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Fertility of female lymphoma patients treated with chemotherapy

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Purpose: To assess gonadal function and fertility status of female patients treated for primary mediastinal B-cell lymphoma (PMBL).

Patients and Methods: Retrospective cohort study of premenopausal women with PMBL. Gynecologic and obstetric histories were obtained prior to, during and after chemotherapy. Hormonal assays (follicle-stimulating, luteinizing and anti-Muellerian hormones, estradiol, total testosterone, inhibin B) were performed on frozen-thawed serum samples collected before, during, and 10-18 months after chemotherapy.

Results: Twenty-seven women with a median age of 30.5 (r 21-50) years at diagnosis received a median of 6 (r 6-8) cycles of chemotherapy. All were premenopausal, in continuous complete remission and had been followed for a median of 63 (r 12-156) months. Based on age at treatment start and anticipated ovarian reserve 3 groups were distinguished: a very early reproductive group (VERG) including those 25 (r 21-25) years (n=9), an early reproductive group (ERG), 26-37 (r 26-35) years (n=9), and a late reproductive group (LRG) aged \geq 38 (r 38-50) years (n=10). Twenty-three participated in a questionnaire, 4 did not. Prior to chemotherapy, 19 (83%) were menstruating, 1 was pregnant, 1 had a prior hysterectomy and 2 carried intrauterine devices. Of the 19, 12 (63%) developed amenorrhea with treatment; 4 in the VERG continued to menstruate; 3 did not remember their menstrual histories during treatment. Following chemotherapy, 14/19 (74%) had menstrual periods, all in the VERG and the ERG. All women in the LRG stopped menstruating. Of the 6 women, who attempted pregnancy, all conceived without medical assistance and delivered healthy children at term, including one set of twins. To date, 11 children have been delivered by this cohort. Hormonal assays revealed transient ovarian dysfunction from chemotherapy in all women with varying degrees of age-dependent recovery at a follow-up range of 10-18 months. Best recovery was observed in women of the VERG. The levels in those of the LRG remained in menopausal ranges.

Conclusion: Fertility appears to be preserved in women treated with chemotherapy for PMBL, particularly in those 37 years. The risk of premature menopause seems confined to women \geq 38 years.

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