Mitochondrial DNA (mtDNA) mutations are the cause of rare but severe disorders, without any effective treatment. Preventing their transmission is, therefore, considered to be of key importance. Because of the complexity of mitochondrial genetics, conventional prenatal diagnosis is not a satisfactory method of genetic testing. In an Opinion article (p. 2392), the pros and cons of introducing preimplantation genetic diagnosis (PGD) for mtDNA mutations are discussed. It is concluded that the best one will be able to achieve is the selection of the ‘least’ affected embryos for transfer. PGD can only aim at reducing reproductive risk. The challenging ethical issues regard parental and medical responsibilities. The main argument in favor of PGD is that couples at risk will have a reduced chance of having a severely affected child. There are many objections but the authors conclude that none of them provides convincing moral arguments that risk-reducing PGD is unacceptable.

Because of the slight but significant increased risk of fetal chromosomal abnormalities after ICSI, prenatal testing can be offered to couples who became pregnant using this technique. The attitude of pregnant women after IVF/ICSI \((n = 120)\) toward prenatal screening was compared with the attitude of patients who became spontaneously pregnant \((n = 216)\) (p. 2438). IVF/ICSI pregnant patients were less likely to accept prenatal testing (triple screen/amniocentesis) than the patients who conceived spontaneously. Older patients and patients of lower socioeconomic status were also less likely to opt for amniocentesis.

Experimental endometriosis was surgically induced in rats and the effects of pyrrolidine dithiocarbamate (a nuclear factor-kB inhibitor) and bortezomib (a proteasome inhibitor) were evaluated in the two experimental and the control groups, 7 days after the initial evaluation of the implants (p. 2458). The size of implants decreased in both the experimental groups, whereas the implants became larger in the control group. Both approaches may be considered as possible new treatments for endometriosis.

A follow-up study (18–75 months after surgery) was carried out in 92 patients who had an entire ovary removed for cryopreservation prior to gonadotoxic treatment for several types of cancer (p. 2475). Ovarian function and patients’ experience with the procedure were investigated. The cryopreservation procedure had almost no negative effect on the cancer treatment, which was not delayed by the procedure. The results indicated that cryopreservation has to be recommended in young Hodgkin’s lymphoma patients who receive aggressive chemotherapy as well as patients undergoing bone marrow transplantation.

Expanding upon previous experimental work on the origin of an oocyte activation factor in human spermatozoa, the localization of the putative oocyte activation factor phospholipase Cζ (PLCζ) was investigated in different types of human spermatozoa by immunoblotting and immunofluorescence (p. 2513). PLCζ was variably detected in three localities of the sperm head: the equatorial segment and acrosomal/post-acrosomal regions. This variability may reflect differences in oocyte activation capabilities between the individuals or even within the same ejaculate. Possible links between PLCζ and certain types of male infertility may be investigated.

There exists an extensive literature on the high rate of chromosomal abnormalities in oocytes, cleaving embryos and fetuses. An elegant study reports on the chromosomal abnormalities in 158 good quality blastocysts by comparative genomic hybridization (p. 2596) and indicates that the aneuploidy rate in blastocysts is substantially lower than in embryos at an earlier stage of development (38.8% versus 51%). It was obvious that a number of abnormalities persisted throughout the development, which indicates that the development to the blastocyst stage does not represent a reliable selection method for euploid concepti.

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