As the number of survivors of young female Hodgkin's lymphoma (HL) increases, it is becoming more common to manage the pregnancies of women who have a history of exposure to chemotherapies and radiation therapy. Many patients and clinicians are worried that pregnancy after the diagnosis of HL may increase the risk of relapse, despite a lack of empirical evidence to support such concerns.
In the present study we included 77 women who received a diagnosis of HL between 2006 and 2015 and who were younger than 40 years of age and were in complete remission and alive without relapse > 2 years after treatment.
Among the 77 women with HL, 37 (48%) were nulliparous throughout follow-up, 32 (42%) were parous but had no pregnancies during follow-up, and 8 (10%) had a pregnancy during follow-up.
13 (17%) tried to become pregnant; 5/13 (39%) without success; 8/13 (61%) women became pregnant with the birth of eight healthy children. The overall pregnancy rate was 10%. The median time from the end of the therapy to pregnancy was 50 months (range 25–72 months) and the cumulative incidence of pregnancy at 70 months was 39% Median age at pregnancy was 27 years (range 20–37 years).
In total, 2 relapses occurred during follow-up: none occurred in woman with a recent pregnancy Women exposed to a recent pregnancy had a relapse rate lower than that of women without exposure, although this difference was not statistically significant.
Conclusion: We found no evidence of significant impairment of the fertility of female HL long term survivors and no evidence that a pregnancy increases the relapse rate among women whose HL is in remission. Survivors of HL need to consider a range of factors when deciding about future reproduction.

P055 (0096) HEALTH-RELATED QUALITY OF LIFE (HRQL) TRAJECTORIES DURING TREATMENT FOR ADVANCED STAGE PEDIATRIC HODGKIN LYMPHOMA (HL)

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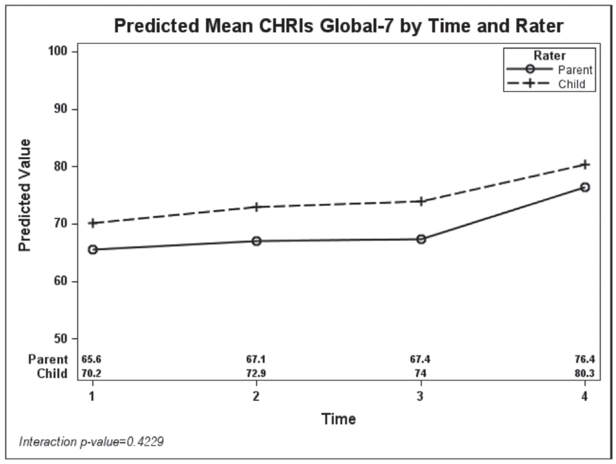
Background: The treatment of advanced stage HL typically includes dose-dense chemotherapy with or without involved field radiation. However, little is known about the HRQL of pediatric patients during initial treatment. We describe the HRQL trajectory over time by child and parent-proxy rater and examine baseline patient characteristics associated with the trajectory.
Methods: Children and adolescents, ages 5–17.9 years newly diagnosed with advanced stage HL and enrolled in Children's Oncology Group AHOD 1331, and their parents were co-enrolled in an embedded study to assess HRQL (n = 310). Children (age ≥11 years) and parent proxies (of children 5–17.9 years) reported on the child's global HRQL using the Child Health Rating Inventories (CHRIs) at four times: (1) baseline, (2) cycle 2, (3) cycle 5, and (4) end of therapy, approximately 6–7 months following initial diagnosis. The 7-item CHRIs-Global yields scores that range from 0–100, with higher scores indicating better HRQL. A repeated measures linear regression model was fit with categorical time (reference, baseline), rater, child race, ethnicity, and continuous age. An interaction of rater and time was tested and predicted means were plotted.
Results: 97% of age-eligible patients and parents completed baseline HRQL assessments with 93% completing planned follow-ups. Median child age was 15.5 years (q1 = 5.4, q3 = 18.9) and 50.3% were female. Most children were white (76.1%) and non-Hispanic (82.6%). There was no significant interaction between rater and time (Figure), so this was subsequently excluded from the model. Scores improved slightly at time 2 (β=2.5, 95%CI = 0.3, 4.6) and 3 (β=2.8, 95%CI = 0.3, 5.3) compared to baseline; larger improvements were seen by time 4 (β=10.6, 95%CI = 7.9, 13.3) after completion of therapy. Children reported higher HRQL than their parent proxies (β=5.6, 95%CI = 3.9, 7.2), males had higher HRQL than females (β=4.6, 95%CI = 1.0, 8.3), and older age was associated with lower HRQL (β = −0.8, 95%CI = −1.5, −0.1). There was no significant effect of race or ethnicity.
Conclusions: Completion rates of HRQL were high across all time periods and for both raters. HRQL, impaired at baseline, likely from the disease process, improved slightly during treatment, with larger improvements by the end of initial therapy. Future research will examine how clinical and treatment factors impact the HRQL trajectory.



