

Abstract

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Semen quality and oxidative stress scores in fertile and infertile patients with varicocele.

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OBJECTIVE: To compare semen quality and levels of seminal oxidative stress among three groups: infertile men with varicocele, fertile men with varicocele, and healthy semen donors (controls) without varicocele.

DESIGN: Prospective study.

SETTING: Academic medical centers.

INTERVENTION: None.

PATIENT: Semen specimens were obtained from 21 infertile patients with varicocele, 15 fertile men with varicocele, and 17 healthy fertile men with normal semen characteristics.

MAIN OUTCOME MEASURE: Principal component analysis was applied to nine semen characteristics to provide a standardized semen quality score. Reactive oxygen species (ROS) production and total antioxidant capacity (TAC) were measured by chemiluminescence assays to create an ROS-TAC score.

RESULTS: The mean semen quality scores of the infertile patients with varicocele were lower than those of the control subjects but similar to those of the fertile men with varicocele. Compared with the healthy subjects, the infertile men with varicocele had higher ROS levels but lower TAC levels. They also had significantly lower ROS-TAC scores compared with control subjects, but the scores were not significantly different than those seen in fertile men with varicocele.

CONCLUSION: These findings not only provide us with valuable information regarding semen quality but also can serve as a warning that the fertility potential in fertile varicocele patients can decline due to oxidative stress.

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