

LETTER TO THE EDITOR

ASSESSMENT OF OESTROGENICITY OF NEEM LEAF EXTRACT IN RATS

Sir,

(Received on September 17, 1985)

Freshly prepared aqueous extract of crushed green leaves of *Azadirachta Indica* (Neem) has already been shown to have significant antifertility effect in male mice (1, 2).

As a prelude of work on elucidation of mechanism of antifertility effect, it is essential to test for oestrogenicity of the extract.

Immature female rats (20 days old) were divided into three groups (control, experimental and standard) each of 10 rats. On 20th day all animals were bilaterally ovariectomized under ether anaesthesia through an incision 1 cm long placed midway between the last rib and the knee about 1 cm lateral to the spinal muscle. Ovaries were identified, removed and incision sutured in two layers. Animals were used after 7 days. Five g of shade dried neem leaf powder was churned in 50 ml of glass distilled water in a grinder for 1 min and then filtered through fourfold gauze piece. Experimental group of animals were dosed with plant extract thus prepared (0.5 ml orally) twice daily for three days. Control group received normal saline and standard group received normal ethinyl oestradiol (100 µg/kg/day, p.o.) for 3 days.

One day after the last dosing (i.e. on day-11). The animals were sacrificed. The status of the vagina (open or closed), the type of cells in the vaginal smear, the weight of the uterus and adrenals were recorded.

Results (Table I) indicate that there was no significant loss or gain in weight due to Neem leaf extract during the treatment. In standard (oestrogen) group all animals showed open vagina and presence of epithelial cells, where as in experimental

TABLE I : Effect of Neem leaf extract and of ethinyl oestradiol on bilaterally ovariectomized Immature female rats.

Sr.	Parameter	Control (Saline treated)	Experimental (Neem extract)	Standard (Oestrogen treated)
1.	Mean body weight before treatment (g) \pm S.D.	20.00 \pm 1.67	20.4 \pm 2.07	20.2 \pm 1.61
2.	Mean body weight (g) \pm S.D. at autopsy	23.8 \pm 0.75	24.4 \pm 0.97	23.7 \pm 0.78
3.	Status of Vagina : Number open/closed	1/6	Nil/7	*7/7
4.	Number showing oestrogenic activity in vaginal smear	1/6	Nil/7	*7/7
5.	Mean dry uterine weight mg \pm S.D.	35.00 \pm 4.33	32.9 \pm 0.89	*43.95 \pm 0.93
6.	Mean Ratio Uterine weight/body weight mg/gm \pm S.D.	1.47 \pm 0.22	1.34 \pm 0.07	1.65 \pm 0.93
7.	Mean Adrenal weight (mg) \pm S.D.	21.00 \pm 3.41	19.30 \pm 4.11	20.15 \pm 2.89

See text for details of treatment. *Differs significantly (P < 0.01) from control.

group (Neem leaf extract) absence of open vagina, absence of epithelial cells in the vaginal smear and incomplete development of uterus were noted. This clearly indicates absence of oestrogenic activity in neem leaf extract.

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