weeks. The 5-year actuarial disease-free and overall survivals were 91% and 95%, respectively (CI: 62%-98%).
Conclusion: Our study indicates that paediatric ENB is a chemo-sensitive tumour, thus support the role of a combined therapy including neoadjuvant chemotherapy, surgery and radiation therapy.

4112 POSTER

Identifying medical and psychosocial needs of teenagers and young adults with ependymoma

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Background: Teenagers and young adults (TYA) with cancer form a specific group of patients with different biological, clinical and social characteristics. We report the Royal Marsden Hospital experience treating TYA with ependymoma and aim to analyze the medical and psychosocial needs of this group.
Material and Methods: Twenty TYA (aged 13 to 24 years) were treated for ependymoma from 1971 to 2004 and are compared to 27 children (not infants) treated in the same period. Data regarding clinical presentation, outcome and need for ancillary services were gathered. Comparisions were made between TYA and children and according to department where treatment was delivered (Paediatrics vs. Neuro-Oncology). Institutional Review Board approval was obtained.
Results: Four out of 20 TYA had grade 3 ependymoma. Only 20% of TYA achieved gross-total resection (vs. 66.7% of children, $p = 0.003$), all of them received radiotherapy, and 5 of them received adjuvant chemotherapy. There were 7 relapses, all of them were local vs. 50% of metastatic relapses in children ($p = 0.02$). Five-year overall survival was 78% $\pm$ 9.8 for TYA *vs.* 71.6% $\pm$ 9.2 for children ($p = 0.368$) and 5-year progression-free survival was 63.6% $\pm$ 11.1 for TYA *vs.* 46.4% $\pm$ 9.9 for children ($p = 0.14$).
Average time from symptoms to diagnosis was 264.4 days for TYA *vs.* 87.1 for children ($p = 0.018$). Treatment was given in a paediatric unit in 30% of TYA and 100% of children. Only two TYA (10% vs. 25.9% for children) were enrolled in a clinical trial. None of the cases was enrolled in any adult clinical trial According to the unit where treatment was given (Paediatrics *vs.* Neuro-Oncology), patients were referred for psychosocial support in the following proportion: Psychology (44.8 *vs.* 25%), Physiotherapy (31 *vs.* 0%), Occupational Therapy (24.1 *vs.* 0%), Speech Therapy (13.8 *vs.* 0%) and Dietetics (34.5 *vs.* 12%).
Conclusions: Ependymoma in adolescents and young adults is an infrequent entity, with perhaps better outcome compared to children. In our experience, needs of Teenagers and Young Adults with ependymoma summarize current issues about treatment of TYA with cancer: need for dedicated multidisciplinary adolescent units, access to clinical trials (either adult or paediatric), delays in diagnosis and psychosocial support.

4113 POSTER

A prospective, multicentre trial of high-dose methotrexate/doxorubicin or cisplatin/doxorubicin for children and young adults with osteosarcoma – decision making analysisb

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Background: This prospective, multicentre trial was designed to compare two protocols: high-dose methotrexate+doxorubicin (MTX/DOXO) vs cis-platin+doxorubicin (cDDP/DOXO) in localized osteosarcoma.
Material and Methods: Between 1998–2005, 146 patients aged 4−24 years (mean 14 years) with non-metastatic operable high-grade primary osteosarcoma were assigned preoperatively to the MTX/DOXO regimen, or to the cDDP/DOXO regimen. After surgery, the regimen was continued, when histological response was below 5% of viable tumour cells, or was changed to VP-16+IFO in case of poor histological response. For statistical analysis, log rank test and chi^2 test were used, and the probabilities of events were included into clinical decision tree model.
Results: 126 patients fulfilled inclusion criteria. Before surgery, 25 of 51 patients (49%) in the MTX/DOXO group had disease progression in contrast to 2 of 75 patients (3%) in the cDDP/DOXO group ($P = 0.000$). Due to progression in the MTX/DOXO group, 22 patients received cDDP/DOXO and 1 patient – VP-16/IFO (with response). The rest of population underwent surgery. In clinical decision tree model, three group of patients we analysed: (1) responders-MTX/DOXO, (2) non-responders-MTX/DOXO) and (3) cDDP/DOXO. The proportion of good histological response was as follow: cDDP/DOXO (41%), responders-MTX/DOXO (43%), and non-responders-MTX/DOXO (28%). With a median follow-up of 80 months, there was a trend for higher overall survival in the cDDP/DOXO arm (85%), comparing to the responders-MTX/DOXO arm (77%) and the non-respondres-MTX/DOXO arm (68%); $P = 0.056$. Toxicity was manageable with different acute toxicity profiles.
Conclusion: Clinical and histological response to primary chemotherapy were identified as the most significant prognostic factors in localised osteosarcoma.

