

Practice Recommendations of Sperm DNA Fragmentation Testing: Expert Commentaries by Invited Authors and Replies by Guest Editors

Contributors from Asia

Commentary

Commentary: sperm DNA fragmentation testing in action

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The expert panel proposed a guideline on the clinical utility of sperm DNA fragmentation testing (1). Rapid advancement in the field of sperm DNA testing over the last two decades was summarized and structurally presented by the four clinical scenarios in an evidence-based approach.

The role of male factor subfertility is often overlooked in the era of assisted reproduction. By contributing to half of the nuclear DNA content of the offspring, the implication of the male gametes was unrevealed not until recently (2). Sperm DNA fragmentation tests assess the quality of DNA package which carries the important genetic information of the offspring. The tests are, therefore, distinct and more significant than the conventional semen parameters (3). The value of sperm DNA testing is recently recognized by the American Society for Reproductive Medicine Practice Committee (4). It is the high time to have a practice guideline to summarize the past experience and direct further research of the unique advanced sperm function test.

The guideline serves a reference to all fertility specialists in understanding the potential benefit of sperm DNA fragmentation tests. It includes discussion on various methodologies of sperm DNA testing and possible treatment strategies in addition to the clinical utilization of the test. Varicocele and lifestyle factors are potentially reversible male factors that may lead to infertility by the deleterious effect on sperm quality. Sperm DNA

testing does not only demonstrate the possible etiological relationship, but help in monitoring treatment progress. The test result is likely to assist clinicians in proper patient selection and better define the indication of varicocele repair. The importance of male factors on fertilization and embryo development is, again, clearly illustrated by the association between pregnancy loss/failure of artificial reproduction and high sperm DNA fragmentation. One of the major huddles of clinical application of a test lies in the lack of treatment modalities. And the development of treatment strategies, e.g., the use of antioxidants and sperm selection methods, must go hand in hand with advancement of sperm DNA testing which was also included in the guideline.

The authors had organized the diverse information from numerous studies of the topic and translated the conclusion into an easy-to-understand language in the format of clinical case scenarios. The four case scenarios covered the spectrum of difficult clinical decisions that most of the fertility specialists had encountered in their clinical practice. I find the recommendations extremely valuable for assessment of male subfertility. The guideline provides solid evidence and insight to convince me and, I believe, many other clinicians about the usefulness of the test.

The text promotes the use of sperm DNA testing by providing clinicians with the essential knowledge. The widespread use of the test will, in return, provide a positive

feedback to its refinement by accumulation of clinical experience. Further research and understanding of the nature of different sperm DNA defects and its implication will expand the clinical value of the test. With the efforts from the authors and other experts in the field, sperm DNA fragmentation tests will be included in every fertility specialists' armamentarium for the evaluation of infertile couples in near future.

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Footnote

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