First Clinical Experience with GM 501 – a New KSOM^{AA} based Embryo Cultur Medium

Eue I.[1], Schwahn E.[2], Merzenich M.[2], Häberlin, F.[1]
[1] fiore, Brauerstr. 95, CH-9016 St. Gallen
[2] Kinderwunschzentrum Köln, Schönhauser Str. 3, D-50968 Köln
(ines_eue@yahoo.de)

Imtroduction

KSOM^{AA} based embryo culture media were developed by Biggers and coworkers in Boston in the early nineties. KSOM abbreviates Simplex Optimzation Media with the addition of kalium (potassium). The original medium was recently completed by the addition of certain amino acids (thats why the adition KSOM^{AA}). In general, the culture of human embryos can be based upon two different philosophies: The developers of sequential culture media follow the hypothesis, that a deviding embryo in the course of its culture from day 1 to day 5 has changing metabolic and energetic demands a every day of culture which need to be fullfilled as optimal as possible. In this case the embryo is provided with 2-3 different media, which are exactly adjusted to the needs of the embryo in its particular developmental stage. The disadvantage in this case ist that the embryo needs culture medium change every day which leads to stress and disturbance. KSOM^{AA} based media have the advantage that all substances which are required by the embryo are present in one medium, the culture medium does not need to be changed and the philosophy is „let the embryo chose“.

Methods

In a retrospective study 129 IVF/ICSI cycles were compared, which were carried out according to standard hormon stimulation and ART precedures in our centre from February to July 2006. Patients were devided into three groups: A) GM 501 (Gynemed) (n=61), B) ISM1 (n=18) and C) IVF Universal (n=50) (both from Medicult).

Results

The groups did not differ with regard to age (A: 35,9±4,3, B: 33,2±2,5, C:36,1±4,4) and number of transfered embryos (A: 2,6±0,7, B: 2,1±0,6, C: 2,0±0,7). Distribution of medical indications for treatment was comparable among the groups with an emphasis on idiopathic and andrological diagnosis.

Conclusion

We received very good clinical pregnancy rates with GM 501 in our center. Acccording to our recent experience for embryo cultivation from day 0 to day 3 this medium can be evaluated as a potent and promising new candidate. The fact that neither fertilization rate nor embryo score were significantly different among the groups speaks for an improved implantation behaviour of the embryos in GM 501 rather than improved metabolic properties of the embryo itself as the reason for higher pregnancy rate. We think that GM 501 embryos have an improved membrane contact to the endometrium (how ever caused) which leads to a higher implantational potential of the embryo. The fact that the rate of arbortions was drastically reduced after use of GM 501 is of special importance. The results of this study are preleminary and need to be supported by further cyles.