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POSTER

Hodgkin disease in children – experience in Croatia

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In the past decade, considerable modifications in the management of Hodgkin's disease in children have resulted in a continuously rising rate of recovery. As the disease responds favorably to the use of cytostatic therapy and radiotherapy, attempts have been made to treat as many affected children as possible with the least possible rate of early and late side effects. Previous therapy is known to have been associated with the development of secondary malignancies in some of the successfully treated children.

Purpose: To describe the experience in the management of children with Hodgkin's disease in Croatia, staged and treated at a single institution.

Patients and Methods: During the 1990–2008 period, 68 children with Hodgkin's disease (36 male and 32 female) were treated at Department of Hematology and Oncology, University Department of Pediatrics, Zagreb University Hospital Center Zagreb Croatia. The patients were administered a combination of cytostatic therapy (OPPA, OEPA and COPP) and radiotherapy (involved field radiation). Patients were allocated to 3 treatment groups (TG) by disease stage: TG1, stages I and IIA, TG2, IIEA, IIB and IIA and TG3, stages IIEB, IIIB, IIIE and IV. All patients underwent initially 2 cycles of OPPA or OEPA. In TG1 no further chemotherapy was given, patients in TG2 and TG3 received additional 2 or 4 cycles of COPP. The distribution of the patients was: TG1, 24 = 35.3%, TG2, 26 = 38.2%, TG3, 18 = 26.5%. Radiotherapy was administered to the initially involved sites. Standard dosage was 20 Gy.

Results: Remission was achieved in all patients; in six patients with relapse of the disease, highly aggressive cytostatic therapy and radiotherapy was introduced, in four of them in combination with autologous bone marrow transplantation; 3 patients died, 65 patients are still alive in the first or the second remission. There were no severe side effects and no case of secondary malignancies in any of patients.

Conclusion: Combined modality therapy using risk-adapted low dose, involved field radiotherapy + chemotherapy is optimal treatment for the majority of children with Hodgkin's disease.

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POSTER

Review of children with Wilms tumor in Serbia – single center experience

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Background: Wilms tumor represents 7% of all malignancies in childhood, occurring most commonly around age of three years. Contemporary protocols ensure high remission rate and long term free survival in nearly 90% of patients.

Material and Methods: We present a study review of 30 patients with Wilms tumor, diagnosed from 1999 until 2009 in Department for hematology and oncology in University Children's Hospital, Belgrade. Age ranged from 4 up to 132 months, median 39 months. In our study group female patients represented 63% of children.

Results: Disease presented in majority of cases as one or combination of following symptoms: enlargement of abdomen (50%), abdominal pain (37%), fever (23%), macroscopic painless hematuria (17%), decreased oral intake (17%), constipation (10%), vomiting (7%), weight loss, malaise or diarrhea in 3% of patients. Duration of symptoms varied from 1 up to 90 days, median 6 days. Preoperative chemotherapy was administered in all children, mostly according to SIOP 93-01 protocol. Pulmonary metastasis were seen in 15%, while hepatic metastasis were diagnosed in 7.5% of patients. Single nephrectomy was performed in 77%; complete kidney removal from one side and partially from other side was done in 8%, while surgical approach as only partially resection of infiltrated kidney was done in 15% of patients. Postoperative complications were noticed in 18% of children, ileus in 11% and Meckel's diverticulum in 7%. Veno-occlusive hepatic disease was diagnosed in 23% of children. According to histopathology, stage 1 was seen in 31%, stage 2 in 21%, as well as stage 3, stage 4 in 17% and stage 5 in 10% of study group. In a group of low and intermediate risk 81% of patients were stratified, while 19% of children were high risk. Radiotherapy was administered in 27% of children. Therapy complications were seen in 23%, as follows: hepatitis B in 11%, chronic kidney disease, neuropathy and tubulopathy in 4% per se. Remission was accomplished in 78% of patients, relapse was diagnosed in 11%, while fatal outcome was noticed in 15% of children. Stem cell transplantation was performed in one child, after relapse of disease.

Conclusion: Nowadays, high remission rate and long term free survival are achieved in nearly 90% of patients by modern protocol strategies. Without formal participation in current protocol event free survival in our study group

was 78%, but we presume that better results could be accomplished by becoming a protocol member.

