study is underway to determine the tolerability and outcome of this maintenance regime.

4130 POSTER

Radiotherapy in paediatric central nervous system tumours: analysis of referral patterns and patient profile

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Background: To study the profile of paediatric central nervous system (CNS) tumours referred for radiotherapy (RT).
Materials & Methods: We reviewed records of 183 patients (pts) <20 years seen at our department (2003–2008) & noted demographic & treatment details.
Results: Median age was 10 years (range 2−20) & male:female ratio 2.2. Median symptom duration was 4 months (range 0.25−84) & included headache (72.1%), vision loss (33.9%), ataxia (29%), cranial nerve palsies (27.9%), limb weakness (15.3%), seizures (14.8%), endocrine dysfunction (4.4%) & bladder/bowel incontinence (3.3%). Brain imaging included MRI (86.9%) or CT scan (13.1%). Tumour location was supratentorial (50.8%), infratentorial (45.4%) or spinal (2.7%). Spine was involved on MRI (8) or CSF cytology (2) in 10 brain tumours. Surgery was done in 152 pts (76.9% internal, 23.1% external referrals): gross total (49), near total (33), decompression (65) or biopsy (5). Diagnosis was histological [glioma (low grade 40, high grade 17), medulloblastoma/primitive neuroectodermal tumor (PNET) 46, craniopharyngioma 16, ependymoma 13, germinoma 5, others 15] or radiological [glioma (brainstem 24, thalamus 4, optic nerve 1), PNET 2]. Residual disease on postoperative imaging (n = 108) was absent (30.6%), $\leqslant$1.5 cc (14.8%) or >1.5 cc (54.6%). Median diagnosis to RT referral time was 22 days (range 0–438). Median waiting time for RT was 38 days. RT was given for primary disease (75.4%), postoperative residual (16.9%) or recurrence (7.7%); RT volume being focal (70.5%), craniospinal (26.8%) or whole brain (2.7%). RT intent was curative (98.4%, dose range 50−60.04 Gy, median 56 Gy) or palliative (1.6%, dose range 5−20 Gy), with 97.8% compliance. Median RT duration was 43 days (range 1−88 days); 88.8% completed RT in $\leqslant$50 days. Chemotherapy was given to 81 pts (median 6 cycles, range 1−12), common regimes were carboplatin-etoposide (42), temozolomide (20) or bleomycin-etoposide-cisplatin (5). Post-therapy, 80 achieved complete remission, of which 12 relapsed (7 local, 5 spine). Salvage therapy given to 9 pts included chemotherapy (7), surgery (1) or RT (1). At a median follow up of 10.36 months, 74 (40.4%) were disease-free, 56 (30.6%) were alive with disease, 1 (0.5%) was dead; status was unavailable for 28.5% (on therapy or lost to follow up).
Conclusion: RT is an integral & effective management component in many common paediatric CNS tumours. However, referral & waiting times need reduction for maximal benefit.

4131 POSTER

The result of ICE chemotherapy as first line therapy in adolescent germ cell tumour – experience from India

