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ANTIANDROGEN EFFECT OF TADENAN PRE-TREATMENT ON DIHYDROTESTOSTERONE (DHT) INDUCED PROSTATE GROWTH.

Aims of Study:

To evaluate the effect of TADENAN (Pygeum Africanum extract) pretreatment on the micturition characteristics of conscious and anesthetized rats consequent to DHT administration and examine the influence of such treatment on the relative growth of the ventral and dorsal lobes of the prostate.

Methods:

Studies using 40 adult SD male rats were carried out over a 7 week period. These animals were treated with DHT, 1.25 mg/kg/sc. dissolved in peanut oil and/or TADENAN(TAD) 100 mg/kg/P.O. dissolved in sesame oil. Rats were divided into 4 groups; (I) Control: vehicle only; (II) DHT, administered during week 3-4; (III) TAD pretreatment, administered during week 1-2, followed by the combined administration of DHT+TAD, during week 3-4 and TAD, during week 5-7; (IV) continuous TAD treatment for 7 weeks. Micturition of conscious rats placed in metabolic chambers was monitored over a period of 6 hours, by measuring the volume voided (V), frequency (F) of micturition and the rate of urine production(D). In anesthetized rats, cystometrograms (CMGís) were done at the end of 7 weeks to evaluate: bladder stiffness, incidence of overactivity, urethral opening pressure (Puo) during micturition, max. detrusor voiding pressure (Pmax), CMG volume (v), duration (t) and frequency (f) of micturition. Following the CMG studies, the rats were sacrificed and the ventral and dorsal prostate, and urinary bladder were removed and wet weights obtained.

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Results:

Micturition studies in conscious rats: Compared to baseline values, DHT or DHT+TAD did not produce significant changes in the mean values of V, but reduced F by 31and 38% ($p<0.05$) respectively. TAD given alone produced a 48% increase ($p<0.001$) in V. It was also found that TAD produces a 27% increase ($p<0.05$) of the rate of urine production. CMG studies in anesthetized rats show that DHT produces micturition characteristics similar to obstruction which are associated with a 53% increase ($p<0.005$) in Puo, a 108% increase ($p<0.005$) in t, and a 125% increase in f. Bladder overactivity, observed 13% of the time in controls, increased to 69% of the time with DHT and was reduced to 42% with DHT+TADand to 17% with TAD. The DHT+TADand TAD pretreatment data show no significant difference from controls suggesting that in the presence of TAD the effects of DHT were negated. Prostate and bladder wet weight: Compared to controls, the total prostate weight of DHT and DHT+TAD pretreated rats increased by 27% ($p<0.005$) and 17% respectively. Prostate weight of the TAD pretreated rats was decreased to values that were lower than controls. Growth, of the ventral lobes, was suppressed 36% ($p<0.005$) in group IIIin the presence of TAD. There was no significant change in bladder weight between any of the groups evaluated.

Conclusions:

These results demonstrate that TAD pretreatment significantly reduces the "obstructive" effects of DHT on the micturition characteristics of both conscious and anesthetized rats. In addition it was found that TAD counteracts the hormone-induced enlargement of the prostate. Finally there is evidence to suggest that TAD alone reduces prostate weight in the ventral but not dorsal lobe.