Asian Journal of Chemistry Vol. 19, No. 6 (2007), 4936-4938

NOTE

Post Coital Antifertility Activity of *Nigella sativa*

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The methanolic extract of seeds of *Nigella sativa* prevented pregnancy in female albino rats when administered orally on days 1-3, 4-5 and 6-7 post coitum, respectively. At a dose of 2 g/kg body weight it inhibited implantations 100%. The preparation also shows significant abortifacient activity inducing foetal resorption in pregnant rats at the dose of 2 g/kg body weight, on days 14-16 post coitum.

Key Words: *Nigella sativa*, Antifertility and Abortifacient activities.

Medicinal plants[1-3] have been used by the women of rural natives especially by the tribes before coitus for interception. However, these reports lacked scientific assessment. Large number of plants have been tested at different centres[4-12] but no single plant is yet available which can be used by a woman to interrupt pregnancy. Although few plants have shown promisingly good results, but these have failed in the course of other investigations. With all these consequences, the research is still continued to screen out potent antifertility plant. Present paper deals with the screening of extracts of seeds of the plant *Nigella sativa* (family-Ranunculaceae) for antifertility and abortifacient activities in rats.

Nigella sativa is often cultivated in Punjab and Bihar. Seeds of *Nigella sativa* were purchased from local authentic Ayurvedic dealers. The drug was identified botanically. The seeds of *Nigella sativa* were dried in shade and extracted with methanol, chloroform and ethyl acetate successively[13] and administered orally (p.o) with the help of an intragastric catheter. Adult healthy virgin female rats of Wister albino strain (150 ± 10 g) were selected from the animal colony of the department. These animals were kept under uniform husbandry condition of light (14:10:L:D) and temperature 26 ± 2°C and were fed Lipton, Bombay, India, Gold Mohur pelleted diet and water. The vaginal smears of these animals were examined daily and rats in the proestrus stage were selected. Antiimplantation activity of various extracts of the seeds of *Nigella sativa* was determined using a laboratory standardized method[13]. Briefly, it includes the pairing of proestrous

females with males of proven fertility (trio mating), feeding of seed extracts at suitable dose levels for 7 d after coitus (1-7 d post coitum) followed by laparotomy on 10 d. Absence of implantation sites indicated activity.

To assess abortifacient activity for the various extracts, mated females were laparotomized on day 10 p.c and implantation sites in both the uteri were counted. The abdomen was sutured and animals were left in cages. These animals were fed with plant extracts at suitable doses of 2 g/kg body weight for 3 d (14-16 d p.c) and then laparotomized on 18 d. The resorption of foetuses indicated abortifacient activity.

The results are summarized in Tables 1 and 2. Table-1 reveals the results of primary screening of extracts of seeds of *Nigella sativa* for anti-implantation activity in rats. All the extracts of methanol, chloroform and ethyl acetate showed antiimplantation activity. Table-2 shows the abortifacient activity of the extracts when administered for 3 d (14-16a p.c) after coitus. It revealed that the extracts caused resorptive activity in larger number of rats.

TABLE – 1
ANTI-IMPLANTATION ACTIVITY OF SEED EXTRACTS OF *Nigella sativa* IN FEMALE RATS

Type of extracts	Days of treatment	Dose (mg/kg) P.O	Laparotomy on day 10 P.C.		
			No. of rats without implantation / No. of rats used	No. of implantation (mean ± SEM)	Anti-implantation Activity (%)
Methanol	6, 7th day after mating	300	6/6	0	100
		500	6/6	0	100
Chloroform		300	6/6	0	100
		500	6/6	0	100
Ethyl acetate		300	6/6	0	100
		500	6/6	0	100

Nigella sativa has been reported by very few number of workers to possess significant antifertility activity. Hexane extract of its seeds possess significant antifertility activity when administered at 2 g/kg daily dose on 1-10 d post-coitum[14]. The present findings confirm their antifertility and as well as abortifacient activity.

Therefore, on the basis of present findings it is concluded that all the extracts of seeds of *Nigella sativa* possessed antifertility activity in rats and can taken up for the further studies in relation to the mechanisms of contraceptive action.

TABLE-2
ABORTIFACIENT ACTIVITY OF SEED EXTRACTS OF
Nigella sativa IN FEMALE RATS

Type of extracts	Laparotomy on day 10 P.C. No. of rats with implantation/ No. of rats used	No. of implantation	Dose (mg/kg) P.O.	No. of rats shown in resorption on 18 d	Implantation no.	AA (%)
Methanol	6/6	8.30±0.0714	300	5	0.166±0.0121	100.00
	5/6	8.83±0.0307	500	5	Nil	83.33
Chloroform	5/6	9.30±0.0421	300	5	0.333±0.0312	83.33
	4/6	9.10±0.0872	500	4	0.166±0.0121	66.66
Ethyl	4/6	9.00±0.0898	300	4	0.166±0.0121	66.66
acetate	6/6	9.00±0.0726	500	5	Nil	100.00

AA = Abortifacient activity
Days of Treatment = 14, 15, 16th day after mating

ACKNOWLEDGEMENT

Authors are thankful to Department of Pharmacy, Annamalai University, Chidambaram for extending all facilities.

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(*Received*: 17 June 2006; *Accepted*: 4 May 2007) AJC-5651