to improvement in glycaemic control.

Methods: We included patients with diabetes who underwent surgery and were treated with variable rate intravenous insulin infusion (VRIII) between 15th March and 15th June 2017. 36 such patients were identified. We reviewed the perioperative management of diabetes using hospital Information System
(eHIS) retrospectively.

Results: 24% patients were taking oral hypoglycemic agents (OHAs), 23.5% were on insulin and 21% on OHA and Insulin. Mean value of HbA1c prior to surgery was 9.3%. Average duration of starvation was 25 hours. We found that 65% of patients had capillary blood glucose within target of 110 -180 mg/dl as compared to previous observation of 45%. There were 11 episode of hypoglycaemia. None of the hypoglycaemic episodes were treated as per hospital protocol. There was no incidence of diabetic ketoacidosis. Average duration of VRIII was fifty hours. Diabetic medications on discharge were prescribed in 62% of patients as compared to 7% in the previous audit.

Conclusion: VRIII protocol has led to significant improvement in peri-operative management of diabetes, both during stay and at the time of discharge, at our centre. However this re-audit has demonstrated poor recognition and management of hypoglycaemia. We suggest improved education and regular training sessions of nursing and junior medical staff to improve hypoglycaemia awareness, adherence to hospital protocol to management hypoglycaemia, aiming to achieve better patient outcome.

30 O

FREQUENCY OF INFECTIONS AND DIFFERENT CAUSATIVE ORGANISMS IN PATIENTS WITH ADVANCED MALIGNANCY IN A CANCER HOSPITAL – A SINGLE CENTER REVIEW

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Objectives: To analyse the frequency of suspected or proven infections and causative organisms in patients presenting in acute palliative care unit and their outcomes.

Methods: This cross-sectional review was carried out at Shaukat Khanum Memorial Cancer Hospital and Research Centre, Lahore. Medical records of all patients, admitted in palliative care unit from January 2013 till December 2014, were reviewed for various infections and their outcomes.

Results: There were a total of 344 admissions on the palliative care unit at SKMCH&RC over the study period out of which 105 admissions (31%) were with suspected or proven infections. Fever was the most common symptom of infection in these patients (65%). Respiratory symptoms were most common cause of fever, in about 59% of patients, less common symptoms from urinary system, discharge from wounds. One hundred and twenty eight sets of blood cultures were sent in these patients, sometimes more than once in a single patient, out of which 94 (73%) were negative for any growth. Eighty six urine cultures were sent and 38 (44%) were negative for any organism. Among positive urine cultures, E coli was most common organism (46%), while only 21% of positive blood cultures had E coli, despite being the most common organism in blood cultures as well. Other type of specimens (Sputum, tracheal aspirate, CSF, wound discharge) were sent in 68 patients, out of which 32 (47%) were positive for different organisms, Pseudomonas being most common organism (29%).

Conclusion: Patients in palliative care unit usually present with their disease at advanced stage, with infections being one of the common presentations. Respiratory tract infections were most common infections in these patients. E coli was most common organism detected in blood and urine cultures. Pseudomonas was the most common organism found in cultures of other types of specimen including wound, sputum, CSF.

31 O

HER2 STATUS IN BREAST CANCER SPECIMENS BY BOTH IMMUNOHISTOCHEMISTRY AND FLUORESCENCE IN SITU HYBRIDIZATION

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Objective: The aim of the study was to compare the results obtained by IHC and FISH in determining HER2 status in breast cancers and to correlate HER2-positive status with tumour grade.

Study Place and Period: 669 samples included in this study were received in the Department of Pathology, Shaukat Khanum Memorial Cancer Hospital & Research Centre (Lahore, Pakistan) from January 2014 – December 2016 (i.e., 3 years) and processed for HER2 IHC/FISH.

Material/Methods: A total of 669 breast cancer specimens were analysed. IHC was performed and only weak positive IHC (i.e., 2+) samples were referred for reconfirmation of HER2 gene amplification by FISH. All procedures were applied to de-paraffinised tissue sections of breast tumour samples. IHC was performed using monoclonal antibody (mAB-10A7) and FISH with gene-specific LSI HER2 orange and CEP17 green dual colour probe. Amplification ratio of >2.20 was used to render samples FISH-positive and <1.8 FISH-negative.

