

Abstract

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Should seminal oxidative stress measurement be offered routinely to men presenting for infertility evaluation?

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OBJECTIVE: To determine if seminal oxidative stress measurement should be offered routinely to men presenting for infertility evaluation.

METHODS: We performed an extensive review of the English-language literature by searching MEDLINE for studies published between 1980 and 2007.

RESULTS: Research conducted during the last decade has provided growing support for the concept that excessive production of reactive oxygen species (ROS) is related to abnormal semen parameters and sperm damage. Routine semen analysis remains the backbone of clinical evaluation in male infertility, but determining the levels and sources of excessive ROS generation in semen is currently not included in the routine evaluation of subfertile men. However, the diagnostic and prognostic capabilities of seminal oxidative stress measurement exceed the capabilities of conventional sperm quality tests. An oxidative stress test may accurately discriminate between fertile and infertile men and identify those with a clinical diagnosis of male factor infertility who are likely to initiate a pregnancy if they are followed over a period of time. In addition, such a test can help select subgroups of patients with infertility in which oxidative stress is an important factor and those who may benefit from antioxidant supplementation. Although consensus is still required about the type and dosage of antioxidants to be used, rationale and evidence exist supporting their use in infertile men with elevated oxidative stress.

CONCLUSION: Consensus is growing about the clinical utility of seminal oxidative stress testing in infertility clinics, but standardization of protocols to measure ROS is crucial before introducing these tests into routine clinical practice.

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