

Topical Cream Application

Topical application of steroid hormones is the preferred method of administration due to excellent absorption and ability to bypass the liver, and therefore smaller dosages are required. Consequently there are an increasing number of prescriptions written for topical hormones every year.

One issue that comes up frequently at the lab is a patient's exposure to topical hormones being used by a loved one or household member. While this doesn't cause significant concern with some hormones such as progesterone, which has a relatively wide therapeutic window and has beneficial value with men as well as women, it can be a noteworthy problem with creams and gels that contain estrogens or testosterone. It is imperative that patients who are using topical hormones of any kind are aware these can be transferred to their spouse or even to their children, so proper precautions should be taken.

A recent case study of female twins shed some much needed attention to this matter. One of the twins was born with clitoromegaly and elevated testosterone levels. The second twin also began to develop clitoromegaly and had climbing testosterone levels during the first 24 months of life. Only after extensive testing and intervention had been attempted did the treatment team become aware of the fact that the twins' father was using Androgel, a prescription topical testosterone gel. He had inadvertently been exposing his wife and daughters to high levels of testosterone pre and postnatally. When this connection was made and the girls were protected from this exogenous exposure, their testosterone levels began to decline and eventually reached "normal" levels.

Spousal exposure can surprise patients as well as their physicians, who are often unaware of this common and known side effect of transdermal hormones. In addition to this case study with the twin girls, there have been many studies on the virilization of children as a result of a parent's topical testosterone use. It is crucial that patients using topical hormones of any kind are educated on the possibility of exposure. Transference to family members can be reduced and even eliminated by applying the creams/gels to areas that aren't as likely to come in contact with others, such as behind the knees. Additionally, transference may be reduced by thoroughly washing hands after applying transdermal hormones, advising family members not to share towels, and avoiding intimate contact for 20 minutes after application.

References

1. Patel A, Rivkees SA. "Prenatal Virilization Associated with Paternal Testosterone Gel Therapy" *Int J Pediatr Endocrinol.* 2010.
2. C. Brachet, J. Vermeulen, and C. Heinrichs, "Children's virilization and the use of a testosterone gel by their fathers," *European Journal of Pediatrics*, vol. 164, no. 10, pp. 646-647, 2005.
3. E. Cohen, O. M. Navarro, E. Reynolds, R. P. Schwartz, and P. Venkataramani, "Index of suspicion," *Pediatrics in Review*, vol. 28, pp. 419-425, 2007.
4. G. J. Kunz, K. O. Klein, R. D. Clemons, M. E. Gottschalk, and K. L. Jones, "Virilization of young children after topical androgen use by their parents," *Pediatrics*, vol. 114, no. 1, pp. 282-284, 2004.

5. Y. M. Yu, N. Punyasavatsu, D. Elder, and A. J. D'Ercole, "Sexual development in a two-year-old boy induced by topical exposure to testosterone," *Pediatrics*, vol. 104, no. 2, p. e23, 1999.
6. E. L. Rhoden and A. Morgentaler, "Risks of testosterone replacement therapy and recommendations for monitoring," *New England Journal of Medicine*, vol. 350, no. 5, pp. 482-492, 2004.