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FACULTEIT GENEESKUNDE EN FARMACIE

Doctoraat in de Medische Wetenschappen

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UITNODIGING

Voor de openbare verdediging van het
doctoraatsproefschrift van

Martine NIJS

donderdag 10 september 2009

U wordt vriendelijk uitgenodigd op de openbare verdediging van het proefschrift van

Martine NIJS

'Study of sperm parameters in assisted reproduction outcome'

Op donderdag 10 september 2009
om **17 uur** in **auditorium 5** van de
Faculteit Geneeskunde & Farmacie,
Laarbeeklaan 103, 1090 Brussel

Situering van het proefschrift

Conventional diagnostic sperm parameters like sperm concentration, motility and morphology are currently used to describe the quality of a patient's sperm sample, to predict fertilising potential and to choose the estimated most appropriate infertility treatment method. This dissertation investigated the possible clinical role of newer diagnostic sperm parameters for sperm integrity and functionality like sperm nuclear maturity, DNA integrity, sperm chromatin normality and sperm membrane interaction. Our research findings indicate that (1) patients with abnormal conventional sperm parameters have a higher chance for multiple abnormalities as diagnosed by the newer tests; (2) a short abstinence period negatively influences chromatin quality; (3) sperm binding to hyaluronic acid (HA) correlates to sperm morphology for patients undergoing an IVF/ICSI treatment. Sperm HA binding improves after sperm preparation and in vitro culture and is not influenced by freeze-thawing. Sperm HA binding correlates with embryo quality and miscarriage rate, but no threshold value for HA binding and outcome after an IVF/ICSI treatment could be established. (4) Sperm DNA maturity and chromatin normality show to have a limited predictive value for good fertilisation rates and obtaining a healthy pregnancy in IVF. ICSI outcome is not influenced by any of the conventional or newer sperm parameters. According to our research findings, the clinical value of these new sperm quality tests in addition to conventional sperm analysis seems to be limited.

Curriculum Vitae

Martine Nijs was born on September 9th 1961 in Genk, Belgium. In 1985, she graduated with great honours as Master of Biology at the Free University of Brussels and started her career as an IWNOL grant researcher at the Laboratory of Genetics-Anthropology. She studied the structure of microtubules in human spermatozoa under the guidance of Prof. M. Kirsch-Volders. As a next step, she joined the Reproductive Biology Research Unit of Prof. Dr. A. Van Steirteghem at the Free University of Brussels in 1985. She investigated inhibin expression in testicular tissue and isolation of blastomeres of mouse embryos. In 1991, Martine Nijs joined the team of Prof. Dr. R. Schoysman at the Schoysman Infertility Foundation in Vilvoorde as clinical embryologist in the human IVF laboratory. She helped to pioneer the microinjection of testicular spermatozoa. During this period, she guided the set up of several IVF units and specific IVF techniques over the world (Greece, Lebanon, Cyprus and South-Africa). In 1999, Martine joined the team of the Genk Institute for Fertility Technology of Prof. Dr. W. Ombelet at the Ziekenhuis Oost-Limburg in Genk as Senior Clinical Embryologist and Director of the Sperm Diagnostics and IVF laboratory. Her scientific findings on spermatogenesis and human embryology have led to several renowned presentations and invited lectures at national and international conferences. She has been named twice 'Best free communication'. Martine Nijs has published 16 peer reviewed articles as first author and 45 as co-author, as well as authored 5 chapters in books.