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Background: Tumors of germ cell origin account for approximately 2% to 3% of childhood malignancies. The primary chemotherapy approach in patients with stage II and III disease combined with limited surgery with or without radiotherapy has been effective in paediatric cases. This approach has the advantage of preserving as much reproductive and endocrine function as possible without compromising long term survival. The aim of our study was to see the effect of ICE chemotherapy as first line therapy in adolescent germ cell tumour.
Materials & Methods: During the period from January 2005 to December 2008 we selected consecutive 45 cases of adolescent germ cell tumour in the paediatric oncology department of Netaji Subhash Chandra Bose Cancer Research Institute. The age range of the patient was from 12 to 18 years (median age 14.8 years). There were 27 females (60%) & 18 males (40%). All patients were started with ICE chemotherapy every 3 weekly for 6courses. ICE consisted of Iphosphomide 2 mg/m^2 day 1 to day 5, Etopside 100 mg/m^2 day 1 to day 5 & Cisplatin 20 mg/m^2 day 1 to day 5. The response evaluation was done in the following criteria, complete response was defined when there was total disappearance of the mass, major response was defined when there was more than 75% disappearance of the mass, partial response was defined when there was less than 50% reduction of the mass.
Result: After 4 courses of chemotherapy 30 patients (67%) had complete disappearance of the tumour. Eight patients (18%) had major response; other 7 patients (16%) had partial response. For those patients in major response, two more chemotherapy was considered. Surgery was advised to those patients with partial response. The patient tolerated ICE chemotherapy well. Grade III or IV neutropenia was seen in 9 patients (20%) only.
Conclusion: ICE chemotherapy is very useful combination chemotherapy in adolescent germ cell tumour. It is well tolerated by the patients.

4132 POSTER

The treatment results of patients with Non-Hodgkin Lymphoma followed by pediatric oncology clinic in Cukurova region in Adana

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Background: To investigate the treatment results of patients with Non-Hodgkin lymphoma.
The third most common cancer in children <15 years of age is lymphoma which is accounted for 10−15% of childhood cancers. Non-Hodgkin lymphoma (NHL) is a malignant disease of lymphoid system. As a result of prolipheration of lymphocytes metastatic involvement, including BM, CNS and/or bone occurs.
Material and Methods: We investigated 82 patients diagnosed with NHL in between June 1996 and January 2009. Cases included 23 (28%) girls and 59 (72%) boys. Mean age was 81.5$\pm$44.6 (8–205) months.
Results: 53 (64.6%) of patients were Burkitt lymphoma, 18 (22%) were lymphoblastic lymphoma, seven (8.5%) was diffuse large B cell lymphoma, three (3.7%) was anaplastic large cell lymphoma and one (1.2%) was maltoma. While one of these cases (1.2%) was stage I, 12 (14.6%), 41 (50%) and 28 (34.2%) of patients were stage II, III and IV, respectively. 61 (74.4%) of NHLs were presented in the abdomen. Nine (13.4%) of which was located in the thorax and 9 (13.4%) of which was in the head and neck. Other locations were skin (one) and central nervous system (two). One case with unknown origin was disseminated. Pleural effusion, bone marrow infiltration and ascites were found in 16 (19.5%), 16 (19.5%) and 9 (13.4%) of patients, respectively. 61 (74.4%) of cases were diagnosed with mass biopsy. NHL was diagnosed in totally and partially resected mass in 13 (15.9%) and 8 (9.7%) of cases operated with the findings of intestinal obstruction or suspicion of appendicitis, respectively. 64 (78%) of cases received BFM-90 and 18 (22%) were given LSA_2L_2 treatment protocol. We found five-year overall survival of 74% and event-free survival of 70%.
Conclusion: Although patients with NHL were reported as stage III-IV and histopatologically as Burkitt lymphoma in our clinic, the treatment results correlated with recent literatures.

4133 POSTER

Evaluation of stressors intensity in parents of children with leukemia

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Background: Childhood malignancies affects family members specially parents with stress and distress. Nurses can recognize stressors and provide effective interventions for these kinds of family problem. So a study is done with the Purpose of determination severity of psychological, social and related to child stressors in parents of children with leukemia And in comparison with each other.
Materials and Methods: Convenient sampling is done as a descriptive-analytical study. Parents (both) of 45 children suffering from leukemia filled out questionnaire. Questionnaire evaluated parents for social, psychological and related to child stressors. Data were analyzed by t test and spss. Validity & reliability of questionnaire was done by content validity and test re test.
Results: Based on scores delivered the most important stressors including:

A. Important related to child stressors were observing the child in pain for fathers (89.2%) and mothers (100%), observing intramuscular, intravenous and intratechal injections for diagnosis and treatment, fear of death of child and also think of separation during periodical hospitalization (96%) by mothers, and fear of child death (83.7%) and disease recurrence (87.8%) by fathers.
B. Important social stressors were: problem of drug unavailability for fathers (79.7%) and mothers (82.4%), lack of ability to provide life comfort for other children due to illness in this patient (77%) for mothers, and lack of ability to provide treatment and care expense (62.2%) for fathers.