Results: Approximately 66% IHC 2+ samples were found to be FISH-negative whereas rest (29%) exhibited gene amplification. Approximately 26% of equivocal IHC 2+ samples remained equivocal or borderline positive (between 1.8-2.20) on FISH. Ten IHC 3+ samples were sent for reconfirmation by FISH from which only one was unamplified; remaining 9 samples remained FISH positive. Breast cancer types and grades were also correlated with FISH HER2 positivity. Our results showed 56.7% (110/194) HER2 positivity in invasive ductal carcinoma (IDC) grade III versus 40% (78/194) in IDC grade II. A single case of residual IDC and metaplastic carcinoma (grade II) showed HER2 positivity. Other carcinomas such as mammary carcinoma with mixed ductal & lobular (3/194), mucinous carcinoma & IDC with micro-papillary features (grade II) were HER2 positive. However, cribriform, papillary carcinoma (grade II), papillary neoplasm were negative for HER2 gene amplification by FISH. The incidence of breast cancer among various age groups was also assessed. In this context, HER2 positivity was observed in 4% (4/194) of the cases in 21-30 age group, 17% (33/194) in 31-40, 33% (64/194) in 41-50, 32% (62/194) in 51-60, 13% (25/194) in 61-70 and 3.1% (6/194) in >70 years of age.

Conclusions: Our data showed that most weakly positive IHC 2+ is negative on testing with HER2 FISH. Thus, screening of breast carcinomas with IHC and confirmation of weakly positive IHC results by FISH serves as an effective and reliable strategy for testing HER2 as a predictor of response to targeted therapy. Incidence of HER2 positivity increased with age, especially between age 40 to early sixty years of age and in high-grade carcinomas. Furthermore, correlation of HER2 with early stage cancers needs to be firmly established by analysing a larger sample size.

32 O

PSYCHOSOCIAL PROBLEMS AND NEEDS ANALYSIS OF POST-TREATMENT BREAST CANCER PATIENTS AND THEIR RELATIVES: A CROSS SECTIONAL SURVEY FROM KARACHI, PAKISTAN

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Purpose/Objective: Cancer burden is rising exponentially in underdeveloped countries. Pakistan has the highest incidence rate of breast cancer in Asia. Post-treatment cancer patients and their relatives bear considerable health associated risks during the initial stages of survival ship. This study is an effort to assess psycho-social problems and needs among breast cancer and their relatives during the acute survival ship.

Material/Method: Treated breast cancer patients (n=117) were invited to participate in this study along with their relatives who have provided care during the active course of illness. The study tools were Supportive Care Need Survey (SCNS) for patients and Psychological Need Inventory (PNI) to assess the needs pf relatives. SPSS version 20 was used for data analysis.

Results: The mean age of patients and relatives was 41 ±12 and 36 ±11 respectively. Patients reported needs related to physical daily living and psychological well-being. Needs of relatives were mainly linked with the need for identity, need for effective access to the healthcare professionals and need for practical support. The young patients showed more needs related psychological issues, sexuality, care and support, healthcare system and support. Low income level raised needs of physical daily living for patients. For relatives, young age was linked with more needs for information, effective access to healthcare professionals, identity and support network. Low income has an impact on the needs of practical support domain. While gender has a positive impact on needs for information, effective access to healthcare professionals, practical support identity and child care.

Conclusion: Outcomes of this study fortify the need to develop healthcare plan for patients and their relatives importantly during the initial follow up period. Cancer support groups scheduled counselling sessions, restoration programs should be the part of post-treatment clinical care.

Key words: Post-treatment, Breast cancer, psychosocial problems and needs, Relatives, Healthcare plan

33 O

IMPACT OF COX2 OVEREXPRESSION ON 5-YEAR AND DISEASE FREE SURIVVAL OF OSCC PATIENTS OF PAKISTAN

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Objective: Worldwide, oral cancer accounts for 1-4% of all cancers, with high prevalence in Southeast Asian countries, particularly in Pakistan. Almost 90% of oral cancer constitutes of Oral Squamous Cell Carcinomas (OSCC) which originates in the tissues lining the lips and mouth. Cyclooxygenase 2 (COX2) is a rate-limiting enzyme that is upregulated in many cancers. It is involved in angiogenesis, apoptosis and metastasis of neoplasia. The aim of our study was to observe the expression of COX2 in OSCC and correlate the expression with patient's overall survival (OS) and disease free survival (DFS).