P056 (0097) COGNITIVE DYSFUNCTION AFTER TREATMENT FOR HODGKIN LYMPHOMA

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Introduction: Using up-to-date methods of clinical investigation and risk and response adapted therapy, 80–85% of patients with Hodgkin-lymphoma (HL) show long-term survival and recovery. However, the long-term side effects associated with the treatment become more prominent. One such well-known side effect is cognitive dysfunction that appears in HL patients after chemotherapy. During our work we aimed at measuring cognitive dysfunction in our HL patients, looking for correlations between the patients and their disease and the factors involved in the treatment.
Materials and Methods: We carried out a computer assisted assessment (Cambridge Neuropsychological Test Automated Battery-CANTAB) of cognitive dysfunction in 118 patients treated at the Department of Haematology. We examined the domains of visual memory, functions of attention, working memory and planning. We regarded as having reduced cognitive function patients who performed worse than the normal population by 1.5 standard deviation or if the results of at least one test was already positive.
Results: Median mean age of 64 females and 54 males at diagnosis was 29 (13–74), and 41 (21–81) years at completion of the CANTAB investigation; this examination took place 11 years (0.5- 44) after diagnosis. 52.5% of all patients examined showed cognitive decay. In 35% (42/118) of patients it was attention that suffered, working memory and planning were damaged in 25%, (30/118) while visual memory was affected in 22% (26/118 patients). All three functions showed significant correlation with age at diagnosis and at the time of the examination A close correlation was found between attention and inactive employment and radiation therapy on the one hand and another correlation between working memory and planning and disability pensioner and inactive status on the other. Visual memory showed a close correlation with disability pension and inactive employment status and the effects of persistent drug use on the central nervous system.
Conclusions: Our results draw attention to the fact that, like with other malignant diseases, cognitive decay is a real problem in patients with HL. In our patients damage to the attention function was the most detectable. Our investigation suggests that patients with inactive employment status require enhanced attention. Their cognitive function and, through that, their quality of life can be improved by their retun to work if possible or by the use of cognitive therapy.

P057 (0108) COGNITIVE IMPAIRMENTS IN PATIENTS WITH HODGKIN'S LYMPHOMA

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Introduction: Treatment protocols for Hodgkin's lymphoma patients contain severe and multiple courses of chemotherapy and medical manipulations which can be a source of neurological, mental and psychological disturbances. In particular neurocognitive impairments can occur during treatment period and early stages of remission. Subjective complaints confirm that HL survivors lower cognitive functioning compared to healthy subjects, however qualitative objective research are rare.
Objectives: Research cognitive functioning of HL patients by BACS («Brief Assessment of Cognition in Schizophrenia») and analysis the specifics of cognitive functioning of patients with HL to develop prospective psychosocial rehabilitation programs.
Methods: Patients with HL (N = 22, 12 females, mean age 32 y.) were observed. The procedure of examination included: pathopsychological examination, assessment patients with BACS. Patients were assessed with: PANNS, scales evaluating test execution strategies (from TOL-DX) and expert scales (from WCST).
Results: Qualitative analysis of pilot research stage showed that: 20% of patients have difficulties in performing the subtests «Verbal Memory», «Digit Sequencing» (working memory) and «Verbal Fluency» (BACS). 35% of patients were observed decrease in the «Symbol Coding» subtest scores (visual-motor coordination). 10% of patients have problems in performing the subtest «Tower of London» (problem-solving skills). Only about 50% of patients managed with the task «Proverbs» successfully and with less than 75% with the task «Similarity». 34% percent of patients almost cannot solve the task «Exclusion of objects». BACS (T-Scores: average mean, st.dev, min and max value were analysed with SPSS).
Conclusions: It is supposed that patients with HL have partial cognitive dysfunction as a side effect of chemotherapy and distress (anxiety, depression, PTSD etc.). They have impairments in abstract thought, especially problems with definition of figurative sense and the decrease in the level of making general conclusions. Although it is difficult connect such cognitive decline to chemotherapy or distress - psychosocial interventions can be beneficial to adopt patients to somatic/psychological changes (fatigue, depression, self-esteem, professional and social isolation) and improve their quality of life. Further research data can be used to develop neuropsychological cognitive rehabilitation for patients with evident cognitive deficit.