C. Important psychological stressors were: Feeling of exhaustion and burn out in fathers (59.5%) and mothers (85.1%).
Results of t test showed psychological and Related to child stressors were statistically significant for mothers and fathers, but those of social stressors were not significant.
Conclusions: Results showed that parents will be severely stressful after diagnosis of leukemia in their children and this will be more sever when the child is in pain, receives chemotherapy injections, becomes hospitalized.
We think that nurses, physicians and other caregivers have to allocate more time to parents of leukemic children in order to recognize their current problems. Establishing societies are also essential for mental, psychological, and financial support.

4134 POSTER

Treatment of adolescents and young adults with T-cell acute lymphoblastic leukemia and lymphoblastic lymphoma according to the pediatric strategy for acute lymphoblastic leukemia – single center experience in Russia

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Background: The current treatment of T-cell lymphoblastic lymphoma (T-LBL) is based on the therapeutic strategy for acute lymphoblastic leukemia (ALL). Pediatric schedules based Berlin-Frankfurt-Munster protocol and adult Hyper-CVAD regimen with high doses of methotrexate are approaches that are mainly used. The purpose of this study was to compare the outcomes in adolescents and young adults (AYA) with T-LBL versus T-ALL treated by ALL-like regimen without high doses of methotrexate.
Materials and Methods: From May 1998 to July 2008, 17 (44%) patients (pts) with T-LBL and 23 (56%) pts with T-ALL (including 7 in the outcome of T-LBL) were enrolled. 7 pts with T-LBL have relapses after previously received from 1 to 7 (median – 4.5) schedules of B-NHL-like therapy. 16 (40%) pts were treated with the national protocols ALL-MB 91/2002 and 24 (60%) pts – ALL-BFM 90 or NHL-BFM 90 for non-B NHL. In ALL-MB 91/2002 protocols the pts receive four drug induction with dexametasone 6 mg/m^2 daily for 36 days, daunorubicin 45 mg/m^2 $\times$2, vincristine 2 mg weekly $\times$5 and and intrathecal (IT) cytarabine and IT methotrexate and IT prednisolone weekly $\times$5. Consolidation therapy included L-asparaginase in a constant dose of 10000 ME/m^2 weekly $\times$18 and 6-merkaptopurine 50 mg/m^2 (100%) daily and methotrexate 30 mg/m^2 (100%) weekly with weekly doses adjusted according to WBC count. Central nervous system (CNS) irradiation for T-LBL is performed only for pts with CNS involvement at diagnosis. Maintenance was carried out up to 24 months. The BFM protocol called for comparison as an effective standard therapy.
Results: Median age at time of presentation was 18.1 (range 15−42) years for T-LBL and 19.5 (15−36) years for T-ALL. All pts (100%) with T-LBL had advanced (III-IV) stages. The presenting sites of primary disease included mediastinal mass in 13 (81%) T-LBL vs. 12 (48%) T-ALL cases ($p = 0.034$). The bone marrow was involved (<25% blasts) in 5 (32%) pts with T-LBL. CNS involvements were found in 3 (19%) vs. 4 (16%) pts ($p > 0.05$) respectively. 15 (94%) pts with T-LBL are in complete response (CR) vs. 21 (88%) pts with T-ALL ($p > 0.05$). 6-years EFS was 75 vs. 67% ($p > 0.05$). 6-years OS was 81 and 79% ($p > 0.05$). The median follow-up was 4.5 years. The outcome did not depend from the treatment protocol.
Conclusion: The outcome of T-LBL and T-ALL is comparable for AYA. Previous failures of CHOP-like schedules haven't an absolute disadvantage prognosis for further ALL-like treatment.

