Comparing the efficacy of low-dose radiotherapy in patients with aggressive and indolent lymphomas

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Purpose or Objective: Low-dose radiotherapy (LDRT) is a highly effective treatment in indolent non-Hodgkin lymphomas (NHLs). However, a reduced efficacy in aggressive lymphomas has never been demonstrated. We aimed to assess the effect of histologic type on disease response to LDRT.

Material and Methods: Data from a clinical phase-II trial using LDRT for palliation in diffuse large B-cell lymphoma (DLBCL) patients were compared with clinical outcome of patients with follicular lymphoma (FL), marginal zone lymphoma (MZ), and mycosis fungoides (MF) which were treated with LDRT at our Institution in the same period. LDRT consisted of 4 Gy in 2 fractions on symptomatic areas only for both DLBCL and indolent NHLs. Bulky disease was defined as > 5 cm in maximum diameter. Chemoresistance was defined as the failure of chemo to achieve a complete or partial response, or as disease relapse after a complete response. Clinical response was assessed 21 days after LDRT, and was defined as reduction > 50% of maximum diameter of the radiated lesions. Response evaluation was performed with CT-scan or clinical exam for palpable lesion. Toxicity was scored using the CTCAE v3.0.

Results: In all, 35 patients were evaluated. Sixteen were male; histologies were 17 DLBCL, 8 FL, 6 MZ, and 4 MF. Characteristics were generally balanced between the two groups. However, DLBCL patients were more likely to have bulky disease and chemoresistance. Median follow up was 7 months (range, 1 - 49 months). No significant difference was noted concerning overall response rate between DLBCL and indolent NHLs (overall response rate was 70% (12/17) and 83% (15/18) for patients with aggressive and indolent forms, respectively; p = 0.39), but indolent forms were associated with a higher rate of complete response (complete response rate was 61% (11/18) and 35% (6/17) for patients with indolent and aggressive NHL, respectively; p = 0.09). Only 1 case of toxicity was noted (grade 2 nausea). The median duration of response was 7 months (range, 1 - 35 months). Among responders, only 2 patients progressed within the radiated field at the time of last follow-up visit.

Conclusion: Efficacy of LDRT for DLBCL and indolent NHL patients resulted comparable in terms of overall response rate. Complete response rate was higher in the indolent NHL population than in the subset of DLBCL patients included in the phase II trial.

Second malignancies after TBI in AHCT for relapsed follicular lymphoma

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Purpose or Objective: Follicular lymphoma (FL) is an indolent disease with a progressive relapsing course. Autologous hematopoietic cell transplantation (AHCT) has been proven to be effective in treating recurrences. At The Ottawa Hospital (TOH), AHCT utilizing total body irradiation (TBI) has been used to treat FL patients, who have progressed after at least one course of chemotherapy, for over 20 years. There are concerns in the literature regarding the use of TBI due to the potential for radiation-induced second malignancies. However, we hypothesize that TBI based conditioning regimens should not lead to excessive second cancers. We undertook a review of our large single-institution AHCT experience in order to assess patient outcomes and rates of second malignancy.

Material and Methods: We retrospectively reviewed consecutive patients undergoing AHCT for relapsed FL from July 1991 to February 2013. All patients received treatment at TOH, a regional tertiary center. The most common pre-AHCT conditioning regimen was Etoposide 60 mg/kg / Melphalan 140 mg/m2 / TBI. Patients received TBI on a linear accelerator using high energy photons (100W or 180W) and utilizing a translating bed technique. 92% received 5 Gy / 1 fraction / 1 day, the rest received 12 Gy / 6 fractions / 3 days. Lung attenuators were used for all patients to maintain a homogeneous dose. Patient information was stored in our bone marrow transplant registry database. This includes baseline characteristics, demographics, outcomes, types and dates of second cancers. Descriptive statistics were calculated for all relevant demographic variables. Overall survival of the cohort was estimated using the Kaplan-Meier method. Cumulative incidence of second malignancy was calculated; death was a competing risk.

Results: Overall, we evaluated 174 patients with a median age of 50 years at transplant. There were 106 men and 68 women included, and median follow-up was 6.0 years after AHCT. Overall survival at 1, 5, 10 and 15 years was 93%, 73%, 57% and 47% respectively. The median follow-up among survivors was 8.3 years. Eighteen of 174 patients (10.3 %) developed a second malignancy. Of these, 11 (6.3%) had solid tumors, 2 (1.1%) had AML and 5 (2.9%) developed myelodysplastic syndrome. Median time to developing second cancer was 7.2 years, with cumulative incidences of developing second cancer at approximately 4.5% and 8.2% at 5 and 10 years. Solid tumors included breast (2), prostate (3), endometrial (1), skin (4) and lung cancers (1). Furthermore, 82% of patients who developed solid tumors were alive at last follow-up.

Conclusion: Our results with AHCT utilizing TBI in the management of relapsed FL patients have been very good. Indeed, most patients survive more than 10 years after treatment. The risk of second cancers is acceptable and compares favorably with the published literature. Moreover, we suspect screening, particularly for solid tumors post-treatment, may help detect early treatable second malignancies.

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Low and intermediate dose radiotherapy in head and neck MALT lymphoma

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Purpose or Objective: Mucosa-associated lymphoid tissue (MALT) lymphomas can present in several sites in the head and neck and is often treated with radiotherapy. MALT lymphoma of the salivary and lacrimal glands is >300 fold more common in patients with Sjogren's syndrome (SS) than in the rest of the population and tends to be a multifocal process. The optimal dose of radiotherapy is not established. The aim of this study is to analyse the outcome of radiotherapy for head and neck MALT lymphoma in patients with and without SS.

Material and Methods: A retrospective review of departmental records identified 26 patients with head & neck MALT lymphoma treated with radiotherapy between 2003 - 2013. Inclusion criteria were histologically proven MALT lymphoma and complete radiotherapy record. The primary end-points were objective response rate and response