P058 (0109) FERTILITY IN HODGKIN'S LYMPHOMA PATIENTS AFTER INITIAL THERAPY AT SANTA CASA DE SÃO PAULO MEDICAL SCHOOL

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Santa Casa de Misericórdia de São Paulo

Introduction: The most frequently first line protocol for Hodgkin's lymphoma (HL) is ABVD. This protocol is considered to be highly effective and has a safety profile because of lower morbidity and toxicity. Another protocol option is BEACOPP, a more intensive regimen, usually used for advanced stage disease. In both regimens, there are late drug-related side effects such as secondary neoplasms, cardiovascular diseases and infertility. The objective of this study is to evaluate fertility after first line therapy in patients with HL followed at Santa Casa de São Paulo. We also aim to describe this cohort sociodemographic characteristics.
Methods: This is a prospective study in which data were collected from medical chart and further interviews regarding fertility was performed.
Results: We interviewed 41 patients diagnosed with HL from between January 1990 and July 2016 that have completed treatment until August 2016. In this group, the mean age was 32 years old; 39% were caucasian; 51.2% were married and 56.1% had completed high school education. 47% of these patients waged 2–4 minimum-salary income monthly, data with no statistical significance in fertility rates.
Regarding HL, 87.8% were nodular sclerosis subtype, 53.8% were stage I-II and 80% have been submitted to ABVD protocol as first-line therapy. Almost half of patients (51%) had no children; 34.1% of patients had sexual intercourse without contraceptive methods in order to become pregnant; and 71% of those who intended to become pregnant had children.
Fertility analysis of these HL patients demonstrate rate of 0.97 child/woman, lower than data in the literature. Although, 71.4% of the women who had sexual intercourse with intention of becoming pregnant without the use of contraceptives were successful. The difference in fertility rate may be due to emotional issues that led to a lower number of women wishing to become pregnant after treatment, or due to a reduction of the fertile period because of HL treatment time, whereas treatment did not appear to have an impact on fertility.
Conclusion: HL treatment on female fertility still bring significant morbidity. Studies to assess the fertility of this population are still needed as well as biological markers.

P059 (0114) AA AMYLOIDOSIS CAUSING NEPHROTIC SYNDROME IN TWO PATIENTS WITH HODGKIN LYMPHOMA

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Background: The incidence of nephrotic syndrome in Hodgkin lymphoma (HL) is less than 1%. The principal glomerular pathology is minimal change and systemic AA amyloidosis associated with HL is exceptionally rare. Here we describe two patients with HL and AA amyloidosis. Case -1. A 24-year-old male with an unremarkable past medical history was admitted because of fever, edema, weight loss and fatigue. Nephrotic range proteinuria was detected (9.7 g/day). Conglomerates of infradiaphragmatic lymph nodes were seen on imaging. Renal biopsy showed glomerular AA amyloid deposition and core-needle biopsy was consistent with HL. He was considered to have stage IIB disease and ABVD was started. After the first cycle a critical condition with generalized gross edema developed and was treated with diuretics and albumin infusions. After 6 cycles of ABVD he achieved CR. Colchicine and an angiotensin converting enzyme (ACE) inhibitor were initiated after chemotherapy. Nine years and 3 months off therapy he is well and no recurrence of proteinuria or HL has been noted. Case-2. A 31-year-old male was diagnosed with stage IIIB HL of the mixed cellularity type. CR was obtained following 8 ABVD cycles. After 6 years he experienced HL relapse considered as stage IIIB again with concomitant nephrotic range proteinuria (9.3 g/day). Bone marrow biopsy revealed AA amyloid deposits in blood vessel walls. He received 2 cycles of platinum based salvage therapy followed by Dexa-BEAM for stem cell mobilization during which he developed septic shock and admitted to an intensive care unit. Colchicine and an ACE inhibitor were initiated after chemotherapy. He was considered too fragile for transplantation and was followed without therapy. Currently 10 years since off therapy he remained in CR although proteinuria continues during follow-up evaluations. Conclusions. The timing of presentation of AA amyloidosis in respect of HL varies in literature. AA amyloidosis was detected during the first presentation in one patient and during HL relapse in the other. Selective serious albuminuria with normal renal function was the typical manifestation in both patients. Risk of serious complications during therapy (septic shock and development of anasarca in our patients) might be increased for HL patients with AA amyloidosis. Both patients achieved long-lasting CRs and reversal of proteinuria following HL remission occurred in one of the patients.

P060 (0122) THE RECIPROCAL RELATION BETWEEN CANCER-RELATED FATIGUE AND PHYSICAL AND PSYCHOSOCIAL FUNCTIONING IN SURVIVORS OF HODGKIN LYMPHOMA

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Background: Cancer-related fatigue (CRF) is among the most distressing symptoms reported by cancer survivors. It often persists for years after treatment, compromising the quality of life (QoL) of survivors. There is some evidence for a correlation between CRF and functional health (FH) based on cross-sectional data. The aim of this study is to investigate the directional effects and the complex interplay between CRF and FH in survivors of Hodgkin lymphoma (HL) using longitudinal data.
Methods: Data of N = 3595 survivors from year 1 to year 5 after the end of treatment of the fifth study generation (HD13–15) of the German Hodgkin Study Group (GHSG) was analysed. Bivariate latent curve models with structured residuals (LCM-SR, Figure 1) were utilized to simultaneously model how the reciprocal relation between the two