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ORAL

**Post-treatment parenthood in survivors after Hodgkin lymphoma**

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**Background:** Post-treatment parenthood (PtP) is an important dimension of the treatment and quality of life in young patients with Hodgkin's lymphoma (HL).

**Methods:** In 2002 276 males and 221 females treated for HL at the Norwegian Radium Hospital from 1971–99 completed a questionnaire in men assessing their attempts and success to achieve PtP and in females recording the number of completed pregnancies. 3 principal therapeutic groups were constructed: 1: Radiotherapy (RT) only (Rad), 2: Chemotherapy only (Chem), 3: RT and chemotherapy in combination (RaCh). Chemotherapy was divided in 3 groups (low, medium, high) according to the regimens' expected gonadotoxicity (GT). RT was subgrouped depending on whether infradiaphragmatic RT was given or not. Data were analysed by Kaplan-Meier and log rank tests using birth of 1. child post-treatment as primary endpoint.

**Results:** Of 121 males who attempted PtP, 84 were successful and had 1–5 children after their treatment. 70 females achieved PtP (1–4 children). 18 of the males had used assisted reproduction techniques (ARTs), 9 of them becoming a father. 3 of the females had used ARTs, one of them achieving pregnancy.

With a mean observation time of 16 years successful attempts of PtP were recorded in 85% (29/34) of the males in the Rad group, in 67% (10/15) in the Chem group and in 63% (45/72) in the RaCh group, with significant difference between the success rate in the Rad group compared to the two other groups ( $p=0.04$  vs Chem,  $p=0.02$  vs RaCh). In the females there was a similar significant difference between the Rad group and the two other groups ( $p=0.01$  vs Chem,  $p=0.02$  vs RaCh).

For both the males and the females there were no differences in PtP between the two subgroups of RT. In males there was a significant difference in PtP between all three groups of chemotherapy, with highest success rate in the low GT group, and the lowest success rate in the group with high GT. In females there was a significant difference in achieving PtP between the low and the high GT group.

**Conclusions:** In this study 69% of males who attempted PtP were successful with only 11% of them using ARTs. The success rate for female patients seems lower, though the exact rate of success is not yet available. In both males and females the chance of PtP was significantly highest in the Rad group and the low GT group.

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**Ovarian toxicity after high dose chemotherapy without total body irradiation and without busulfan**

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Given the known gonadic late effects of total body irradiation (TBI) in children, new conditioning regimens have been built without TBI. High doses (HD) of alkylating agents, have been used to avoid the side effects of TBI, particularly on endocrine functions. In girls, few conventional chemotherapies are known to produce ovarian toxicity. Conversely, in childhood, HD Busulfan even in prepubertal period is a major cause of ovarian failure. We report here the analysis of ovarian function in girls previously treated in our department with HD chemotherapy containing neither Busulfan nor TBI before autologous HSC for malignant tumors. These girls were minimum 13 year (Y) old at the time of ovarian evaluation and had survived over 6 months post transplant. Sixty two girls received different conventional chemotherapies before entering the consolidation phase for several types of pediatric tumors. Several HDC regimens have been used: containing:

1. HD Melphalan
2. HD cyclophosphamide
3. HD Thiotepa
4. HD Carboplatine.

The cumulative doses of drugs as well as previous radiotherapeutic and surgical damages have been studied for each case. Their median age at the transplant was 13 Y (2–32 Y): 32 were prepubertal and 30 had regular menses. The median time lapse post transplant was 5 Y.

**Results:** only 54 patients were analysed since 8 girls had a known ovarian failure secondary to castration. Among them, 31 had normal development and 23 had amenorrhea (17 secondary). At the last evaluation their median age was 18.5 Y (13–33 Y). Univariate analysis showed that the patient's age, the use of Thiotepa in the HDC, the use of Ifosfamide in the conventional chemotherapy, and the sarcoma's group

were significant risk factors of ovarian failure. Conversely, BCNU/CCNU, the use of HD Melphalan and the neuroblastoma group demonstrated few gonadal damage. Obviously age at transplant and diagnosis are linked ( $p=0.0001$ ). After logistic regression: previous exposition to Ifosfamide, HD Thiotepa and the age at transplant appeared as 3 independent risk factors of ovarian failure for girls transplanted after conditioning without Busulfan or TBI. The incidence of ovarian toxicity for girls treated without TBI and without Busulfan is 42%. Preservation of fertility by ovarian cryopreservation, before treatment, must be considered in all patients at high risk of infertility: the girls transplanted after 13 Y of age and previously treated with HD alkylating agents, especially Thiotepa.

## Oral presentations (Mon, 31 Oct, 9.15–11.15)

### Leukemias and lymphomas in adults and children

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**Mucosa associated lymphoid tissue (MALT) lymphoma: excellent outcome in 130 patients treated with radiation alone**

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**Introduction:** Mucosal associated lymphoid tissue (MALT) lymphoma is the 3<sup>rd</sup> most common non-Hodgkin's lymphoma. It often presents in an early stage and may involve a variety of extra-nodal sites. We reviewed the long-term experience of treating MALT patients with radiation alone (RT) at a single cancer center.

**Methods:** All 130 patients with MALT lymphoma that were treated with RT alone in our center between 1985 and 2004 were identified. All cases were pathologically confirmed. We retrospectively reviewed the clinical data and treatment results.

**Results:** There were 76 (58%) men and 54 (42%) women with a median age of 61 years (range 24–90 years). The stomach was the most common primary site of involvement with 76 (58%) cases. Other primary sites of involvement included orbital adnexa (20 cases, 15%), skin (7, 5%), salivary gland (6, 5%), breast (5, 4%), oral sites (4, 3%), thyroid (3, 2%), subcutaneous tissue (2), lung (2), meninges (2); other sites were involved in 3 patients. 110 patients were presented in stage I, 6 in stage II, 9 patients were in stage IV and 5 patients presented following relapse. All patients were treated to the involved field with a median dose of 30 Gy (range 21–43 Gy).

Median follow up was 36 months (range 6–205). 5-year freedom-from-treatment failure (FFTF) with all events included was 91%, 5-year overall survival was 96% and 5-year cause-specific survival was 99%. Only one patient remained refractory to RT, 6 relapsed in another extra nodal site, 2 transformed to diffuse large B-cell lymphoma and one patient relapsed in an irradiated site. Patients with gastric MALT had a better FFTF compared to those with non-gastric sites ( $p<0.04$ ) and patients with early-stage (I-II) had better FFTF than those with relapsed or advanced stage ( $p<0.001$ ). No acute side effects (grade 3 or 4) were recorded, and no significant long-term side effects were detected thus far (maximal follow of 17 years).

**Conclusions:** This is the largest reported series of MALT lymphoma patients treated with RT alone. The outcome of these patients using low-dose RT and limited fields is excellent and safe. RT alone should be considered the treatment of choice for most non-gastric sites (excluding lung) and for all patients with gastric MALT lymphoma that have exhausted their antibiotic option or are unlikely to respond to it.

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**Primary mediastinal large B-cell lymphoma (PMLBL) in children/adolescents; data of European and American groups**

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**Introduction:** PMLBL is a rare sub-type of non-Hodgkin's lymphoma (NHL), especially in paediatric patients (pts) for whom optimal treatment is still to be established.

**Methods:** We identified the pts with PMLBL in the French LMB89, the international French-American-British FAB LMB96, the German-Austrian-Swiss BFM 86–90–95 and the Italian AEIOP LNH 92–97 databases, covering periods between 1984 and 2003. Treatment regimen was either the LMB or the B-BFM strategy for mature B-cell NHL. Radiotherapy was not part of the first line strategy