Delivery of normal babies from embryos originating from oocytes showing the presence of smooth endoplasmic reticulum aggregates

Sir,
The recent publication by Mateizel et al. (2013) published in Human Reproduction stimulated our interest. Since the above-mentioned paper is by far the largest study dealing with oocytes showing a dysmorphism called ‘aggregation of the smooth endoplasmic reticulum (SER)’, the results presented are of utmost relevance for both clinical embryologists and clinicians.

However, considering the large dataset available the authors missed a good opportunity to shed some light on the possible negative influence of controlled ovarian hyperstimulation details on oocyte quality, in particular, the appearance of clusters of SER (Otsuki et al., 2004; Ebner et al., 2006, 2008; Sä et al., 2011). Most notably, the existence of natural cycles in the present study (Mateizel et al., 2013) would have allowed elucidation of any potential difference in ooplasmic appearance between those oocytes grown in conditions similar to the in vivo situation and their stimulated counterparts. Furthermore, vague correlations between organelle clustering and the type of stimulation protocol (Otsuki et al., 2004; Ebner et al., 2006) theoretically could have reached a level of significance due to the formidable number of patients and gametes. This brings one to the unresolved mystery of whether a change in stimulation or drug regimen would reduce the occurrence of the said intracytoplasmic anomaly since its repetitive nature has been documented (Meriano et al., 2001; Akarsu et al., 2009) with a recurrence risk ranging between 36% (Sä et al., 2011) and 39% (Ebner et al., 2006).

In the literature neonatal outcome after transfer of embryos deriving from oocytes showing SER clusters was found to be associated with imprinting disorders (Otsuki et al., 2004), cardiovascular problems (Sä et al., 2011) or multiple fetal anomalies (Akarsu et al., 2009). Even ‘healthy’ sibling embryos were reported to affect malformation rate (Ebner et al., 2006). Since to date only anecdotal reports concerning healthy live births were available (Sä et al., 2011; Ebner et al., unpublished data, L. Rienzi, personal communication) the data of Mateizel et al. (2013) will astonish the reader.

Several reasons may account for this reported observed inconsistency. The most striking difference is an almost halved frequency of embryos at a larger scale are a fact. Although it is not recommended to fully rely on retrospective data, in this case the message that SER-positive oocytes can be injected, cryopreserved and used for successful transfer is a very important one, especially in the situation when all oocytes collected are abnormal. Whether the present publication justifies prospective usage of these gametes/embryos is still questionable and should, as mentioned by the authors (Mateizel et al., 2013), ‘be approached with caution’. Since a continuous follow-up of the offspring is more or less guaranteed in the Brussels group additional data might cause a process of rethinking which would lead to an adaption of the current consensus (Alpha Scientists in Reproductive Medicine and ESHRE Special Interest Group Embryology, 2011).

References


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