

Pengaruh penyuntikan kombinasi Testosteron enantat (Te) dan Depot Medroksi Progesterone Asetat (DMPA) setiap bulan selama satu tahun terhadap kadar hormon reproduksi dalam serum pria pertil

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Abstrak

ABSTRACT

The Effect of Combination of Testosterone Enanthate (Te) and Depot Medroxyprogesterone Acetate (DMPA) Monthly Injection during a Year to Reproduction Hormone Levels in Serum of Fertile Men Scope and methods of study: The effectiveness and safety of hormonal contraception for men have not been achieved. The development of methods to control fertility in men was more complex than in women. The objective of hormonal contraception in men is to cause a decrease in spermatozoa production, which should be reversible. Spermatogenesis is under the control of intra-testicular testosterone, which in turn is regulated by the gonadotropins FSH and LH.

Previous studies in which a combination of TE + DMPA, at a low dose (100 mg TE + 100 mg DMPA) and high dose (250 mg TE + 200 mg DMPA), were injected monthly for 3 months suggested a good prospect: sperm production were suppressed without disturbing the libido. However, neither of these could produce azoospermia consistently, and the effective dose was still uncertain. The present study was carried out to determine the effects of TE and DMPA combination, at low and high doses, on 20 fertile men. The drug combination was given as intra-muscular injection monthly for 6 months (suppression phase) followed by another 6 months of maintenance phase. Serum FSH, LH and testosterone were determined by radioimmunoassay (DPC) prior to treatment, and every 3 months until the twelfth month. The study was a randomized control trial by factorial design (time and dosage). Statistical analysis was by two-way ANOVA.

Findings and conclusions: The treatment of TE+DMPA in combination of low dose and high dose caused decreased male reproductive hormone levels. No difference was observed between the two treatments ($p > 0.05$) by LH: 3.06 mg/mL, FSH: 4.01 mg/mL, testosterone: 3.16 mg/mL at low dose and LH: 2.81 mg/mL, FSH: 4.03 mg/mL, testosterone: 2.91 mg/mL at high dose. The hormone levels in the 3rd month were significantly lower compared to those of the pretreatment period ($p < 0.01$), and they were consistently decreased during the 12 months of observation by LH: 2.95 mg/mL, FSH: 3.14 mg/mL, testosterone: 2.76 mg/mL of different with baseline (0th month) to LH: 6.06 mg/mL, FSH: 11.06 mg/mL, testosterone: 7.18 mg/mL up to 12th month. While starting at the 9th (LH: 1.77 mg/mL, FSH: 1.87 mg/mL, testosterone: 1.62 mg/mL) and 12th month (LH: 1.66 mg/mL, FSH: 1.80 mIU/mL, testosterone: 1.55 mg/mL) the decrease of hormone levels were seen but not significant ($p > 0.05$) with 6th month (LH: 2.25 mg/mL, FSH: 2.20 mg/mL, testosterone: 2.05 mg/mL). It was concluded that injection of the combination of TE and DMPA, of low and high doses, every month for 12th months could decrease the serum level of LH, FSH and testosterone in fertile men. The effect was suppression of the hormone levels and could be maintained during the 12 months period of observation.

ABSTRAK

Ruang lingkup dan cara penelitian : Kontrasepsi hormon untuk pria yang efektif dan aman sampai sekarang belum diperoleh. Hal ini disebabkan pengembangan cara pengendalian kesuburan pria lebih sulit daripada wanita. Metoda kontrasepsi hormon untuk pria bertujuan untuk menekan produksi sperma secara reversibel yaitu melalui hambatan sekresi hormon gonadotropin, sehingga kadar testosteron intra-testis menjadi rendah. Spermatogenesis dipengaruhi oleh kadar gonadotropin dan testosteron yang normal sedangkan pembentukan testosteron dari sel Leydig berkaitan dengan kadar LH dan FSH yang normal pula.

Penyuntikan kombinasi dosis rendah 100 mg TE + 100 mg DMPA dan tinggi 250 mg TE + 200 mg DMPA tiap bulan selama 3 bulan oleh peneliti terdahulu dianggap mempunyai prospek yang baik yaitu dapat menekan produksi sperma dan potensi sakit serta libido tidak terganggu, namun kedua kombinasi obat tersebut belum dapat menimbulkan azoospermia yang konsisten sehingga efektivitas dari dosis obat belum diketahui. Untuk memantau efektivitas dalam penggunaan kedua dosis TE dan DMPA perlu dilakukan penelitian dengan modifikasi lama pemberian dari kombinasi dosis rendah dan tinggi pada 20 pria fertil terhadap penurunan kadar LH, FSH dan testosteron di serum selama 6 bulan (fase penekanan) dan 6 bulan berikutnya (fase pemeliharaan). Pengukuran kadar hormon dilakukan tiap 3 bulan sekali dengan metoda RIA (Radioimmunoassay). Rancangan percobaan menggunakan uji klinis acak terkontrol berpola faktorial (waktu dan dosis). Analisis statistik dengan uji sidik ragam 2 faktor.

Hasil dan kesimpulan: Penyuntikan kombinasi dosis rendah maupun tinggi menyebabkan penurunan kadar LH, FSH dan testosteron serum pria fertil. Penurunan kadar hormon tersebut akibat pemberian kedua dosis TE dan DMPA tidak berbeda ($p > 0.05$) baik pada dosis rendah yaitu LH: 3.06 mg/mL, FSH: 4.01 mg/mL, testosteron: 3.16 mg/mL maupun dosis tinggi LH: 2.81 mg/mL, FSH: 4.03 mg/mL, testosteron: 2.91 mg/mL. Bulan ke 0, 3, 6, 9 dan 12 memberikan pengaruh ($p < 0.01$) terhadap penurunan kadar hormon mulai bulan ke 3 yaitu LH: 2.95 mg/mL, FSH: 3.14 mg/mL, testosteron: 2.76 mg/mL dibanding kadar awal (bulan ke 0) yaitu LH: 6.06 mg/mL, FSH: 11.06 mg/mL, testosteron 7.18 mg/mL dan berlanjut terus sampai bulan ke 12. Pada bulan ke 9 (LH: 1.77 mg/mL, FSH: 1.87 mg/mL, testosteron: 1.62 mg/mL) dan bulan ke 12 (LH: 1.66 mg/mL, FSH: 1.80 mg/mL, testosteron: 1.55 mg/mL) walaupun terjadi penurunan namun tidak berbeda ($p > 0.05$) dengan bulan ke 6 (LH: 2.25 mg/mL, FSH: 2.20 mg/mL, testosteron: 2.05 mg/mL). Berdasarkan hasil ini dapat disimpulkan bahwa penyuntikan kombinasi TE+DMPA pada dosis rendah dan tinggi setiap bulan pada pria fertil dapat menurunkan kadar LH, FSH dan testosteron di serum secara konsisten selama 6 bulan dan penurunan tersebut dapat dipertahankan secara konsisten selama 6 bulan berikutnya.