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TITLE

METAPHASE II OOCYTE GRADE SCORING, BASED ON THE COMBINATION BETWEEN THE MORPHOLOGICAL AND FUNCTIONAL PARAMETERS WITH A HIGH PREDICTIVE VALUE FOR FERTILIZATION, EMBRYO-KINESIS AND IMPLANTATION

AUTHOR/S

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ABSTRACT

Context

During the course of an ICSI procedure, oocytes display different persistent withdrawal of the ICSI pipette and availability of the injection funnel due to various cytoplasmic texture, density and oolemma elasticity.

Objective

The main purpose of this study is to establish can we improve treatment outcome after the application of an oocyte grading system, based on a combination of morphological characteristics of the injected oocytes and their functional parameters during ICSI procedure

Methods

Oocytes were divided into 3 grades based on morphological criteria:

Grade A: Gametes with no visible defects

Grade B: Oocytes with one major morphological defect

Grade C: Two or more simultaneous defects

Different grades were subdivided into 3 grades (1, 2 and 3) according to their functional parameters which they show during ICSI:

Patient(s)

A total of 813 gametes were collected from 104 patients.

Intervention(s)

Obtained dual oocyte grading score is tracked and correlated with fertilization rate (FR), cleavage embryo quality, blastocyst rate and implantation.

Main Outcome Measure(s)

After a morphological and functional examination, each oocyte receives two different grades whose combination gives a summarized score where A1 are the highest and C3 are with the lowest score.

Result(s)

63% of type A oocytes are Grade 1 and 7% Grade 3 versus 37% C1 and 30% C3.

FR in Grade A – 89% degeneration after ICSI only 1%; B 79% vs 5% and C – 51% vs 17% respectively.

INSTITUTE

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58% of Grade A day 3 embryos are with good quality vs 29% Group C ($p=0.001$)

Blastocyst rate is: Grade A 74%, B and C - 47%

IR Grade A – 60%; Grade C – 10% ($p=0.0037$).

Conclusions

Morphofunctional assessment of oocytes that have undergone ICSI, could be useful for non-invasive embryo selection tool by choosing blastocysts, delivered from higher graded oocytes.