traction. Failure to quatitate spermatogenesis with Johnsens score index does not explain the poor correlation between testicular sperm extraction and histological patterns.

P-261

Ovarian Failure Post-Chemotherapy in Young Cancer Patients-Risk Assessment Indicate the Need for Intervention. [1]D. Meirow, [1]A. Lewin, [3]R. Or, [2]E. Rachmilewitz, [3]S. Slavin, [1]J. G. Schenker, D. Abramovich, [2]D. Ben-Yehuda. [1]Department of Obstetrics and Gynecology, [2]Department of Hematology [3]Department of Bone Marrow Transplantation Hebrew University-Hadassah Medical School, Jerusalem, Israel.

Objectives: The development and widespread use of combination chemotherapy and radiotherapy have opened new vistas for long-term survival of young patients with cancer. Many adolescent and childhood lymphomas, leukaemias and several solid tumors can now be cured. Frequently however, the price that is paid for success is ovarian failure and infertility. There is an urgent need to adjust new assisted conception techniques in order to minimize the sterilizing effects of treatment and to improve the quality of life of young survivors. Ovarian failure rate according to disease, treatment protocol and patient's age was evaluated, in order to assess the risk facing each group.

Design: Clinical prospective study of cancer patients with proved normal ovarian function was conducted to evaluate ovarian failure risk according to disease, treatment protocol and patient's age.

Materials and Methods: Patients were evaluated prior to chemotherapy administration. Only patients with normal menstrual cycles and normal gonadotropin levels and were included. Treatment protocol (drugs, doses and treatment cycles) were recorded. Gynecological evaluation including hormonal profile were performed months/years post treatment.

Results - Ovarian function was evaluated in 112 patients with lymphoma (41), leukemia (38) breast ca. (24) and other malignancies (9) aged 13–50. Ovarian failure rate for NHL. was 49% (ages: up to 30- 19%, 31 to 40 62%, 41 to 50 75%). Ovarian failure rate for AML was 21% (ages: up to 30- 0%, 31 to 40 42%, 41 to 50 50%). For breast cancer Ovarian failure was 66%. In 63 patients aged 13–51 bone marrow transplantation for cancer treatment caused sterility in all but 3 patients.

Conclusion: There were significant differences in ovarian failure rate, according to disease; patients with lymphoma and breast cancer who received long protocols (6 mo.) had a higher ovarian failure rate than patients with leukemia (although treatment for leukemia is more aggressive). High-dose chemotherapy in conjunction with bone marrow transplantation induce ovarian failure irrespective of the patient's age. The population of cancer survivors has increased and this trend will continue in the future. Thus, the late complications of these treatments has assume greater significance. If the subject of fertility is discussed prior to treatment and the cases are properly selected, intervention can be offered (IVF with embryo cryopreservation or ovarian tissue cryopreservation) to rescue gametes and to overcome treatment-induced infertility.

P-262

The Oocyte Factor in Severe Ovarian Hyperstimulation Syndrome (OHSS). [1,2]M. A. Aboulghar, [1]R. T. Mansour, [1]G. I. Serour, [1,2]A. Ramzi, [1]A. Kamal, [1]Y. Amin. [1]The Egyptian IVF-ET Center, Maadi, Cairo, and [2]the Department of Obstetrics and Gynecology, Faculty of Medicine, Cairo University, Cairo, Egypt.

Objectives: The implications of the high Estradiol (E2) levels and the large number of oocytes in OHSS on the outcome of assisted reproduction is not clear in the world literature. Our objective is to study the oocyte maturity, fertilization rate (FR), implantation and pregnancy rates in severe OHSS.

Design: Retrospective study with an age matched control group who were stimulated for in vitro fertilization (IVF) or intracytoplasmic sperm injection (ICSI) during the same period with the same stimulation protocol.

Material and Methods: Group A = 42 patients who developed severe OHSS during ovulation induction for IVF or ICSI. They were diagnosed by the presence of ovarian enlargement more than 10 cm in diameter and massive ascites, diarrhea and abdominal pain. Group B = 42 patients, an age matched control group who received the same stimulation protocol and did not develop OHSS. Based on clinical, hormonal and ultrasonic examination group A was subdivided into group A1 = 31 patients with polycystic ovaries (PCO) and group A2 = 11 patients who were high responders with no PCO. On the same basis group B was similarly subdivided into group B1 = 5 patients and group B2 = 36 patients. Oocyte maturity was diagnosed by the extrusion of the first polar body in ICSI and by the morphological appearance of the cumulus-corona cell complex in IVF.

Results: The mean E2 level, the mean number of oocytes per puncture, the percentage of mature oocytes, the FR were, 6700±2350 pg/ml, 25±8.5, 62.7%, 41.5% in group A, and 2420±1540 pg/ml, 12.8±6.2, 76.4%, 59.4% in group B respectively. The difference was statistically significant in all items. The mean number of embryos per transfer, the implantation rate and the pregnancy rate were 3.9, 11%, 31% in group A and 3.7, 11.4%, 31% in group B. The difference was not significant between the 2 groups. In group A1, the mean number of oocytes, the percentage of mature oocytes and the fertilization rate were 27±8.1, 60% and 36% as compared to 21±6.6, 78 and 62% in group A2 respectively. The difference was statistically significant between all parameters.