4135 POSTER

The experience of seven Romanian pediatric oncologic centers in the medical care of acute myeloid leukemia patients

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Background: Children diagnosed with AML represent a small proportion of assisted oncologic pediatric patients.
Materials and Methods: Multicentric estimation of AML children diagnosed and treated at the Universitary Centers of Oradea, Craiova, Timisoara, Bucuresti, Targu Mures, Cluj and Constanta during the periods 1998–2002 and 2003–2007. Data about sex, age, date of diagnosis, FAB morphologic types, treatment protocols and outcomes were recorded.
Results: 43 children (67% boys and 32% girls) were diagnosed during the years 1998–2002: 2.3% were under 1 year age, 23% were 1−4 years old, 23% were 5−9 years old, 27% were 10−14 years old and 23% were 15−18 years old. In the following 5 years 39 children with AML were diagnosed (58% boys and 42% girls); distribution by age groups was 10.2% under 1 year, 25% of the age groups 1−4, 5−9 or 10−14, the rest of 12% of the age group 15−18. During the years 1998–2002 58% of children had FAB M0-M2 morphology, 23% FAB M3 morphology, 14% FAB M4-M5 morphology and 4, 6% had M6, M7 or undifferentiated morphology (other); during the years 2003–2007 the percent of children diagnosed with FAB M0-M2 and M3 morphology decreased to 41% and 13% and the percent of children diagnosed with M4-M5 and other morphology increased to 35.8% and 10.2%. The most used Protocol was BFM 93 (45 patients) followed by BFM 98 (21 patients); only 2 patients were treated with BFM 95 and 1 with BFM 90; others protocols were used in 4 patients and in 7 children the protocols were not mentioned or the children were not treated. Of 43 cases diagnosed in the first period, 20 deceased (46, 4% of cases) and of 39 patients diagnosed in the second period of time 22 deceased (56% of cases); 80% and 68% of deaths respectively were registered among the children with unfavorable FAB histology or among the untreated children.
Conclusions:
1. 82 children with AML were diagnosed in the last 10 years in 7 pediatric oncologic centers.
2. The higher number of deaths during 2003–2007 cannot be explained only by the differences in age groups distribution or by FAB subtypes.
3. Improvement of diagnosis, classification and of treatment modalities are needed for better results.
4. Finally, these data cannot be generalized for the whole country but emphasize the need of further multi-center collaborative prospective and retrospective studies as well as the need of diagnosis, treatment and supportive care optimization in order to improve our patients outcomes.

Nursing oncology

Oral presentations (Mon, 21 Sep, 11:00−12:30)
Telecare and lifestyle interventions

4150 ORAL

Is telephone follow-up by specialist nurses a cost effective approach?

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Background: This paper will report on the findings from an economic evaluation of traditional hospital follow-up versus telephone follow-up by specialist breast care nurses for patients treated for breast cancer in the United Kingdom (UK).
Materials and Methods: We conducted a cost minimisation analysis from a National Health Service (NHS) perspective using data from a randomised controlled trial that demonstrated equivalence between hospital and telephone follow-up in terms of psychological morbidity; 374 participants at low-moderate risk of recurrence were recruited to the study. The study was carried out at two hospitals in the North West of Engalnd. In a primary analysis we compared NHS resource use for routine follow-up (i.e. consultations, investigations and referrals) during a mean follow-up period of 24 months. Secondary analyses included patient and carer travel and productivity costs incurred and the NHS and personal social services costs of care in the minority of patients who developed a recurrence of their breast cancer.
Results: Participants in the telephone follow-up group had approximately 20% extra consultations (634 versus 524). Telephone consultations were of longer duration and conducted by senior nurses whereas hospital clinic