

Male Contraception

Combination of Hormone Implants Enhance Spermatogenesis Suppression in Men

A combination of progestin and testosterone created an enhanced suppressive effect on spermatogenesis in both Chinese and non-Chinese men, a recent study shows.

Numerous studies have shown that progestins can improve spermatogenesis suppression in men when combined with androgens. Because the long-term effects of androgens have not been fully determined, it is important to find the lowest possible effective dose of hormones for long-term contraceptive use in men.

Christina Wang and colleagues conducted a randomized trial in two centers (California, USA and China) with two treatment groups (non-Chinese and Chinese men, respectively, 40 subjects each group). The primary aim of the study was to compare the efficacy of the combination of the progestin levonorgestrel (LNG) with testosterone (T) implants to that by T implants alone on spermatogenesis suppression ("Levonorgestrel Implants Enhanced the Suppression of Spermatogenesis by Testosterone Implants: Comparison Between Chinese and Non-Chinese Men," *Journal of Clinical Endocrinology and Metabolism*, February 2006;91(2):460-70).

"As a secondary aim, we compared the efficacy of suppression of spermatogenesis of non-Chinese subjects recruited in Los Angeles, California, with that of Chinese men in Nanjing, Jiangsu, China, using the same study protocol," stated Wang et al. "The data from this study will provide useful information for the development of implants of modified androgens and progestins for a long-acting male contraceptive method."

The researchers data confirmed findings from previous studies (YL Gui et al, *J Androl*, 2004;25:720-27, etc.) that progestins enhance the effect of androgens. New for this study, Wang et al. confirmed the usefulness of long-acting implants as the delivery mechanism for the hormones.

Both treatment groups showed that LNG plus T caused more suppression of spermatogenesis to severe oligozoospermia during the treatment period than did T implants alone. In Chinese men, however, LNG plus T, or T alone achieved oligozoospermia in more than 90% of the test subjects. In the non-Chinese men, only 59% of the T alone group achieved severe oligozoospermia. The non-Chinese group achieved 89% with LNG plus T, reported the authors.

Implant extrusion occurred in six of the men. The most common adverse side effects were acne and increased hemoglobin.

"In conclusion, our study showed that T alone or in combination with LNG delivered by implants resulted in marked suppression of spermatogenesis," stated Wang et al. "Implants of androgen and progesterone combination may be developed into a practical method of male contraception provided that fewer implants can be used, serum hormone levels can be maintained at a stable physiological range, and insertions can be simplified with minimal implant extrusions. To achieve this, more potent androgens, such as 7 α -methyl-19-nortestosterone, or selective androgen receptor modulators have to be developed to be used in combination with a more potent progestin, such as etonogestrel, or other selective progesterone receptor modulators."

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Male Contraception

Testosterone with Transient Testicular Warming Acts Synergistically in Monkeys

In an effort to find an effective and reversible male contraceptive method, researchers found that transient warming of the testes combined with a testosterone (T) implant acted synergistically in the suppression of spermatogenesis in cynomolgus monkeys.

Earlier data derived from rodent studies and conducted by the same researchers showed the additive effects of warming with testosterone (YH Lue et al., *Endocrinology*, 2000;141:1414-24).

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