Materials/Methods: A total of 100 OSCC patient cases were selected. Immunohistochemistry for COX2 was performed on formalin-fixed paraffin-embedded (FFPE) tissue sections. All patients gave written informed consent before participation and ethical approval was obtained from Ethical Review Committee of Aga Khan University Hospital.

Results: Out of a total of 100, 55 specimens were positive for COX2 overexpression. Moderate staining was observed in 29 specimens, followed by 20 mild and 6 strong positives. The univariate analysis evidenced an association of COX2 with DFS ($p=0.001$) and OS ($p=0.013$). The multivariate analysis revealed no independent effect of COX2 on OS ($p=0.208$). However, COX2 expression was significantly associated with DFS ($p=0.044$).

Conclusion: COX2 overexpression can be used to predict OSCC patient prognosis, more specifically, their disease free survival.

Keywords: Oral squamous cell carcinoma (OSCC), overall survival (OS), cyclooxygenase-2 (COX-2).

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AUDIT ON SCREENING FOR HEPATITIS-B AND C BEFORE RENAL REPLACEMENT THERAPY

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Introduction: Blood borne virus (BBV) infection is an important global hazard in renal units both for patients and staff. Incidence of Hepatitis-B and C is declining worldwide, but remains endemic in Pakistan. Every 10th person Pakistan is suffering from viral hepatitis with prevalence rates ranging from 2-5% and 5-8% respectively for Hepatitis-B (HBV) and Hepatitis-C (HCV). Kidney Disease Improving Global Outcomes (KDIGO) has published guidelines for prevention of BBV in renal dialysis units. Universally, reduction in incidence of BBV in renal units has been associated with implementation of "standard" or "universal" infection control precautions.

Objectives: We aim to assess screening of patients for BBV (especially Hepatitis B & C in our clinical setting) before proceeding with renal replacement therapy (RRT) i.e. dialysis, CVVH, SLEDD, in our Intensive Care Unit (ICU), as per KDIGO guidelines, in this on-going audit.

Methods & Results: We collected and analysed the data from ICU RRT register, retrospectively, for those patients who had received RRT, in last 1 year between September 2016 and August 2017. Out of the total 188 dialysis, 179 patients (95%) were pre-screened for hepatitis B and C. 3/179 patients (1.67%) were screened positive for hepatitis C and 1/ 179 patient (0.5%) was positive for hepatitis B. 9/ 188 patients (4.78%) did not have Hepatitis B and C status checked before RRT.

Conclusion: All patients must be screened for Hepatitis-B and C before receiving RRT. 5% of patients were not screened prior to RRT in this study. Similarly, a small but important number of patients in this cohort were positive for BBV and received RRT. Dialysis equipment used whilst awaiting BBV screening results, in an emergent setting, must be considered potentially contaminated. Implementing strict infection control procedures (hand hygiene, personal protective equipment, patient and machine isolation), screening patients for HBV and HCV prior to undergoing dialysis and promptly reporting any new cases among patient undergoing haemodialysis can reduce the incidence of hepatitis infection.

35 O

PREDICTING FACTORS FOR RECURRENCE IN ESOPHAGEAL CANCER PATIENTS TREATED WITH NEO-ADJUVANT THERAPY AND SURGERY; A SINGLE INSTITUTION ANALYSIS.

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Background: Oesophageal cancer is a complex disease with a 5 years survival rate of 25% after esophagectomy, and a disease free survival reaching up to 50 % at 2 years.

Objectives: To analyse and report upon the factors having an impact on recurrence and an overall disease free survival in our oesophageal cancer patients, managed with a tri-modality treatment (neoadjuvant chemotherapy, radiation therapy and surgery).

Study Methodology and Design: It is a retrospective analytic study design. All patients with resectable oesophageal cancer managed at our institute electively after multidisciplinary management plan of neo-adjuvant treatment followed by oesophageal resection were evaluated from January 2005 till December 2014. Basic demographic, clinical, radiological and pathological disease related parameters were assessed through the HIS for a total of 232 patients. Patients with a less than 1 year follow-up period including those with an early mortality due to causes other than recurrent disease (n=14) were excluded from the study. Also patients with an emergency esophagectomy (n=8) and hence no neo-adjuvant treatment or a histopathology other than adeno or squamous cell cancer were excluded. Additionally, patients with a metastatic disease at presentation and before completion of treatment were considered ineligible.

