

 [Systems Maintenance, Saturday, 18th of July 2009](#)

[▶ My Profile](#) [▶ Log In](#) [▶ Athens Log In](#)



[Home](#) / [Medical, Veterinary and Health Sciences](#) / [Urology](#)

THE JOURNAL OF Sexual Medicine










[Journal of Sexual Medicine](#)

Volume 3 Issue 3, Pages 541 - 549

Published Online: 15 Feb 2006

© 2009 International Society for Sexual Medicine

-  [Get Sample Copy](#)
-  [Recommend to Your Librarian](#)
-  [Save journal to My Profile](#)
-  [Set E-Mail Alert](#)
-  [Email this page](#)
-  [Print this page](#)
-  [RSS web feed \(What is RSS?\)](#)

Published on behalf of



[Go to Society Site](#)

 [Save Article to My Profile](#)  [Download Citation](#)

[< Previous Abstract](#) | [Next Abstract >](#)

Abstract | [References](#) | Full Text: [HTML](#), [PDF](#) (Size: 287K) | [Related Articles](#) | [Citation Tracking](#)

ORIGINAL RESEARCH—ENDOCRINOLOGY

Vaginal Application of Testosterone: A Study on Pharmacokinetics and the Sexual Response in Healthy Volunteers

Mirjam Apperloo, MD*, Marlies Midden, MD*, Jolande van der Stege, MD*, Jan Wouda*, Annemieke Hoek, MD, PhD*, and Willibrord Weijmar Schultz, MD, PhD*

*Department of Gynecology, University Hospital Groningen, Groningen, The Netherlands

Correspondence to Mirjam Apperloo, MD, University Hospital—Obstetrics/Gynecology, Hanzeplein 1. Groningen. 9713 GZ, The Netherlands. Tel: (+31) 0503616161; Fax: (+31) (0)50-3611806; E-mail: m.j.a.apperloo@og.umcg.nl

KEYWORDS

Vaginal Application • Testosterone Propionate • Pharmacokinetics • Sexual Response • Vaginal Plethysmography

ABSTRACT



Introduction. Androgen substitution is advocated to improve sexual functioning in women with androgen insufficiency. Nevertheless, the role of androgens in female sexual functioning is not yet unraveled. Even less is known about changes in androgens and the female sexual response.

Aim. The aim of the study is to describe the pharmacokinetics of a single dose of vaginally applied testosterone. In addition, the study aims to gain more insight into the relation between acute changes in testosterone levels and the sexual response in women.

Methods. A randomized, double-blind, crossover study design was used to compare a single vaginal dose of testosterone propionate (2 mg) with placebo. Ten healthy premenopausal women participated. Serum levels of testosterone, free testosterone, and estradiol were measured. The sexual response was measured before application of medication and 4 and 8 hours after application. Erotic video fragments and erotic fantasies were used as stimuli. The genital sexual response was measured using vaginal plethysmography. The

subjective sexual response was measured using a visual analog scale.

Results. Vaginal administration of testosterone propionate induced a significant rise in serum testosterone levels and free testosterone levels, but not in serum estradiol levels. Peak levels were reached after 5.5 hours (range 2–12 hours). Mean peak levels of testosterone were 7.71 nmol/L after testosterone propionate and 2.99 nmol/L after placebo ($P < 0.005$). Mean peak levels of free testosterone were 0.12 nmol/L after testosterone propionate and 0.04 nmol/L after placebo ($P < 0.005$). Despite marked elevated levels of androgens this study was unable to detect a direct effect on the genital or subjective sexual response.

Conclusions. A single dose of vaginally applied testosterone propionate elevates serum levels of testosterone and free testosterone within 6 hours. Nevertheless, this acute rise in androgens has no effects on the female sexual response. **Apperlo M, Midden M, van der Stege J, Wouda J, Hoek A, and Weijmar Schultz W. Vaginal application of testosterone: A study on pharmacokinetics and the sexual response in healthy volunteers. J Sex Med 2006;3:541–549.**

DIGITAL OBJECT IDENTIFIER (DOI)

10.1111/j.1743-6109.2006.00212.x [About DOI](#)

Related Articles

- Find other [articles](#) like this in Wiley InterScience
- Find articles in Wiley InterScience written by any of the [authors](#)

Wiley InterScience is a member of CrossRef.



[Request Reprint](#)

[Copyright](#) © 1999-2009 [John Wiley & Sons, Inc.](#) All Rights Reserved.