

Abstract

The analysis of embryo morphology and development of suitable classification systems are helpful in selection of human embryos for transfer. Subjective morphological evaluation of embryos; however, does not predict the developmental potential of embryos with the highest probability of successful implantation, because even a morphologically perfect embryo is not always implanted in the uterus. It is expected that in the near future, non-invasive analysis of embryo physiology and function using techniques such as metabolomics, proteomics, lipidomics, genomics or transcriptomics will significantly help in the selection of a suitable embryo for transfer.

The analysis of used culture medium has a great potential for non-invasive genetic evaluation of preimplantation embryos. The analysis focuses at the wide range of excreted components such as specific metabolites, proteins, interleukins and nucleic acids into the culture medium, which may serve as predictive for the most suitable embryo for transfer.