The variables evaluated for a relationship with recurrence are tumour histological type, pathological grade, location, radiological initial and post neo-adjuvant pathological TNM (tumour, node, metastasis) stage, pathological nodal index, completeness of margin status, type of neo-adjuvant modality used, type of surgical procedure done, postoperative major (class III/IV) complications and duration between the completion of neo-adjuvant treatment and surgical procedure performed. The primary end point is impact of above mentioned factors on tumour recurrence and disease free survival. Patients were further segregated into those with complete pathological response and those with partial response to look for any variation in results between these two major groups.

Results: A total of 161 patients with a median follow-up of 33.28 months (IQR= 17-45 months) were further evaluated. On uni and multivariate linear logistic regression analysis after controlling for all included variables in the study, a complete pathological response, negative resection margins, a pN0 stage and a low nodal index were found as statistically significant (p= <0.05) good prognostic factors for recurrence. However, on Cox-regression model no individual factor had any statistically significant impact on overall disease free survival.

Conclusion: Our data suggests that in the post esophagectomy patients along with the adjuvant treatment modalities residual disease, high nodal index and positive resection margins to be the only significant predictors for a higher risk to recurrence.

36 O

AN OVERVIEW OF LARYNGEAL CANCER EXPERIENCE AT A TERTIARY CARE ONCOLOGICAL CENTER IN A DEVELOPING COUNTRY

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Introduction: Development of laryngeal cancer is multifactorial and management is surrounded with controversies. Recent reports suggest a decline in the survival of these patients. We analysed the clinicopathological parameters and computed the outcomes in terms of survival in patients with laryngeal cancer treated at our institution.

Material/Methods: Electronic charts of 515 patients with Laryngeal cancer treated at Shaukat Khanum Memorial Cancer Hospital and Research Centre from 2004 to 2014retrospectively reviewed.

Results: Median age was 62 (Range 32-90). M 91%: F 9%. Sixty percent were smokers and 2% gave a history of alcohol use. Histologically 98% were squamous cell and tumour grade was well, moderate poor and unknown in 37%, 43%, 8% and 12% respectively. Subsite was Glottis 88%, Supraglottis 11% and Subglottis 1%. AJCC 7th edition stage I, II, III and IV was 41%, 7%, 25% and 27% respectively. Treatment was non-surgical radiotherapy + chemotherapy in 92% and surgical + radiotherapy/chemotherapy in 8%. The 5 - year overall survival (OS), Disease specific survival (DSS), Disease free survival (DFS) and locoregional control (LRC) were 67%.74%, 59% and 70% respectively. OS, DSS, DFS and LRC for early stage (I-II) and advance stage (II-IV) were 81 & 54%, 86 & 63%, 75 & 45%and 83 & 57% respectively. Site of recurrence were local 22%, regional 2%, locoregional 2%, distant 1%. Of these failures 19% were inoperable, 36% were salvaged with surgery and 34% of local failures refused laryngectomy and subsequently died of disease.

Conclusions: Our survival rates are comparable with published data. The high refusal rate for both primary and salvage total laryngectomy is of concern; there is need to expand voice rehabilitation, counselling, and support services in the developing world to increase acceptance of total laryngectomy both as a therapeutic and salvage procedure in developing countries.

37 O

Ki 67 EXPRESSION IN BREAST CANCER AND PREDICTION OF TUMOUR BEHAVIOR IN OUR POPULATION

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Objective: Our aim was to identify the effect of Ki67 in terms of tumour response to chemotherapy in our study population.

Material/Methods: The data of all patients who presented to our hospital from Jan 2014 to Dec 2015 with breast cancer was analysed. We included all the patients who received neo-adjuvant chemotherapy and excluded all those in whom upfront surgery was performed. We recorded the demographics, tumour characteristics, receptor status, tumour response to chemotherapy and Ki67 values. Cut off of 14% and below was taken as low Ki67 values. The data was analysed on SPSS version 20. Cross tabulation was performed to find out the relationship of Ki67 to tumour response. P-value of 0.05 was taken as significant.

