P15

Establishing a standard assay protocol for the quantitative determination of soluble human leukocyte antigen-G (sHLA-G) concentration as a biomarker for embryo selection in ART

L Maree, TF Kruger, M-L Windt-De Beer, GM Tinney

Institute of Reproductive Medicine, Drs Aevitas Fertility Clinic & Tygerberg Hospital

INTRODUCTION:
Widespread research in the field of reproductive medicine exists to demonstrate the crucial nature of embryo selection in the treatment of patients wishing to conceive by assisted reproductive technologies. Embryologists employ various embryo selection strategies at different developmental stages, from oocyte to blastocyst stage, with the aim of identifying the most implantation competent embryo(s), with the highest potential to result in an ongoing singleton pregnancy, for transfer. The expression of sHLA-G in embryo culture supernatants has been identified as a possible biochemical marker of embryo competence in recent years.

AIM:
The study aimed to establish a standard assay protocol for its quantification so that it may be used routinely in addition to existing selection strategies employed in ART treatment programs to improve successful implantation and ongoing pregnancy rates while reducing the frequency of multiple pregnancies by enabling single embryo transfer.

MATERIALS AND METHODS:
All elements of the assay including; i) reagents,
ii) ELISA micro-plate, iii) incubation conditions and duration, iv) antibodies and v) controls, were evaluated in the hope of producing a significant magnitude of separation between the data point populations of negative and positive controls. The data produced by was not suitable for the generation of a standard curve against which test samples could be plotted to determine specific sHLA-G concentrations.

RESULTS:
The results illustrate the current barriers to the implementation of sHLA-G concentration determination as an additional non-invasive embryo selection technique in assisted reproduction clinics.

CONCLUSION/DISCUSSION:
There is an absolute need for ongoing investigation and optimization of sHLA-G
determination in culture supernatants as literature supports its potential to outperform other selection techniques currently employed in routine embryo selection in ART clinics worldwide.