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POSTER

Effective psychological supporting strategies for the children with brain tumours and their families

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Background: The psychological consequences in children with brain tumors depend not only on physical well-being and neuropsychological and neurological effect of disease and treatment. The main etiological factor of possible psychological changes is the psychological state of the parents and their copying strategies.

Materials and Methods: In the group of children with the brain tumors (N=40, age 6–12 years old) we investigated the anxiety level, self-estimation, body image, aggressiveness and satisfaction with the relations. We used CAT, self-esteem scales, projective drawings. We compared the level of undesirable psychological consequences of disease and treatment experience with the parent-child attitude (Varga-Stolin test) and anxiety level in the mothers of these children.

Results: The high level of anxiety in children significantly correlates with the high level of anxiety in their mothers who stay permanently in the hospital with their children during treatment course. The cooperative attitude isn't significantly better for the psychological well-being in comparison with the symbiotic attitude. Not-effective copying strategies in mothers lead to the similar in children: fixation, autism, anxious-aggressive behavior. After the body-oriented psychotherapy for the mothers who reported the highest level of anxiety (N=10) the psychological state in children became better in 80% of the cases.

Conclusions: The psychological help should be provided for the family of children with brain tumors and other types of cancer. This work influences not only the psychological state of parents, but secondary effects the psychological well-being of children with cancer disease and quality of their life in general.

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POSTER

Tolerability of cyclophosphamide and vinorelbine maintenance therapy for rhabdomyosarcoma in a Scottish paediatric centre

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Background: Aim of the study is to assess tolerability of cyclophosphamide and vinorelbine in children undergoing maintenance treatment for high risk (HR) or very high risk (VHR) rhabdomyosarcoma.

Methods: A retrospective case note review was undertaken of patients receiving treatment for HR/VHR rhabdomyosarcoma with vinorelbine and cyclophosphamide.

Results: Between 2003 and 2008, 8 patients with rhabdomyosarcoma in HR/VHR groups, ages 22 months to 12 years were identified.

Primary sites affected included middle ear, orbit, nasopharynx, infratemporal fossa, hemithorax and genitourinary system. Histologically 6 were alveolar and 2 embryonal. Only 2 had metastatic disease but none had bone marrow infiltration. All patients had been treated with chemotherapy followed by radiotherapy prior to starting maintenance chemotherapy. This involved 6x4 week cycles of continuous cyclophosphamide (25 mg/m²) and 3x weekly doses of vinorelbine (25 mg/m²) per cycle as per EpSSG protocol. All 8 patients completed 6 cycles of treatment but only 2 patients tolerated 100% of planned maintenance treatment. All patients tolerated cycle 1 of vinorelbine at full dose however 6 patients required dose modifications and omissions in subsequent cycles. An average of 14.33 doses of vinorelbine out of a possible 18 were administered (range 9.66–18).

Out of a potential 24 continuous weeks of cyclophosphamide, patients received on average 19.6 weeks (range 16–24). Reasons for dose omission and reduction were due to haematological toxicity, neutropenia in all cases (<1x10⁹/l) and thrombocytopenia (80x10⁹/l) in 1.

Conclusion: All patients completed 6 cycles of combination maintenance therapy and all completed the first cycle at full dose. Only 2 of the patients completed all 6 cycles at full dose. Dose modifications in the other 6 patients were required due to haematological toxicity, especially neutropenia. We have demonstrated that in our patient cohort, the majority do not tolerate full dose maintenance treatment immediately following high dose chemotherapy and radiotherapy. We speculate this may be due to prolonged myelosuppression with no time for bone marrow recovery after intensive chemotherapy and radiotherapy. A larger international multicentre

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

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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%), ≤ 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 ≤ 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.

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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 6 courses. ICE consisted of Ifosphamide 2 mg/m² day 1 to day 5, Etoposide 100 mg/m² day 1 to day 5 & Cisplatin 20 mg/m² 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.

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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 proliferation 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±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 LSA₂L₂ 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 histopathologically as Burkitt lymphoma in our clinic, the treatment results correlated with recent literatures.

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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:

- Important related to child stressors were observing the child in pain for fathers (89.2%) and mothers (100%), observing intramuscular, intravenous and intratecal 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.
- 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.