Results: After exclusion, the data of 563 patients was analysed. Median age of our study population was 45 years. Most of the tumours were Invasive ductal carcinomas 475 (84.4%) followed by invasive ductal with DCIS 61 (10.8%). 243 (43.2%) had grade II tumour while 316 (56%) had grade III Tumours. Oestrogen receptor was found positive in 412 (73.2%) of patients. 439 (78%) of patients had Ki67 value of more than 14% while 124 (22%) had low Ki67 values. Contrary to several other studies, Ki67 values were found to be higher in older patients who were more than 40 years of age i.e. 280 (49.7%) as compared to those patients who were comparatively younger i.e. 159 (28.24%). 279 (63.5%) patients with high Ki67 values showed partial response while 130 (29.6%) had complete response to chemotherapy. The p value was 0.002 which is highly significant. Extra nodal extension was found in 72 (67.92%) patients with high Ki67 value. P-value was found to be significant i.e. 0.018.

Conclusion: Ki67 in our study acted as an independent predictor of tumour response to chemotherapy. This study also shows that the more the Ki67 value the more aggressive will be the tumour.

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DERMATOFIBROSARCOMA PROTUBERANS: DIFFERENT PROBLEM WITH DIFFICULT SOLUTIONS

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Background: DFSP is an uncommon low grade sarcoma of fibroblast origin. Its Incidence 4.2 to 4.5 cases per million per year. In children, DFSP is even less common and likely misdiagnosed or underdiagnosed

Objectives: To evaluate cases of DFSP and to review the clinical characteristics and treatment of DFSP patients in relation to their age, their anatomical location, type and surgical management

Methodology: Case series of DFSP in 11 patients, operated in Plastic surgery department of Patel hospital Karachi during 2010 to 2016 are included in this study. Wide local excisions were performed and reconstruction was done according to defects.

Results: Patients age range from 3 years to 57 years. Almost all presented with recurrent lesions except one. Limbs were most commonly affected followed by trunk.
In 6 patients after wide local excision defects covered with skin grafts and in 5 flap coverage was done. All flaps survived and two patients had partial graft loss. Adjuvant radiotherapy is given in 5 patients. Till date no recurrence is documented in these patients.

Conclusions: DFSP is uncommon and even rarer in childhood and because of delay in diagnosis or wrong diagnosis patients present late with some incomplete surgical resections. Dealing with recurrent lesions is difficult and challenging both in regards to excision and coverage of large defects as well as in regards to adjuvant radiation.

Keywords: dermatofibrosarcoma protuberans, wide local excision, reconstruction

39 O

LACK OF AWARENESS AMONG SURGEONS REGARDING SAFE USE OF ELECTROSURGERY. A CROSS SECTIONAL SURVEY.

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Objective: To assess the fundamental knowledge on the safe use of electrocautery among surgeons at our institute.

Methodology: A questionnaire was prepared and distributed among all the surgeons and residents at our institute which tested their knowledge and understanding on the safe use of electrosurgical devices. A total of 8 consultants, 8 fellows and 14 residents were tested. For the sake of anonymity no information was obtained regarding the level of training and experience on the proformas. Total 12 questions were asked and an expert level was set at 10/12. Moderate level at above 6 and below that was considered as unsafe.

Results: A total of 30 participants completed the questionnaire. Only 3 had an expert level of understanding. 8 had moderate understanding and 17 were considered unsafe regarding use of electrosurgical devices. 85% participants were not aware of that electrosurgery relies on AC current for usage. 66% participants weren't aware of the correct placement of dispersive electrode. 85% participants weren't aware of the correct mode of current to use for coagulating vessels. 50% of surgeons would cut a dispersive electrode to fit it on a child. 60% participants were unaware of the need for double gloving while using electrocautery. 60% of surgeons didn't know how to handle an operating room fire. 50% participants weren't aware how to protect themselves from the hazardous OR smoke.

Conclusion: There is lack of understanding on how electrocautery works and how to use it safely. There is a need to arrange hands on workshops and lectures to increase awareness of this item which is a necessary part of a surgeons practice.

40 O

MUCINOUS CARCINOMA OF BREAST: A RARE TUMOUR WITH FAVORABLE PROGNOSIS.

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Objectives: To describe the biological behaviour of Mucinous Breast Carcinoma (MBC) regarding their clinical presentations, pathological features, prognosis and survival.