Conclusion: The lower oocyte maturity and quality resulted in a lower FR in the OHSS group. However, the final number of embryos was compensated by the larger number of oocytes. In group A, the quality of embryos that reached embryo transfer (ET) were not different from the control group as shown by the similar implantation and pregnancy rates in both groups. This also suggests that

the extremely high levels of E2 in OHSS did not affect the endometrial receptivity. There was a highly significant difference in the percentage of PCO between groups A and B. This explains in part the reasons for the development of OHSS and its severity in group A, and the inferior quality of the oocytes in this group. Group A2 included high responders with no PCO. They produced significantly higher quality of oocytes and higher FR.

P-263

Abnormal Oocytes: An Underestimated Infertility Factor Revealed by ICSI. R. T. Mansour, M. A. Aboulghar, G. I. Serour, A. Kamal, N. A. Tawab. The Egyptian IVF-ET Center, Maadi, Cairo, Egypt.

Objectives: To identify cycles in which all the oocytes had different morphological abnormalities and relate it to fertilization rate (FR), pregnancy rate (PR), and outcome in our ICSI program.

Design: Retrospective study comparing the results of normal and abnormal oocyte ICSI cycles.

Materials and Methods: Analysis of oocyte morphology was done after removal of cumulus-corona cells using hyaluronidaze. Examination was done under an inverted phase microscopy at 400 × magnification. The oocytes were considered abnormal if it contained: 1) dark granular cytoplasm. 2) vaculated cytoplasm. 3) extracytoplasmic fragments. 4) irregular outline of the cytoplasm. 5) structureless zona. Immature oocytes were excluded from the study except when all the oocytes from one patient were immature at the time of retrieval. Cycles with normal oocytes were used as a control group.

Results: A total of one thousand ICSI cycles were revised and 66 cycles (6.6%) were diagnosed to have abnormal morphology for all oocytes (137 oocytes with extracytoplasmic fragments, 121 with vaculated cytoplasm, 185 with dark granular cytoplasm, 56 with irregular cytoplasmic membrane, and 8 with structureless zona). Three patients had the same kind of abnormal oocytes in previous ICSI cycles, and nine had previous total failure of fertilization in regular IVF. Twenty patients (30%) were diagnosed previously as unexplained infertility. The fertilization rate, pregnancy rate and abortion rate were 47%, 26%, and 65% in the abnormal oocyte group as compared to 59.2%, 29.4% and 21.8% in the control group respectively. The fertilization rate was significantly lower and the abortion rate was significantly higher in the abnormal oocyte group as compared to the control group. It was very striking that 11 out of the 17 pregnancies (65%) ended in a first trimester abortion. Only two pregnancies continued to full term and resulted in the delivery of two babies. One baby had Down syndrome and the other baby died after 2 days from a congenital heart disease. Two other pregnancies are ongoing.

Conclusions: Cycles in which all the oocytes had abnormal morphology represented 6.6% in a series of 1000 ICSI cycles. Abnormal oocytes represented 5.7% of all oocytes injected. The abnormal oocyte morphology significantly lowered the fertilization rate and embryos developing from them had a very poor chance of ongoing pregnancy. Pa-

tients should be carefully counselled before transfering embryos developing from abnormal oocytes.

P-264

Advanced Imaging of ART Failures: A New Diagnostic Approach. [1]O. Khorram, [2]C. Simerly, [1]J. Jones, [2]L. Hewitson, [1,2]G. Schatten. [1]Depts. of OB/GYN and [2]Zoology, University of Wisconsin, Madison, WI.

Objectives: Fertilization in mammals culminates in the intermixing of the parental genomes on the mitotic apparatus prior to the first cleavage division. The success of this procedure is governed by several important events such as the completion of meiotic maturation of the oocyte with the extrusion of the second polar body, sperm penetration, the decondensation of the sperm nucleus and the maternal chromosomes into male and female pronuclei, the restoration of the sperm centrosome and the nucleation of microtubule-mediated motility necessary to bring the male and female pronuclei into close apposition. A defect in one or more of these events is likely to lead to fertilization failure, whether conceived naturally in vivo or with the use of assisted reproduction, such as in vitro fertilization (IVF) and intracytoplasmic sperm injection (ICSI).

Design: The cytoskeletal elements of failed to fertilize oocytes from human IVF (39 oocytes) and ICSI (24 oocytes) were examined.

Material and Methods: Oocytes were fixed and labelled with specific probes to cytoskeletal molecules and examined with sophisticated digital conventional and confocal microscopy.

Results: This imaging permits the fertilization failures to be classified into three groups: Group I - unfertilized oocytes (no sperm present); Group II - parthenogenetically activated oocytes and Group III - oocytes arresting post-sperm incorporation. Following IVF, 28% oocytes had not been penetrated (Group I); in Group II, 13% contained a single female pronucleus and 5% contained female karyomeres and in Group III, 44% oocytes contained multiple pronuclei and 10% demonstrated microtubule nucleation/ sperm aster defects. Following ICSI, 21% did not contain a sperm (Group I); 4% developed parthenogenetically (Group II) and in Group III, 67% contained multiple pronuclei and 8% underwent premature chromosome condensation (PCC). In a parallel study, 31 arrested rhesus monkey oocytes fertilized by ICSI were examined for the cause of fertilization failure and categorized into the same three groups. At the time of fixation, 32% rhesus oocytes did not contain a sperm (Group I); in Group II, 46% were parthenogenetically activated and 3% developed female karyomeres and in Group III, 13% underwent PCC and 6% developed multiple pronuclei.

Conclusions: The types of fertilization failure reported here were found in human oocytes fertilized by either IVF or ICSI and in rhesus oocytes fertilized by ICSI demonstrating the utility of the rhesus monkey as an animal model to examine the causes of fertilization failure in humans. These discoveries have important implications for studying centrosome inheritance and function in a variety