Pencarian Dosis Minimal DMPA dalam Penekanan Spermatogenesis dan Pengaruh Cabe Jawa terhadap Peningkatan Hormon Testosteron Tikus Kastrasi dan Disuntik DMPA

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Background

Man will be the new focus for the family planning program (family planning). Vasectomy and condom is the established method designed for the man, however this method proved some inconvenient and psycological effect that will be appear as permanent effect. One of alternative the development of new safe, effective and acceptance by is hormonal treatment. The target of hormonal treatments the control of the process of spermatogenesis through the axis hypothalamus physical testes, that one of this function is depot medroxy progesterone acetate (DMPA).

However, until this was not yet known by how many minimal DMPA doses that could suppress spermatogenesis by reducing the concentration and viability of the sperms the vase deferens, the level of testosterone hormone, the body weight, blood chemistry? Therefore, must be carried out by the research that aimed at look for and knowing the influence of the minimal DMPA dose on the concentration and the viability of the sperms, the level of testosterone hormone, the body weight, and male chemistry of rat blood (*Rattus norvegicus* L.) Strain Sprague-Dawley as the model animal.

Hypothesis

From this research could be upheld by the hypothesis that the injecting of the minimal DMPA dose for 18 weeks against the male rat could cause: 1. The decline in the sperms concentration the vase deferens, 2. The decline in the sperms viability the vase deferens, 3. The decline in the level of testosterone hormone, 4. Did not influence the body weight, 5. Did not influence blood chemistry.

Benefit

The result of this research (study) can be using to solve of fertility problem in man and combined with “java chilly” as the future contraception. Then, this result also make more alternative safe, effective and reversible contraception method that accepted by community.

Material and methods

The trial mouse acclimated in the animal pen for 30 days, was given ate and the drink of the standard. After acclimatization, some rat could be castration (was castrated) by means of operate on and cutting off the vase deferens the testes and afterwards the rat were restored until recovered (for the treatment of the castration), whereas for the other rat continue to be acclimated before injected with DMPA. Before the DMPA injecting, the rat was weighed and labeled as the marker in order to be not wrong in giving the DMPA. Rat body weight was carried out every week up until the 18th week after injecting of DMPA dose.

The injecting with DMPA in accordance with the dose of the treatment I (D I = 1.25 miligram DMPA), the treatment II (D II = 0.625 miligram DMPA), and the treatment III treatment (D III = 0.313 miligram DMPA).The injecting was carried out intramuscularly to the right or left thigh the rat. The injecting was carried out by as many as 2 times, the first injecting were carried out in the week 0 and the injecting to-two was carried out in the 12th week. Afterwards the rat continued to be maintained and treated up until the 18th week to be preparated.

After 6 weeks post the DMPA injecting of the 2, the mouse was drugged with aether, preparated and was operated on for the taking of the data. Collecting the seminal plasma from the vase deferens to count the sperms concentration and the sperms viability. For the taking of blood was carried out used the syringe terumo syringe 5 ml to the vena jugular. Blood was afterwards separated to 2 parts, some for the grating of the level of testosterone hormone and the rest for the inspection of blood chemistry. The grating of the level of hormone was done technically radio immuno assay (RIA).

The data that was obtained afterwards was analyzed normality and homogeneity before being carried out by the test analysis of variance. The abnormal or did not homogeneous data transformed with $Y=\sqrt{x}$. If the data was still abnormal or did not homogeneous, then the data was tested with statistics non-parametric Kruskal-Wallis.

Results

The data that was received from counting of the sperms concentration of the vase deferens and the sperms viability of the vase deferens was known that the DMPA injecting could influence the sperms concentration of the vase deferens and the sperms viability of the vase deferens. From results of the Kruskall Wallis test, showing that the sperms concentration of the vase deferens showed that very significant difference ($p<0.01$) between castration group and the treatment. The next one of the data counting of the level of testosterone hormone were known that the DMPA injecting could decrease the level of testosterone hormone of rat that the injecting by DMPA. Analysis of the Kruskall Wallis test showed that the level of testosterone hormone showed the very significant difference ($p<0,01$) between the castration group and the treatment.

From counting body weight data before the DMPA treatment and while 5 treatment months could be known that the DMPA injecting in various doses for 18 weeks did not influence the body weight. From results of the ANOVA test showing that the body weight did not show the significant difference ($p>0.05$) between control group (the castration) and the treatment of DMPA.

Then, from counting of blood chemistry, the data that was received after the rat was treated with DMPA while 18 weeks could be known that the DMPA injecting in various doses for 18 weeks did not influence blood chemistry like erythrocyte, HDL, SGOT, SGPT. The ANOVA test showed that erythrocyte, HDL, LDL, SGOT, SGPT did not show the significant difference ($p>0.05$) between control group (the castration) and the treatment of DMPA. The appearance of other blood chemistry like hemoglobin, haematocrite, LDL, cholesterol total, and triglycerides, also showed the trend to be not influence was significant, where after being carried out by the test of Kruskal-Wallis was obtained that the data did not show the significant difference ($p>0,05$) between the control group (the castration) and the DMPA treatment.

Conclusion

From this research was obtained it was concluded that the DMPA injecting in the dose 1.25 mgram: could reduce the sperms concentration and the sperms viability, the level of testosterone hormone, but did not influence of the body weight (for 18 treatment weeks) and blood chemistry (erythrocyte, hemoglobin, haematocrite, HDL, LDL, cholesterol total, SGOT, SGPT and triglycerides).