A history of ABVD (Adriamycin/Bleomycin/Vinblastine/Dacarbazine) therapy for Hodgkin lymphoma alters the number of oocyte cryopreserved after in vitro maturation in candidates for urgent fertility preservation

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INTRODUCTION

Chemotherapy can result in ovarian failure and premature menopause. Despite a paucity of data, patients facing infertility after cancer treatments may be exposed to poor outcome of assisted reproductive technologies. ABVD chemotherapy administered for Hodgkin lymphoma (HL) before the age of 30 years is usually associated with low rates of premature ovarian insufficiency. However, some women may face a relapse of the hematologic disease or another type of cancer. The question of FP should therefore be considered. The present investigation aimed at analyzing whether a medical history of HL treated with ABVD is associated with poor results of in vitro maturation of oocytes (IVM) in women seeking urgent fertility preservation (FP) after relapse of the hematologic disease or second malignancy?

RESULTS

By design, in ABVD and control groups, women were comparable in terms of age (26.5 ± 1.31 vs. 26.68 ± 1.22 years, respectively), BMI (22.7 ± 0.8 vs. 22.3 ± 0.7 Kg/m²) and markers of the follicular ovarian status (serum AMH levels (2.95 ± 0.3 vs. 3.07 ± 0.4 ng/mL; and AFC (16.9 ± 1.3 vs. 17.3 ± 1.3 follicles, respectively). Despite similar AMH and AFC, the number of immature oocytes recovered was significantly lower in the ABVD group when compared to controls (6.45 ± 1.0 vs. 8.95 ± 0.9 oocytes, P<0.05, respectively). Although the overall maturation rate was similar in both groups (65.2% ± 3.5 vs. 61.0% ± 7.3, NS, respectively), the total number of in vitro matured oocytes cryopreserved was significantly decreased in women having received chemotherapy (4.1 ± 0.8 vs. 5.7 ± 0.7, P<0.05, respectively).

CONCLUSIONS

Despite similar markers of the ovarian reserve, women having received ABVD for HL and candidates for FP using IVM after relapse of the disease or breast cancer, have reduced number of immature oocytes recovered and total number of mature eggs cryopreserved when compared with cancer patients without history of chemotherapy. The present results suggest that oocyte cryopreservation after IVM may be altered by previous ABVD therapy, even though markers of the follicular ovarian status remain in the normal ranges. These findings should be taken into account in the strategy of FP of women with relapse of HL or second malignancy. Therefore, ovarian tissue cryopreservation should be considered systematically in combination with IVM in women having received ABVD therapy.