Methods: We conducted this retrospective study from 2006 to 2015 (10 years duration), and included all the patients who presented with mucinous carcinoma of the breast at any age. We excluded all the patients who presented with invasive ductal carcinoma or other rare breast tumours. Each patient with mucinous carcinoma breast was categorized in terms of diagnosis, surgery, chemotherapy and outcome. For categorical variables chi square test was used. Kaplan Meier curves were used to determine estimated overall survival. Data analysis carried out using SPSS 20.

Results: In total 8841 patients with breast carcinoma presented during the study period, 74 patients presented with mucinous breast carcinoma constituting < 1%. Family history of breast carcinoma was positive in 20% of patients. Most of the women were post-menopausal (66.2%) with BIRADS category 4 and 5 (32.4% each). Tumours were almost equally distributed between right and left side and breast conserving surgery (BCS) was performed in 47.3% of women as compare to modified radicle mastectomy (MRM) in 52.7% women.

Most of the patients were having pathological T2 (51.4%) and N0 (81.1%) moderately differentiated (69%) mucinous carcinoma. ER was positive in 85% patients, PR in 80% and H2N in 74.6% patients. Neoadjuvant chemotherapy was given to 20 patients (27%) and adjuvant chemoradiotherapy was given to 51 patients (69%). Metastasis occurred in 12 (16.2%) of our patients while 62 (83.8%) were metastasis free on long term follow up, with bones being the most common site of metastasis in 6 patients (8.1%) followed by lungs in 4 patients (5.4%). Total of 32 (43.2%) patient are alive and on regular follow up, 3 (4.1%) died during the course of follow up and 39 (52.7%) are lost to follow up with a median survival of 60 months and an overall 5 year survival of more than 95% .

Conclusion: MBC is a rare breast carcinoma with a good prognosis.

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COMPLETE PATHOLOGICAL RESPONSE AND SURVIVAL IN PATIENTS WITH ADVANCE RECTAL CARCINOMA: AN EXPERIENCE FROM A TERTIARY CARE CANCER HOSPITAL.

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Purpose/Objective: We conducted this study to assess the long term survival of patients with advanced rectal cancer who had a complete pathological response.

Method: Medical records of all the patients who presented to our hospital and got treatment for rectal adenocarcinoma of any age and both sexes were included in our study. Parameters included patient's age (both in years and group <45 or >45 years), sex (male or female), clinical presentations and histopathological examination (complete response/residual disease), pathological staging, date of start of treatment, date of completion of treatment, date of recurrence, surveillance status (alive/dead/lost to follow up). All data was analysed on SPSS 20.

Results: Total of 329 patients were studied. 31% were below the age of 45 and 69% were above the age of 45 years. Males were more commonly affected (65.7%). Complete pathological response was found in 88 patients (26.74%) and 241 had partial / stable disease (73.25%). Univariate analysis showed grade of tumour (P-value 0.031), lymphovascular invasion (P-value 0.002), radial margin (P-value 0.001) and lymph node involvement (P-value 0.011) as independent significant factors, while multivariate analysis showed only radial margin involvement as significant risk factor with P-value of 0.015. Median survival of patients with complete pathological response was 55 months and with partial response was 47 months. Overall 5 year survival for patients with complete pathological response was 90% as compare to patients with partial response whose 5 year survival was 70%.

Conclusion: Patients with complete pathological response have good prognosis and increased overall survival as compare to patients with partial response.

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IMPACT OF HEPATIC ARTERIAL ANOMALIES ON SURGICAL DISSECTION, POST OPERATIVE RECOVERY AND COMPLICATIONS FOLLOWING PANCREATICODUODENECTOMIES

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Objective: Variations in hepatic arterial anatomy are frequently encountered in patients undergoing Pancreaticoduodenectomies (PD) and remains a challenge for the performing surgeon. Unidentified aberrant arterial anatomy can cause inadvertent injury and complications. We present the incidence, management and implications of aberrant hepatic arterial anatomy on post-operative complications of patients after PD at our institution.

Methods: Patients undergoing PD between December 2014 and November 2016 were included and divided into two groups; one group with aberrant hepatic arteries and other with normal hepatic arterial anatomy. Preoperative imaging, operative findings, post-operative complications, post-operative recovery and hospital stay of these patients were reviewed and compared. Aberrant anatomy was classified according to Hiatt classification (Hiatt JR et al. Ann Surg 1994;220(1):50–2)

Results: Among a total of 64 cases, vascular anomalies were seen in 24 (37.5%) cases. Most common anomaly seen was the replaced Right Hepatic artery arising from Superior mesenteric artery (11%). Patients were divided into two groups according to presence (group A) or absence (group B) of vascular anomalies.

