CONTROLLED OVARIAN HYPERSTIMULATION (COH) FOR FERTILITY PRESERVATION IN 48 YOUNG CANCER PATIENTS: A PROSPECTIVE COMPARATIVE STUDY WITH TIME AND AGE-MATCHED HEALTHY CONTROLS

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Objective: Studies concerned with the ovarian response to COH in cancer patients are still few and all are retrospective. Their results suggest that the number of oocytes retrieved is significantly lower in cancer patients than in healthy controls. The aim of this prospective study is to compare the characteristics of the follicular and oocyte cohorts in young cancer patients versus healthy time and age-matched controls undergoing ICSI.

Design: prospective observational study

Materials and methods: 48 patients, mean age 29 ±5 (18 to 39), undergone COH for oocyte cryopreservation before starting chemotherapy for breast cancer (51%), haematological malignancies (36%) or solid tumors (13%) (Preservation group). Each of these patients was compared to two time and age-matched healthy controls undergoing their first ICSI attempt for male infertility (ICSI group). COH protocol consisted in the association of r-FSH and GnRH antagonist with a GnRH agonist triggering. R-FSH starting dose varied from 150 to 450 IU.

Results: the two groups were similar regarding BMI, basal AMH levels, basal AFC. Mean total dose of r-FSH was significantly higher in the preservation group. The duration of stimulation was not different between the two groups as the mean estradiol levels and mean number of mature follicles on triggering day. The mean number of total oocyte did not differ (10.9 ± 7.8 vs 11.2 ± 4.8) but there was significantly less metaphase II oocytes in the preservation group (6.1± 4.9 vs 9 ± 3.9; p ≤ 0.0007) with a higher rate of oocyte lysis after retrieval and denudation. The ratio between number of mature oocytes and number of mature follicles was significantly lower in the preservation group (70% vs 99%). Breast cancer patients required less duration of stimulation and lower total dose of r-FSH.

Conclusion: these results show a worse COH outcome in cancer patients in terms of number of meta II oocyte despite same number of mature follicles and total oocytes and same E2 levels on triggering day.