MALE FACTOR INFERTILITY

Standardized diagram improves testicular cell identification

Intracytoplasmic sperm injection (ICSI) is one of the most commonly used artificial reproduction techniques (ART), accounting for >60% of assisted reproduction cases in Europe. It relies upon the retrieval of spermatozoa by testicular sperm extraction (TESE) and the correct identification of the extracted cells. As TESE tends to render testicular sperm immotile, distinguishing motile spermatozoa from nonsperm cells for effective ICSI can be a challenge. A team

from Japan have now investigated the accuracy and uniformity of testicular cell identification by ART specialists and determined whether the use of a standardized diagram could improve variability in cell identification.

TESE samples were used to produce cell suspensions for use in the study and were examined using phase contrast microscopy, differential interference contrast microscopy and fluorescence microscopy to identify spermatogonia, spermatocytes, round spermatids, elongating spermatids, spermatozoa, abnormal spermatozoa, Sertoli cells and Leydig cells.

The 10 specialists asked to identify the cell types were either embryologists or reproductive physicians with an average of 14 years' experience in reproductive medicine. They first reviewed the cells without the use of a reference diagram, and then reviewed the same cell sample slides 1 year later, using a standardized diagram to aid identification.

Concordance rates between the reference identifications and the reviewer responses were low at the first review—just 28.4% overall. Rates for identifying spermatogonia, round spermatids and Leydig cells were especially poor, at just 8.0%, 16.2% and 10.9%, respectively. However, use of the diagram at the second review increased the overall concordance rate to 59.1%, with significant improvements in the identification of spermatogonia (60.0%), round spermatids (36.3%) and Leydig cells (63.6%).

Considering the importance of accurate testicular cell identification in the success of ICSI, the study suggests that the use of a standardized diagram could be a valuable addition to TESE/ICSI protocols.

Annette Fenner

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