Pengaruh pemanasan testis mencit in vivo secara berulang dengan menggunakan air terhadap fertilitas mencit

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Abstrak

ABSTRAK
Ruang lingkup dan cara penelitian:

Berbagai amcam cara dilakukan orang untuk menghilangkan kelelahan setelah bekerja keras, antara lain dengan berendam diri dalam air hangat dalam waktu tertentu, atau mandi sauna. Jika peerjaan ini dilakukan berulang kali, suhu sekitar testis akan seringkali mengalami peninhkatan. Proses spermatogenesis berlangsung normal bila suhu testis lebih rendah dari suhu badan. Kerusakan akibat peningkatan suhu testis in vivo bersifat selektif terhadap tingkat perkembangan sel-sel germinal, sehingga proses spermatogenesis terganggu. Tujuan penelitian ini untuk mengetahui apakah pemanasan testis mencit in vivo, masing-masing pada suhu air 40, 41, dan 42 deraat C selama 10 menit yang diulang tiga kali dengan selang waktu satu siklus epitel seminiferous, akan berpengaruh terhadap fertilitas mencit. Penelitian dilakukan dalam 5 kelompok, masing-masng 10 ekor mencit jantan. Kelompok I, kontrol tanpa perlakuan; kelompok II, kontrol hanya dibius; kelompok III, dibius + 40 derajat; kelompok IV, dibuis + 41 C; kelompok V, dibius + 42 C. perlakuan ini dilakukan selama 10 menit yang diulang tiga kali dengan selang waktu satu siklus epitel seminiferous.

Hasil dan kesimpulan:

Kelompok III tidak menunjukkan pengaruh bermakna terhadap berat testis, jumlah sperma motil, persentase sperma abnormal, maupun jumlah anak yang dilahirkan dibandingkan dengan kontrol. Kelompok IV menunjukkan penyusutan berat testis, umlah sperma motil, peningkatan persentase sperma abnormal, dan penurunan jjumlah anak yang bermakna dibandingkan dengan kontrol. Pada kelompok V, selain penyusutan berat testis ang bermakna, tidak didapatkan spema dalam tubulus seminiferous. Jadi kesimpulannya, pemanasan 40 derajat C tidak berpengaruh terhadap fertilitas mencit, sedahkan pemanasat 41 dan 42 berpengaruh terhadap fertilitas mencit.
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ABSTRACT
Scope and Method of study:

Several traditional habits are applied to refresh the body, releasing fatigue or stiffness after working hard all day, e.g. by soaking the body in warm water or by taking sauna. If performed frequently, the temperature around the testis should increase and it might cause a selective demage to germinal cells, disturbing the process of spermatogenesis. The purpose of this study was to evaluate the fertility of mice after application of heat on the testis. Mice were divided randomly into 5 groups of 10 mice each. The first group served as

untreated control, with no treatment at all. The second group was a treated control, treated with anesthetic, but not exposed to hear the treated groups were anesthetized, and the testis exposed to temperature of 40 C (3rd group), 41 C (4th Group), and 42 C (5th group), respectively, for 10 minutes each in a special devides water bath. The treatment was repeated 3 times at an interval of 9 days or one cycle of the seminiferous epithelium.

Findings and conclusions:

The result showed that in the 3rd group no significant effect of heat was found on the weight of the testis, the number of motile sperm, percentage of abnormal sperm, and noumber of offspring comparet to the control group. In the 4th gorup, however the weight of testis, number of motile sperm, and mean number of offspring were significantly reduced. The percentage of abnormal sperm was significantly increased as compared to control groups. It is interesting to note that in the 5th group of mice, no sperm was found in the seminiferous tubules. In conclusion, there was no effect on the fertility of mice by heating the testis to a temperature of 40 C. however, the fertility was decreased significantly after exposure to 41 and 42 C.