UROLOGICAL SURVEY

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Besides the preventive approach as proposed by the authors, strategies to minimize oxidative stress have been studied. However, oral supplementation with antioxidants such as vitamin C and E, among others, is merely empirical to date (1).

Reference

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Lack of standardization in performance of the semen analysis among laboratories in the United States
Keel B, Stembridge T, Pineda G, Serafy N
Department of Obstetrics and Gynecology, Women’s Research Institute, University of Kansas School of Medicine, Wichita, Kansas, USA
Fertil Steril. 2002; 78:603-8

Objective: To determine the level of standardization in performance of the semen analysis among clinical laboratories in the United States.

Design: A survey was mailed to laboratories requesting information about the laboratory and performance of the semen analysis. Responses were received from 536 laboratories.

Setting: Clinical laboratories enrolled in the American Association of Bioanalysts Andrology Proficiency Testing Program.

Patient(s): None.

Intervention(s): None.

Main Outcome Measure(s): Agreement among laboratories.

Result(s): Sixty-one percent of respondent laboratories were part of an assisted reproductive technology program. The laboratories perform less than 50 (53%), less than 10 (25%), or less than 5 (16%) andrology laboratory procedures per month. The laboratories routinely report sperm count (94% of laboratories), motility (95%), morphology (85%) and forward progression (69%), and semen volume (96%) as part of the semen analysis. Only 64% of laboratories routinely report abstinence, and 60% of laboratories indicate the criteria used for sperm morphology on the report form. The most common lower limits of normality for sperm count and motility were >20 x 10(6)/mL (77% of laboratories) and >50% (59% of laboratories), respectively. Few laboratories performed quality control for sperm counts (29%), motility (41%), and morphology (41%).

Conclusion(s): These data indicate a significant lack of standardization in the performance and reporting of semen analyses among laboratories in the United States.

Editorial Comment
This is a study based on a questionnaire’s answers from U.S. clinical laboratories which perform semen analysis. It is interesting to observe that all laboratories participate in an accreditation and proficiency program. Therefore, it should be expected that such laboratories follow standardized guidelines. However, among many sperm parameters, only three microscopic ones (sperm count, percent motility, and morphology) are being
performed by most laboratories. In addition, 61% of all laboratories are part of an assisted reproductive technology program. In such places, often considered as state-of-the-art laboratories, the careful laboratory evaluation of the male partner by the semen analysis is critical, since the semen analysis is the most important routine test in the male infertility work-up.

The semen analysis must be performed according to the World Health Organization (WHO) criteria. The WHO publishes guidelines which are frequently updated. The most recent one was published in 1999 (1), and it includes important information, such as the normal values for each sperm parameter, as well as the tests that should be performed during a routine semen analysis. In the present study, 1/3, and nearly half, of all laboratories are not updated regarding the normal values for sperm count and motility, respectively.

In Brazil, the situation is even worse, since most clinical laboratories do not participate in any accreditation or proficiency program. In addition, urologists often receive sperm analysis reports from different laboratories in which the values for normality and the tests performed are quite different. Therefore, the present study gives us an important alert. Setting rules and guidelines to perform routine semen analysis, as well as to report results, which should be followed by all laboratories, would help many urologists in dealing with infertile patients in their offices. It has to be emphasized the semen analysis has a direct impact on the therapeutical choices, as well as on couples counseling.

Reference

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RECONSTRUCTIVE UROLOGY

Phenotypic and functional characterization of in vivo tissue engineered smooth muscle from normal and pathological bladders
Lai J-Y, Yoon CY, Yoo JJ, Wulf T, Atala A
From the Laboratory for Cellular Therapeutics and Tissue Engineering, Department of Urology, Children’s Hospital and Harvard Medical School, Boston, Massachusetts
J Urol. 2002; 168:1853-8

Purpose: The engineering of bladder tissue involves obtaining a biopsy from a host, expanding the cells, seeding them onto a matrix and implanting the cell-matrix composite back into the host. Clinically, cells used for these techniques may be harvested from abnormal bladders. It is not known whether abnormal bladder cells may be engineered into functionally normal tissue. We investigated the phenotypic and functional characteristics of tissue engineered bladder smooth muscle derived from patients with functionally normal bladders and functionally abnormal extrophie and neuropathic bladders.

Materials and Methods: Human smooth muscle cells derived from functionally normal bladders, extrophic bladders and neurogenic bladders were grown, expanded and seeded onto polymer scaffolds. Sixteen cell seeded scaffolds were analyzed in vitro and 40 cell seeded scaffolds were implanted in athymic mice. The tissue engineered constructs were retrieved and analyzed at 2 weeks and 2 months. The scaffolds were evaluated immunocytochemically, histologically, with organ bath studies and with Western blot analyses.