(100 mg/m²/day for 5 days) and two cycles of the combination ifosfamide (2 gr/m²/day for 5 days), Doxorubicin (40 mg/m²/day for 2 days), Vincristine (1.5 mg/m²). Resection of a complete necrotic lesion at the fourth hepatic segment was subsequently performed. Treatment was completed with high dose association of Melphalan (200 mg/M²) and Vincristine (4 mg/M²) followed by autologous bone marrow transplantation (BMT). After 13 years since WT diagnosis and 11 years after BMT the patient presented a right non tender, homogeneous and mobile parotideal mass. After the total parotidectomy the diagnosis was consistent with a low-grade mucoepidermoidal carcinoma. In the National WT Study Group review regarding 43 SMNs out of 5278 patients enrolled between 1969 and 1991 the relevant risk factor for developing a SMN were radiation therapy (RT), the association of Doxo-rubicin and RT and utilization of chemotherapy for the treatment of the relapse. All these risk factors were present in the only reported case of parotideal carcinoma in these series. In the SIOP survey RT was related to secondary bone cancer and the use of epipodophyllotoxin with leukemia occurrence. On these basis in our patient a clear pathogenetic mechanism is lacking, then we can also attribute the secondary parotid carcinoma simply to the chance. Physician need to be aware that even unusual SMNs, can develop also in subjects that for their primary malignancy and related treatment are at low risk.

4. AN ANALYSIS OF THE DOSES CALCULATED AND MEASURED IN-VIVO DURING TOTAL BODY IRRADIATION

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Purpose: The aim of this work was to estimate the error in dose calculations, to check the agreement between the measured and calculated doses and to analyse dose discrepancies in the group of thirty patients undergoing total body irradiation.

Method: A group of thirty consecutive patients, children aged from 5 to 12 years, was taken for dose comparison. A combination of lateral and anterior - posterior fields with electron boost was used in eight fractions and on four consecutive days. Cobalt unit was used as a source of radiation. Lung shields were used at two anterior-posterior fields. Compensators were attached at the neck, head and legs. Doses were preliminarily calculated and then measured in-vivo by thermoluminescent (TLD) and semiconductor (SEM) detectors attached to the body in ten representative transverse cross-sections. Calculations and measurements were carried out for the beam at the body entry and exit. The error in dose calculations was estimated for each dosimetrical point. A total dose of 12,6 Gy was prescribed in the body midline on the central beam axis (CAX). A dose of 8.2 Gy was delivered from six lateral fields and a dose of 4,4 Gy from two AP/PA fields. In the lungs dose was below 10 Gy. Lateral fields were set at a source to skin distance (SSD) of 305 cm with the dose rate to midline of 5,9 cGy/min and AP/PA fields were set at 210 cm with 11,5 cGy/min, respectively. A fractional dose specified on CAX and midline was 2.5 Gy during all anterior-posterior fields (from each side), 1.5 Gy (0.75 Gy from each side) during four lateral fields, and 1.1 Gy (0.55 Gy from each side) during two lateral fields.

Results: The error in the preliminary dose calculations was determined by a total differential method, taking into account of the accuracy of determining the following parameters: SSD, body thickness and contour, the thickness of compensators, lung shields, filter shape, lung dimensions and body density, where applicable. Calculations were done separately for each cross-section and for the beam entry and exit. The values of this error were rounded up to 3% for CAX, from 5% to 10% for head, neck, shoulders, abdomen, elbows, wrist, knee and feet and increased to 15% for lung at AP/PA fields. Per cent deviations for hole group of patients for lateral and AP/PA fields (on entry
and exit) were below 10% (TLD and SEM detectors) with the exceptions for the neck at lateral and for the lungs at AP/PA fields where the errors exceeded 10%.

Conclusions: For the group of patients the per cent deviations exceeded 10% for the neck exit in lateral fields and for the lung exit in anterior-posterior fields. Standard deviations exceeded 10% at the neck and lung exits in lateral fields and at the lung exit in anterior-posterior fields.

5. SEDIMENTATION AS EFFECTIVE METHOD OF PRELIMINARY ISOLATION OF STEM CELLS FROM CORD BLOOD


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Cord blood is a rich source of primitive hematopoietic stem cells. In clinical hematology it is transplanted instead of bone marrow or peripheral blood stem cells. The Institute of Hematology and Blood Transfusion in Warsaw has had a Cord Blood Bank (WACB) since 1997. WACB collaborates with Eurocord Transplant Group and with Bone Marrow Donors Worldwide transferring data on frozen CB intended for transplantation. During 1997–2000, a total of 159 unrelated and 29 related cord blood units were collected. More than 70% of transplants of CB were performed in pediatric recipients it is necessary to reduce its volume of storage of CB units. Separation techniques reduce sample volume to ±20 ml. Sedimentation methods reduce the number of RBC to be infused. RBC depletion reduces the risk of incompatible reaction. Sedimentation reduces side-effects of the DMSO (dimethyl sulfoxide) cytotoxicity (DMSO volume is reduced to 4 ml).

The aim of our study was to evaluate methods of isolating leukocytes from cord blood within a closed system. Two methods of isolation have been tested: 6% hydroxyethyl starch in 0,9% NaCl and 3% gelatin in 0,9% NaCl (Gelafundine, Braun). Centrifugation and sedimentation methods have been used. The final volume of cord blood was 20 ml for each unit. The best results were obtained for sedimentation. With 3% gelatin sedimentation 75,1% WBC and 81,3% CD34+ were recovered, while the waste of RBC was 97,2%; with 6% HES sedimentation the results were: 65%; 90,3%, and 80,5% respectively. The results of our centrifugation methods revealed a great loss of progenitor cells (approx. 40%). 6% HES and 3% gelatin are approved for clinical use, therefore sedimentation methods based on these media are safe for recipients. Furthermore, the use of closed system recommended by Eurocord Transplant, prevents bacterial contamination.

6. CHIMERISM-DIRECTED ADOPTIVE IMMUNOTHERAPY IN PREVENTION AND/OR TREATMENT OF POST-TRANSPLANT RELAPSE OF LEUKEMIA IN CHILDHOOD

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Purpose: We present the role of detailed and frequent monitoring of hematopoietic chimerism in prediction of post-transplant clinical outcome and our initial experience with adoptive immunotherapy (AI) in prevention and treatment of relapse in children after allogeneic hematopoietic stem cell transplantation (HSCT) for leukemia.

Materials and methods: Between 1/1997 and 12/2000 we performed a total of 46 unmanipulated allogeneic HSCT from HLA-identical siblings (MSD;23) or matched unrelated donors (MUD;23) in 43 consecutive children with hematological malignancies (ALL 16, AML 15, CML 5, MDS 6, JMML 3, CMML 1) with a median age of 10,5 years. We have analyzed hematopoietic chimerism in peripheral blood samples using polymerase chain reaction (PCR) of variable number