EDITORIAL

Research challenge: what is the best non-invasive test of oocyte/embryo competence?

Welcome to this first thematic issue of the 'new-look' MHR, focusing on non-invasive testing of oocyte/embryo competence. MHR is repositioning itself as the journal of choice for researchers at the scientific interface between basic and clinical reproductive medicine. It therefore seems timely to emphasize this vexing issue in ART, 30 years on from the birth of the world’s first IVF baby. The elusive identity of a ‘top-quality’ embryo dogged the early IVF embryologists, as it still does today. When Robert Winston and I started up the Hammermith IVF programme in the early 1980s, we soon learned that fast-cleavage rates and ‘ideal’ appearance, although seemingly helpful were far from the ultimate predictors of embryo quality or IVF outcome. My personal bias as both the endocrinologist and the embryologist was—and remains—that if the endocrinology were right the embryology would be right. Objective clinical evidence that follicular endocrine and gametogenic function are directly linked remains to be obtained but the ability to recognize the ‘best’ embryos available to the patient during an ART treatment cycle would undoubtedly be a major step in the right direction.

This issue of MHR reveals how the basic science of oogenesis and embryogenesis is converging with the development of new analytical techniques that are potentially able to help solve this problem, ranging from high-throughput screening of gene expression in cumulus cells through genomic RNA profiling to metabolic and chromosomal assessment of the preimplantation embryo. Several of these papers are invited (peer-reviewed) ‘New Research Horizons’ mini-review articles, submitted by authors presenting at a workshop ‘Emerging technologies in the assessment of gametes and embryos—the OMICS’ organized by one of MHR’s Associate Editors Dr Emre Seli on 3–4 October 2008 in La Jolla, CA, USA. The paper from Hamamah et al. is an exciting primary publication mapping to the same theme. They come together as a timely and authoritative compilation that aptly underscores the mission of MHR, ‘To publish advances in basic reproductive science relevant to human reproductive medicine’.

I am taking this opportunity to call for more papers in this area, particularly original research articles. Extensive exploratory, investigative and validation studies are needed before embryo screening tests become available for routine use in the clinic. As illustrated in this issue, there are several parallel aspects of gamete and embryo development for which promising new technologies converge with advancing basic knowledge to show great potential for viability testing. Comparative and combined testing of different parameters and at different stages may be relevant. MHR, with its focus on fast researcher to researcher communication, is an excellent first-choice avenue for publication.

In addition, the journal welcomes novel additions to the ‘New Research Horizons’ series which allows authors with a ‘big’ hypothesis the opportunity to build a platform for further research relevant to the mission of MHR. If they can convince the MHR editors and external reviewers of their case, supported by rigorous literature review and—where necessary—relevant unpublished data, MHR will publish it. If you have a relevant theme that maps to the mission and scope of MHR, why don’t you contact the editorial office to see if it is one the journal can cover? And if you are organizing meetings around such topics, the journal is always willing to seek new ways of working with you to encourage authors to consider the use of this exciting new modality to publish in MHR.

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665