Postoperative pancreatic fistula occurred in 27 patients (6 Group A, 21 Group B). Delayed Gastric Emptying was seen in 11 patients (5 Group A, 6 Group B). Postoperative complications were seen in 31 patients (13 Group A, 18 Group B). TPN was required postoperatively in 10 patients (6 Group A, 4 Group B). Nineteen patients required readmission (6 Group A, 13 Group B) and 4 patients required re-intervention (2 Group A, 2 Group B). The median operative time was 450 minutes (495 min Group A, 445 min Group B). Median blood loss was 355 ml (Group A 380 ml, Group B 300 ml). Median hospital stay was 10 days (Group A 11 days, Group B 9 days). There was no significant difference between the operative or postoperative outcomes among the two groups.

Conclusion: Aberrant hepatic arterial anomalies should preferably be identified on pre-operative imaging. Meticulous surgical dissection with artery first technique is useful in minimizing inadvertent damage to aberrant vessels. However presence of aberrant arterial anatomy has no impact on post-operative course and recovery.

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OPIOID ANALGESIA AND RECURRENCE OF BREAST CANCER

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Introduction: Breast cancer is the most common primary cancer in women all over the world. Incidence of breast cancer in Pakistan is 2.5 times higher than that of neighbouring countries with hundreds of thousands being affected each year. Pakistan has the highest incidence of breast cancer in Asia. Surgery remains the primary treatment modality for breast cancer patients. Proper analgesia and safe conduct of anaesthesia has always been the mainstay of anaesthesiology practice. Opioids analgesia still remains the primary anaesthesia technique for onco-anaesthesia. Opioids such as Morphine, Fentanyl, Remifentanil and Tramadol are frequently used. Recently various in vitro studies have linked opioids to recurrence of cancer.

Objective: The purpose of this study is to evaluate and identify any link between opioid usage for analgesia and recurrence of breast cancer after breast surgery conducted between January 2009 to December 2012 at Shaukat Khanum Memorial Cancer Hospital and Research Centre Lahore.

Methodology: This was a retrospective study. An approval was obtained from the Institutional review committee of the hospital for the conduct of this research. A computer generated list of patients was populated by using two Current Procedural Terminologies. It displayed the Medical Registration numbers, names and types of surgery from January 2009 to December 2012. Data was extracted through the Hospital Information System using these Medical registration numbers at Shaukat Khanum Memorial Cancer Hospital and Research Centre Lahore. Through surgeon notes, the age of the patient at the time of surgery, date of diagnosis, date of surgery and the type of surgery performed were noted. Intra/Post –operative use of Opioids was noted. Recurrence, if occurred was noted through doctor's notes five years post-surgery along with the site of recurrence and the first date of presentation with the symptoms of recurrence. Histological grade of tumour was noted down through surgeon notes along with histopathology reports available on the Hospital Information System reports section. Intraoperative use of volatile anaesthetics, blood transfusion and nerve blocks (if any) were noted down using the archived charts which were present in the archived notes of the patient in HIS. This data information was noted down on a specialized Performa.

Results: A total of 447 patients were screened. 13 patients were excluded from the study due to preoperative distant single organ metastasis. Out of the remaining 434 cases, 3 (0.6%) patients were male whereas 431 (99.4%) patients were females. All 434 patients (100%) received morphine as the opioid analgesic intraoperatively. The mean dose of morphine was 5.7mgs. 25 (5.76%) patients were lost to follow up.

99 (22.81%) patients had recurrence of cancer. Out of 99, the organ involvement in majority was of liver + bony metastasis (56.68%). The predominant comorbid conditions in our patients was hypertension i.e. 96 patients (22.6%). The mean time between surgery and the date of diagnosis among these patients was 16.3 days respectively. The mean age of the patients at the time of surgery was 47.2 years respectively. The data was statistically analysed through regression analysis and it was found that there was no direct co-relation between the use of Morphine and breast cancer recurrence.

Conclusion: There was no significant relation (22.81%) between the use of morphine and recurrence of cancer found in this study.