ORIGINAL ARTICLE

Effects of Aspirin and Nigella Sativa on Coagulation Profile in Albino Rats for four Weeks Duration

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ABSTRACT

Ninety albino rats were selected and were divided into six groups on the basis of different diets given. Control group (I) was fed on synthetic diet and experimental groups (IIA, IIB, IIC, IID and IIE) were fed on 1 mg aspirin, 15mg, 30 mg, 45 mg Nigella Sativa per kg body weight respectively while IIE was given 30 mg NS and 1 mg aspirin/kg body wt. Blood samples were collected by heart puncture and Coagulation parameters were done. APTT was reduced significantly in groups taking different concentration of NS when compared with control. Percentage of clot retraction was weak significantly in groups taking aspirin only when comparing with other groups.

Key words: Aspirin, Nigella Sativa

INTRODUCTION

Petroleum ether extracts produced significant shortening in the whole blood clotting times and activated partial thromboplastin time. No significant effect was shown on the prothrombin time and thrombin time[1]. The fatty extract and petroleum ether inhibited the fibrinolytic activity in vivo and in vitro. The mechanism of this effect is not known but it may be due to an inhibitory effect on the activation of plasminogen or inhibiting the plasmin activity[2,3,4].

Seeds of Nigella sativa are given with butter and milk to cure obstinate hiccup. Seeds are employed as a purgative. They are also useful in indigestion, loss of appetite, fever, diarrhea, and puerperal disease etc[7,8]. NS produced significant shortening in kaolin cephalin clotting time. Ether extracts and fatty extract produced a significant shortening in bleeding time[5,6].

SUBJECTS AND METHODS

Ninety male albino rats were divided into different groups on the basis of diet (Table1). Blood sampling was done at 4th week. Special Haematological investigation (PT, APTT and fibrinogen) were performed.

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Table I: Groups of animals based on diet

Groups	No. of animals	Type of diet/rat twice a day
I (Control)	15	10gms (synthetic diet)
Experimental group -II	75	
IIA	15	0.2 mg aspirin & 10g synthetic diet
IIB	15	3.0 mg Nigella Sativa & 10g synthetic diet
IIC	15	6.0 mg Nigella Sativa & 10g synthetic diet
IID	15	9.0 mg Nigella Sativa & 10g synthetic diet
IIE	15	0.2 mg aspirin + 3 mg Nigella sativa & 10g synthetic diet

RESULTS

The results of different groups at 4th week are shown in Table 2.

Table 2: Specific haematological investigations in experimental and control groups at 4th week

Groups	**PT (Second)**	**APTT (Second)**	**Fibrinogen (mg/dl)**
IA (Control)	12.6±1.44 (11-14)	34.8±2.16 (35-38)	231±66.4 (175-340)
IIA	12.4±1.14 (11-14)	33.6±1.67 (32-36)	255±45.2 (155-340)
IIB	12.6±1.14 (11-14)	28.6±1.94 (28-32)	170-7.90 (165-180)
IIC	12.2±1.3 (11-14)	39.6±2.6 (26-31)	246±81.13 (175-375)
IID	12.6±0.9 (11-14)	29.4±2.4 (26-32)	271±76.5 (180-375)
IIE	12.0±1.0 (11-13)	34.8±2.2 (32-38)	186±32.3 (155-230)
Statistical Analysis			
I vs IIA	NS	NS	NS
I vs IIB	NS	HS	NS
I vs IIC	NS	HS	NS
I vs IID	NS	HS	NS
I vs IIE	NS	NS	NS

DISCUSSION

Prothrombin Time: The mean ± SD values of PT in experimental groups IIA, IIB, IIC IID & IIE were comparable with that of control groups.

Activated Partial Thromboplastin Time: The mean ± SD values of APTT in experimental groups taking NS only was significantly ($p<0.05$) decreased when comparing with control group (IA) at 6th week but comparable in groups taking aspirin at 4th week. This decreased APTT in groups taking Nigella sativa may be due to effect of NS on factors involved in the intrinsic coagulation pathway. Such results are in conformity with the study of Owen et al (1975)[1] & Ghoneum et al (1982)[5] who also observed similar changes.

Fibrinogen Level: The mean ± SD values of fibrinogen in experimental groups taking different conc of NS and aspirin are comparable when comparing with control group (IA) at 6th week. The comparison between different experimental groups to each other also showed non-significant difference statistically.

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