4114 POSTER

Influence of the GGH −401C>T and the RFC1 A(80)G polymorphism on methotrexate toxicity in children with osteosarcoma

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Background: The human gamma-glutamyl hydrolase (GGH) plays an important role in antifolate-resistance in tumour cells. The presence of the −401T allele in the promoter of the GGH gene causes increased gene expression in leukemic cell lines. G(80)A polymorphism has been described in the reduced folate carrier (RFC1) gene, which encodes the major methotrexate transporter. Children with acute lymphoblastic leukemia homozygous for A(80) had worse prognoses and higher levels of MTX than the other genotype groups. During this study, we examined the association of the GGH promoter polymorphism and the RFC1 G(80)A polymorphism with respect to toxicity of methorexate treatment in children with osteosarcoma.
Material and Methods: We examined the data of 571 methotrexate blocks administered to 72 patients treated with COSS 86 or 96 protocol between 1987 and 2004. From the medical records we examined the following parameters: the serum drug levels 6, 24, 36, 48 hours after methorexate infusion; the highest serum GPT, GGT and bilirubine values and the lowest number of granulocyte and serum protein levels in the first two weeks after the methotrexate treatment. The two polymorphisms were determined by a PCR-RFLP method using DNA extracted from peripheral blood.
Results: The incidence of grade IV. acute hepatotoxicity was less frequent ($p = 0.007$) in patients homozygous for the GGH −401T allele than in the group with −401CC or CT genotype. Serum protein was significantly lower ($p = 0.0005$) and the frequency of grade IV. acute hepatotoxicity was significantly higher ($p = 0.001$) in patients with RFC1 80AA or AG than in those homozygous for the G allele.
Conclusions: Patients homozygous for the GGH −401T allele had less hepatotoxicity compared to those with the −401CC or CT genotype. The presence of RFC1 80A allele resulted in more toxicity than the homozygous GG genotype. Our results indicate that certain gene polymorphisms should be considered for treatment dose individualization in the future.

4115 POSTER

Endocrine dysfunctions in children transplanted with TBI-based conditioning regimens for hematological malignancies: a retrospective analysisb

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Background: The progressively increasing number of long-term survivors after hematopoietic stem cell transplantation (HSCT) led researchers to focus on its late complications. Endocrine dysfunctions following HSCT are common and occur mostly in patients treated with Total Body Irradiation (TBI) as part of conditioning regimen. In this retrospective study, we evaluated incidence and severity of late endocrine dysfunction in a cohort of very long-term survivors.
Matherials and Methods: Fifty-one patients (32 females, 19 males) surviving at least 5 years after HSCT were included. Median age at HSCT was 8.5 years (range: 2−16.4). The median follow-up was 8 years (range 5−17). Primary diseases were acute lymphoblastic leukemia ($n = 32$), acute ($n = 15$) or chronic ($n = 2$) myeloid leukemia, or non-Hodgkin lymphoma ($n = 2$). Median time interval from diagnosis to HSCT was 1.2 years (range