Effect of Tentex forte and Speman Individually and in Combination on Gonadal Structure in Rats

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INTRODUCTION
Sexual disorders in human beings and in animal species are more common than they are thought to be. In human patients stresses and strains of modern living may make an individual sexually neurasthenic and functionally impotent. This may lead to a train of psychological complexes leading to sexual inferiority and its allied syndromes. Male animals have often been reported to yield semen of poor quality in spite of optimal management conditions including the best feeding schedules.

The treatment of certain sexual disorders with gonadal and/or pituitary hormones have not yielded favourable results (Hotchkiss, 1944; Grollman, 1964). There is ample evidence to indicate that such treatment may alter the hormonal balance of the body and may prove detrimental to health (Swanson et al, 1950). In the man, injections of testosterone caused disappearance of the Leydig cells, atrophy of the tubules, arrest of spermatogenesis and pronounced hyalinization of the basement membrane (Heller et al., 1950).

Recently, several non-hormonal preparations have been used to correct such sexual disorders. Two such preparations available are Tentex forte and Speman, which have been reported to be of great value in sexual disorders of human beings (Sahu, 1962; Agarwal and Mittal, 1969; Vyas et al., 1970).

The present investigation was undertaken to study the effect of Tentex forte and Speman on endocrine and reproductive organs of male rats. The use of animal species under controlled conditions minimized the psychological interference and revealed physio-pharmacological properties.

MATERIALS AND METHODS
Three to four months old male rats weighing from 150 to 200 g were maintained on rat pellet ration (Hindustan Lever Ltd., Bombay). The drugs were administered in powdered feed pellets, in the following concentrations:

- Tentex forte: 0.5%, 1% and 2%
- Speman: 0.5% and 1%
- Tentex forte plus Speman: 0.5% of each
The drugs were fed for 30 days, after which the animals were sacrificed and pituitary, adrenals, testes, ventral prostate and seminal vesicles were removed, weighed and examined histologically.

**RESULTS**

Tentex forte: Histologically, the testis of rats given Tentex forte at 1.0% and 2.0% level of feeding schedule revealed an increase in the overall activity: the lumens of the seminiferous tubules contained apparently more sperms, while the interstitial tissue was less apparent. The results with 2.0% Tentex forte feeding were similar to those of 1.0% feeding. These results suggested an increased spermogenesis, following the administration of Tentex forte (Fig.1, A and B) as compared to control group (Fig.1, A and B) as compared to control group (Fig.1, D). The prostate gland cells of the animals treated with 0.5% Tentex forte (Fig.2, A) showed an increased secretory activity of cells as compared to control animals (Fig. 2, B).

**Speman:** The effect of Speman 1% was as follows: Histologically testis showed more compactness, having less space in between the seminiferous tubules (Fig. 1, C) and the glandular tissue of seminal vesicles was more clear (Fig.3, A) than that of control (Fig.3, B) while adrenal and ventral prostate did not show any significant effect.

**Combined effect of feeding Speman and Tentex forte:** A combination of 0.5 per cent each of Speman and Tentex forte was also found to be equally effective: the seminiferous tubules were better developed and there was good evidence of spermatogenesis in experimental animals as compared with the control. (Figs. 4A and 1 D).

**DISCUSSION**

The present investigation indicated that administration of Tentex forte and Speman either alone or in combination, produced hypertrophy of the seminiferous tubules. The interstitial tissue has been reduced while the tubular volume was increased. The prostate gland showed more fluid-filled alveoli, while the cells of the seminal vesicle had hypertrophied.
Figure 1A: Photomicrograph of the testis of a rat given 1% Tentex forte; showing evidence of increased spermatogenic activity in the lumens of the seminiferous tubules. The interstitial tissue is also less apparent. (H&E stain, 100x)

Figure 1B: Changes similar to that in 1A seen in this photomicrograph, when 2% Tentex forte level was used. (H&E stain, 100x)

Figure 1C: Testis of a rat given 1% Speman: histologically, the testes show more compactness and less space between seminiferous tubules. (H&E stain, 100x)

Figure 1D: Photomicrograph of testis of a rat from control group given unmedicated feed. (Common control for Tentex forte and Speman) (H&E stain, 100x)
Figure 2A: Photomicrograph of ventral prostate of rat treated with 0.5% Tentex forte: gland cells showing an increased secretory activity. (H&E stain, 40 x)

Figure 2B: Photomicrograph of ventral prostate of rat from control group given unmedicated feed: gland cells showing less marked secretory activity. (H&E stain, 40 x)

Figure 3A: Photomicrograph of seminal vesicle of a rat fed 1% Speman; the glandular tissue is more clear. (H&E stain, 100 x)

Figure 3B: Photomicrograph of seminal vesicle of a rat from control group given unmedicated feed showing insignificant changes in the histological picture. (H&E stain, 100 x)
Though similar changes in the testes of rats have been noted after the administration of testosterone (Ludwig, 1950), the absence of any effect on the weight of the seminal vesicles, prostate and testes indicate a different mechanism of action in stimulating seminiferous activity.

Sex steroids affect pituitary gonadotropins (Davidson, 1966). Whether Speman or Tentex forte have altered the hyphophyseal gonadotropin levels has not been ascertained. The possibility of this type of activity seems to be low, considering the absence of any weight deviation in the experimental rats.

In human patients, Speman has been claimed to increase the sperm concentration and sperm motility (Bhargava, 1970, Vaze, 1970). It has been found to be useful in nocturnal emission and premature ejaculation (Heilig, 1968). Tentex or Tentex forte have been recommended to increase libido (Vyas and Saxena, 1968).

Certain investigators have recommended combined therapy of Tentex forte and Speman (Bhargava, 1970; Vaidya, 1970). Increased secretory activity, together with the indication that Speman administration causes increased contraction of the seminal vesicle and its complete evauation (Ranade and Raje, 1958), suggest that these drugs can increase seminal plasma. Sperm concentration has been found to be increased in bulls (Singh, Sud and Bahga: unpublished data). It is therefore, possible that these drugs might be used in sexual disorders.

**CONCLUSION**

In male rats, Speman and Tentex forte stimulated the activity of seminiferous tubules, prostate and seminal vesicle. Apparently there were increased number of spermatozoa in the tubules after drug administration than in control rats.

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