RESULTS: 86% of patients approached participated. Of 300 enrolled, 270 were followed to completion. 252 females, mean age 27±14 with RA (45%), JRA (44%), SpA (11%) on MTX (33%), TNFα (11%), combo (36%), other (5%) or none (16%) were 6.8±8 years from diagnosis. 18% of girls were premenarchal. Mean time between serum draws was 133+147 days. At varying time points none of the therapies significantly impacted AMH values in the cohort, subgroups, or based on treatment duration in the multivariate analysis (MTX p=0.09-0.38, TNF p=0.09-0.66, other p=0.25-0.73). In the younger cohort (12±8 years) we saw a nonsignificant decrease in AMH during which time AMH in healthy controls should be increasing.

CONCLUSION: Young females with debilitating chronic autoimmune diseases are on potentially cytotoxic therapies for years. We present an exciting large clinical study with a tremendous amount of data on therapies & outcomes, including some reassuring data that at least short term impacts on the oocyte pool may not be significant. The lack of an increase in the young children warrants further research and based on our additional data, may improve when medications are stopped.

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P-33 Tuesday, October 21, 2014

EFFECT OF ABO BLOOD TYPE ON OVARIAN RESERVE. S. Lin, P. Liu, J. Qiao. Department of Obstetrics and Gynecology, Reproductive Medical Center, Peking University Third Hospital, Beijing, China.

OBJECTIVE: Over the years, many ovarian reserve tests have been performed to evaluate the oocyte reserve and quality, and predict the outcomes of assisted reproductive technology (ART). Some studies have shown that there is a novel relationship between ABO blood type and DOR[1]; however, other studies have shown the opposite finding[2]. To further explore this contradictory issue, we examined the relationship between ABO blood type and ovarian reserve.

DESIGN: This study was a retrospective analysis of the association between ABO blood type and ovarian reserve, and included 35,479 women who underwent IVF-ET cycles between 2006 and 2012.

MATERIALS AND METHODS: Only patients $\leq$ 45 years of age were included. The age, body mass index (BMI), blood type, duration of subfertility, sub-fertility type, history of endometriosis, history of ovarian surgery, and antral follicle count (AFC) were collected from each patient. The day 3 serum FSH level was determined using commercially available immunoassays.

RESULTS: Among the 35,479 women, 11,395 (32.12%) were blood type B, 10,583 (29.83%) were blood type O, 9861 (27.79%) were blood type A, and 3640 (10.26%) were blood type AB. There was a significantly higher percentage of blood type O in patients with a FSH $\leq$ 10 IU/L compared with the FSH $>$ 10 IU/L group. Conversely, a significantly higher percentage of blood types B and AB existed in patients with DOR. No significant difference was observed between blood type A and DOR. Multivariate logistic regression analysis showed that blood type O was significantly less associated with DOR (OR = 0.656; 95% CI = 0.598-0.719; P $<$ 0.001) and B antigen (blood type B or AB) significantly increased the relationship with DOR (OR = 1.525; 95% CI = 1.392-1.672; P $<$ 0.001).

CONCLUSION: In conclusion, the present study showed that there is an association between ABO blood types and DOR. More research needs to be conducted to explore the underlying mechanism of ABO blood type on DOR.

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P-34 Tuesday, October 21, 2014

A PROSPECTIVE LONGITUDINAL STUDY OF THE IMPACT OF BREAST CANCER CHEMOTHERAPY ON OVARIAN RESERVE: DO INDIVIDUALS HAVE DIFFERING SUSCEPTIBILITIES? K. Oktay,[a,b] S. Goldfarb,[c] G. Bedoschi,[a,b] J. Quistorff,[c] E. Grunblatt,[d] T. Cigler,[e] F. Moy,[a] S. Patil,[c] S. Goswami,[d] M. Dickler.[c] [a]New York Medical College, Valhalla, NY; [b]Innovation Institute for Fertility Preservation and in Vitro Fertilization, New York, NY; [c]Memorial Sloan-Kettering Cancer Center, New York, NY; [d]Yeshiva University, New York, NY; [e]Weill Cornell Medical College, New York, NY.

OBJECTIVE: While the knowledge is accumulating on the adverse impact of chemotherapy (ChT) on fertility, individual longitudinal data on the sensitivity of ovarian reserve to ChT is lacking. Here we performed the largest longitudinal study of the impact of ChT on ovarian reserve in women with breast cancer. We hypothesized that while ChT reduces ovarian reserve, individuals may have differing susceptibilities to this ChT-induced ovarian damage.

