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Letter

Artificial blastocoel collapse of human blastocysts before vitrification and its effect on re-expansion after warming

To the Editor

We read with great interest a recent study published in *RBMOnline* on time-lapse observation (Primovision®, Vitrolife) of re-expansion of warmed blastocysts (Kovačič et al., 2017). Two findings of this paper are worth closer consideration.

Firstly, it was reported that the observed developmental advantage of rapid re-expansion was not reflected in live-birth rate. This observation is in contrast to our group's previously published data (Ebner et al., 2017). Using a different time-lapse imaging system (Miri TL®, Esco Medical), we accurately annotated the start and completion of the re-expansion process, which allowed us to predict the fate of the transferred warmed blastocyst (no pregnancy, loss of pregnancy, or live-birth). Others (Coello et al., 2017; Mirzazadeh et al., 2016) also used the dynamics of warmed blastocyst re-expansion to successfully correlate this variable with implantation.

Secondly, Kovačič et al. (2017) demonstrate that artificially collapsed human blastocysts re-expand more rapidly after warming compared with non-manipulated control blastocysts. Again, this observation is in contrast to our experience. In fact, in our hands (unpublished data) those blastocysts with artificial blastocoel reduction showed a significantly delayed/longer re-expansion process. This divergence may be explained by the technique that was used to reduce the volume of the blastocoel. While we used an ICSI pipette to cause immediate collapse of the blastocoelic cavity (within seconds), Kovačič et al. (2017) applied a laser-assisted shrinkage technique that causes gradual loss of fluid over minutes (Mukaida et al., 2006) until a certain state of equilibration is reached. This is supported by the observed differences in re-expansion time between mechanical- and laser-based collapse techniques (Desai et al., 2008). Kovačič et al. (2017) provide further evidence that the latter approach should be recommended as the state-of-the-art technique prior to vitrification of expanded blastocysts.

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