

Journal of Andrology, Vol 17, Issue 6 699-707, Copyright © 1996 by The American Society of Andrology

JOURNAL ARTICLE

The relation between reactive oxygen species and cytokines in andrological patients with or without male accessory gland infection

C. E. Depuydt, E. Bosmans, A. Zalata, F. Schoonjans and F. H. Comhaire

University Hospital Ghent, Department of Internal Medicine, Belgium.

The presence of various cytokines, namely hepatocyte growth factor (HGF), interleukin-1 receptor antagonist (IL-1 RA), and interleukins (IL-1 alpha, IL-6, and IL-8), as well as the production of reactive oxygen species (ROS) was investigated in seminal plasma of fertile and infertile patients in order to evaluate the possible value of measuring these substances for the diagnosis of male accessory gland infection, and to assess the possible relationship between oxidative stress and cytokines during leucocytospermia and male accessory gland infection (MAGI). Our findings indicate that all of the measured cytokines seem to be produced locally as well as by white blood cells (WBC) and that, due to the presence of higher numbers of WBC, accessory gland infection may exert a deleterious effect on sperm quality through the production of ROS and/or of particular cytokines such as IL-1 alpha, IL-1 RA, and IL-8. The most specific marker for a sensitivity of 95% in discriminating between cases with or without MAGI is the measurement of IL-6 in seminal plasma. In the absence of WBC several cytokines are constitutively produced and correlate with sperm concentration (HGF, IL-8), alpha-glucosidase (IL-6), and gamma-glutamyltransferase activity (HGF). The measurement of these cytokines in semen may provide clinically useful information for the diagnosis of male accessory gland infection, as well as in the absence of WBC where it can provide information about certain mechanisms of male reproductive function and dysfunction.

This article has been cited by other articles:



HUMAN REPRODUCTION UPDATE

[HOME](#)

K. Tremellen

Oxidative stress and male infertility--a clinical perspective

Hum. Reprod. Update, May 1, 2008; 14(3): 243 - 258.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

This Article

- ▶ [Full Text \(PDF\)](#)
- ▶ [Alert me when this article is cited](#)
- ▶ [Alert me if a correction is posted](#)

Services

- ▶ [Similar articles in this journal](#)
- ▶ [Similar articles in PubMed](#)
- ▶ [Alert me to new issues of the journal](#)
- ▶ [Download to citation manager](#)

Citing Articles

- ▶ [Citing Articles via HighWire](#)
- ▶ [Citing Articles via Google Scholar](#)

Google Scholar

- ▶ [Articles by Depuydt, C. E.](#)
- ▶ [Articles by Comhaire, F. H.](#)
- ▶ [Search for Related Content](#)

PubMed

- ▶ [PubMed Citation](#)
- ▶ [Articles by Depuydt, C. E.](#)
- ▶ [Articles by Comhaire, F. H.](#)



M. Fraczek, D. Sanocka, M. Kamieniczna, and M. Kurpisz
Proinflammatory Cytokines as an Intermediate Factor Enhancing
Lipid Sperm Membrane Peroxidation in In Vitro Conditions

J Androl, January 1, 2008; 29(1): 85 - 92.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)



J. A. Politch, L. Tucker, F. P. Bowman, and D. J. Anderson
Concentrations and significance of cytokines and other immunologic
factors in semen of healthy fertile men

Hum. Reprod., November 1, 2007; 22(11): 2928 - 2935.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)



M. Fraczek and M. Kurpisz
Inflammatory mediators exert toxic effects of oxidative stress on
human spermatozoa

J Androl, March 1, 2007; 28(2): 325 - 333.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)



P. T. K. Chan and P. N. Schlegel
Inflammatory Conditions of the Male Excurrent Ductal System. Part
II.

J Androl, July 1, 2002; 23(4): 461 - 469.

[\[Full Text\]](#) [\[PDF\]](#)



S. Basu, C. M. Lynne, P. Ruiz, T. C. Aballa, S. M. Ferrell, and N. L.
Brackett
Cytofluorographic Identification of Activated T-cell Subpopulations
in the Semen of Men With Spinal Cord Injuries

J Androl, July 1, 2002; 23(4): 551 - 556.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)



Q. Zhang, K. Shimoya, Y. Ohta, R. Chin, K. Tenma, S. Isaka, H. Nakamura,
M. Koyama, C. Azuma, and Y. Murata
Detection of fractalkine in human seminal plasma and its role in
infertile patients

Hum. Reprod., June 1, 2002; 17(6): 1560 - 1564.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)



E. Vicari and A.E. Calogero
Effects of treatment with carnitines in infertile patients with
prostatitis-epididymitis

Hum. Reprod., November 1, 2001; 16(11): 2338 - 2342.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)



HUMAN REPRODUCTION

▶ HOME

E. Vicari

Effectiveness and limits of antimicrobial treatment on seminal leukocyte concentration and related reactive oxygen species production in patients with male accessory gland infection
Hum. Reprod., December 1, 2000; 15(12): 2536 - 2544.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)



Journal of Medical Microbiology

▶ HOME

Y. PANNEKOEK, J. W. TRUM, O. P. BLEKER, F. VAN DER VEEN, L. SPANJAARD, and J. DANKERT

Cytokine concentrations in seminal plasma from subfertile men are not indicative of the presence of Ureaplasma urealyticum or Mycoplasma hominis in the lower genital tract
J. Med. Microbiol., August 1, 2000; 49(8): 697 - 700.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)



HUMAN REPRODUCTION

▶ HOME

E. Vicari

Seminal leukocyte concentration and related specific reactive oxygen species production in patients with male accessory gland infections
Hum. Reprod., August 1, 1999; 14(8): 2025 - 2030.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)



BIOLOGY of REPRODUCTION

▶ HOME

M. José de los Santos, D. J. Anderson, C. Racowsky, C. Simón, and J. A. Hill

Expression of Interleukin-1 System Genes in Human Gametes
Biol Reprod, December 1, 1998; 59(6): 1419 - 1424.

[\[Abstract\]](#) [\[Full Text\]](#)

[HOME](#) [HELP](#) [FEEDBACK](#) [SUBSCRIPTIONS](#) [ARCHIVE](#) [SEARCH](#) [TABLE OF CONTENTS](#)

Copyright © 1996 by The American Society of Andrology.