DESIGN: Prospective-longitudinal. 207 subjects enrolled into the study. After the exclusions (failure to follow up, tamoxifen-only treatment, serum sample inadequacy, possible PCOS and consent withdrawal), 103 were available for final analysis.

MATERIALS AND METHODS: 103 women aged 26-46 (mean age 37.4 ± 4.6) with newly-diagnosed stage 0-3 breast cancer had blood sampling prior to and 1 year post completion of 4-6 month ChT with anthracycline-based (AC-T/EC-T) and non-anthracycline based (CMF and TC) protocols. AMH levels were measured in frozen sera with an in-house ultrasensitive ELISA assay and were log transformed due to non-normal distribution. Results were analyzed with Wilcoxon rank sum test and repeated measures ANOVA to adjust for age, adjuvant tamoxifen use, and tumor stage.

RESULTS: Compared to baseline (median 0.21, range 0.001-3.9 ng/ml), AMH levels declined significantly (median 0.11, range 0.001-4.47 ng/ml; p$<$0.0001) 12 months post-ChT. Type of ChT, tumor stage, and adjuvant tamoxifen use did not significantly affect the results. However, AMH levels did not decline in a subset of patients (N=31; those declining within the intrassay variability or showing increase) despite receiving gonadotoxic ChT. The non-declining group did not show difference in age, receptor status, ChT regimen, and tamoxifen use when compared to those who showed significant decline.

CONCLUSION: This prospective longitudinal study shows that breast cancer ChT is detrimental to ovarian reserve. Of interest, there seems to be an individual variability in the sensitivity of ovarian reserve to ChT-induced damage. Further research is needed to explore the genetic factors that confer resistance to ChT-induced ovarian damage.

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P-35 Tuesday, October 21, 2014

NORMATIVE ANTIMULLERIAN HORMONE (AMH) LEVELS AMONGST YOUNG AFRICAN-AMERICAN WOMEN (AGES 23-35 YEARS OLD). E. E. Marsh,[a] L. Bernardi,[a] P. de Chavez,[b] M. S. Ghant,[a] J. C. Robins,[a] D. D. Baird,[c] M. Carnethon.[b] [a]Obstetrics and Gynecology - REI Division, Northwestern University-Feinberg School of Medicine, Chicago, IL; [b]Preventive Medicine, Northwestern Univ., Chicago, IL; [c]Epidemiology, NIEHS, Research Triangle Park, NC.

OBJECTIVE: To characterize the normative AMH levels amongst young African American women (AAW).

DESIGN: Cross-sectional Study.

MATERIALS AND METHODS: 1,654 AAW participating in the Study of Environment, Lifestyle & Fibroids (SELF) were included in this study. Inclusion criteria for participation in SELF were AA race, age 23-34 years at recruitment, no known diagnosis of fibroids, no history of hysterectomy, and no history of cancer, Lupus, Grave's disease, Sjogren's disease, scleroderma, or multiple sclerosis that required medical or radiation treatment. AMH was run using an ultrasensitive ELISA assay.

RESULTS: The mean age of the subjects was 28.7 ± 3.5 years (mean±SD). The mean AMH level was 3.99±3.485 with a range of (< .002 to 39.4 ng/mL). 20.6% of the subjects were currently using some form of hormonal birth control. 12.4% of the subjects had decreased ovarian reserve ($\leq$ 1.0 ng/mL) and 0.6% of the subjects had excessively high AMH levels (>20 ng/mL). There is a nonlinear relationship between age and AMH with peak AMH levels seen at age 26. Using linear regression analysis, a significant association was found between AMH and age, body mass index (BMI), the current use of hormonal contraception, history of abnormal uterine bleeding, ever having been pregnant, and ever had any pregnancies that ended in a live birth. There was no significant association between AMH and age of menarche, a diagnosis of polycystic appearing ovaries (PCO) or PCOS, past use of hormonal contraception, amenorrhea, having sought medical care for difficulty becoming pregnant, currently smoking or a smoking history. Older Age^2 (ß= -.007; SE= .002; P<.01), higher BMI (ß= -.013; SE= .003, P<.01), and current contraceptive use (ß=-.357; SE= .067; P<.01) remained significantly associated with lower AMH in the multivariable model.

CONCLUSION: This population based study suggests that ovarian aging in young AAW peaks at a later age than previous studies have reported in other races. While age is correlated with AMH, it only accounts for a relatively small amount of the variation seen in AMH levels amongst young AAW. Longitudinal studies are needed to better characterize ovarian aging in this understudied segment of the population so that appropriate counseling can be provided in terms of fertility and menopausal health implications.