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# Influence of Neem Leaf Extract on Biochemical Parameters in Rats

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**ABSTRACT:** Neem (*Azadirachta indica*) belonging to family maliaceae have many medicinal properties. All parts of this plant preparation have also been used for treatment purposes in the form of drugs and devices. Neem leaf extract was orally administered to albino rats at the dose level of 40mg/kg body weight for 10 days. And the parallel control group received equal volume of distilled water. No significant changes were found in biochemical parameters.

**KEYWORDS:** SGPT, SGOT and ALP

## I. INTRODUCTION

Neem botanically known as *Azadirachta indica*. A juss belongs to family madiaceae. It is also known as 'Nimba' in Sanskrit. Usually all parts of the plants are bitter and have a wide spectrum of medicinal properties (Kiritiker and basu, 1965). The biological activity of neem extract against a wide variety of insect pest have been reported. Although considerable research has been done on the neem insect alkaline phosphatase (ALP) was investigated interaction but little is known about the influence of neem on vertebrate physiology. In the present study the effect of neem leaf extract on albumin, globulin, glucose, total protein, serum glutamate oxalacetate transaminase (SGOT), total bilirubin and in albino rat after 10 days of treatment.

## II. MATERIALS and METHODS

Charles foster rats weighing about 200-250 gm were procured. The rats were maintained under standard housing conditions. The experiment animals were acclimatized for a week before experimentations. These were randomly divided into groups of four animals each 4 males 4 females. Group 1 serving as control and group 2 as treated were given 2ml/100 gm body weight of leaf extract. 40 gm of green neem leaves and 200 ml of distilled water were mixed well in a mixer then filtered and concentrated. The concentrated extract was used as dose. All the animals were observed for changes in body weight, feed intake, water intake & biochemical parameters. The biochemical parameters were analysed by biochemical auto analyser.

## III. RESULTS

The value of glucose after the neem leaf treatment in the male rats by 30.10 % and in females by 30.13 % than the control group. No changes in albumin values were found in treated males but in females its values dropped by 8.33 %. The globulin increased by 8.66 % in males and 2.53 % in females. The total protein were increased in treated males by 5.67 % but in females the total proteins increased by 2.64 % (Table 1)

The changes were noted in SGPT value of treated rats (table 2) and it was decreased by 9.51 % in males and dropped by 32.16 % in females. SGOT enhanced by 16.00 % in males and 13.60 % in females. Total bilirubin was also higher by 14.20 % in males and 16.66 % in females. The ALP were considerably increased in males exhibiting 115.98 % elevation, whereas the value of ALP was higher by only 11.2 % in females.

Parameters	Male		Female	
	Control	Treated	Control	Treated
Glucose(mg/dl)	95.25( $\pm$ 33.8)	124( $\pm$ 9.89)	114.5( $\pm$ 19.15)	149( $\pm$ 32.5)
Albumin(gm/dl)	3( $\pm$ 0.28)	3( $\pm$ 0)	3.6( $\pm$ 0.2)	3.3( $\pm$ 0.1)
Globulin(gm/dl)	4.05( $\pm$ 0.44)	4.4( $\pm$ 0.2)	3.95( $\pm$ 0.1)	4.05( $\pm$ 0.07)
Total Protein(gm/dl)	7.05( $\pm$ 0.59)	7.45( $\pm$ 0.2)	7.55( $\pm$ 0.3)	7.35( $\pm$ 0.7)

Table 1 : Effect of neem on Glucose, Albumin, Globulin in rat

Parameters	Male		Female	
	Control	Treated	Control	Treated
SGPT(IU/L)	55.7( $\pm$ 8.53)	61( $\pm$ 0)	71.5( $\pm$ 39.23)	48.5( $\pm$ 4.9)
SGOT(IU/L)	200( $\pm$ 34.5)	232( $\pm$ 71.4)	190( $\pm$ 88)	216( $\pm$ 89)
T.Bilirubin(Mg/dl)	0.35( $\pm$ 0.2)	0.4( $\pm$ 0)	0.3( $\pm$ 0.05)	0.35( $\pm$ 0.2)
ALP(IU/L)	197.7( $\pm$ 8.53)	427( $\pm$ 0)	250( $\pm$ 115)	278( $\pm$ 140)

Table 2 : Effect of neem on SGPT, SGOT, T.Bilirubin, ALP

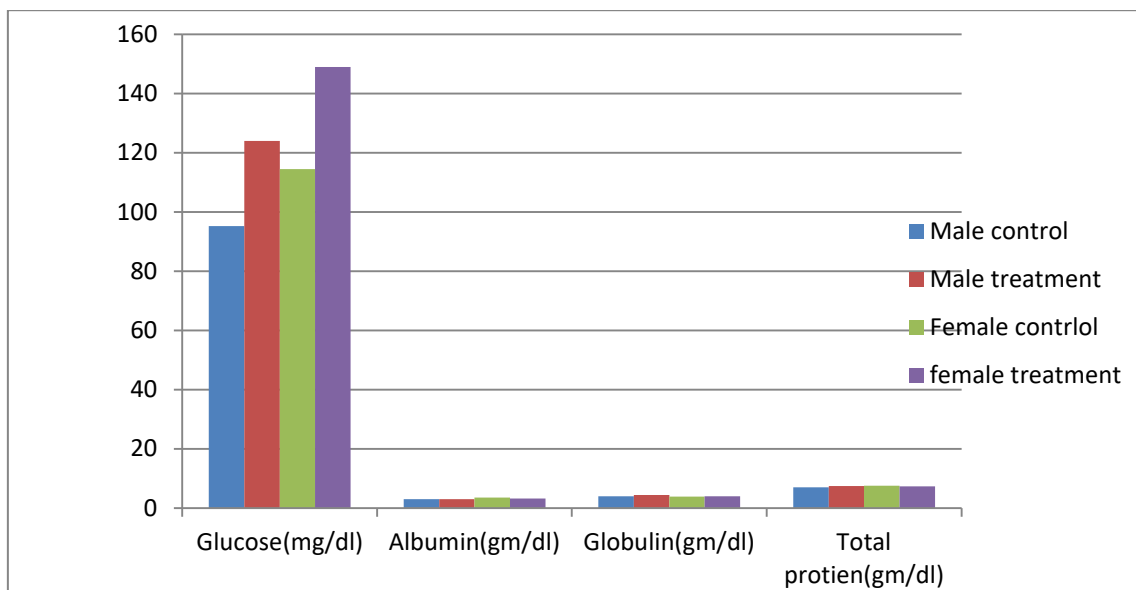


Fig. 1: showing value of Glucose, Albumin, Globulin in neem treated and controlled rats

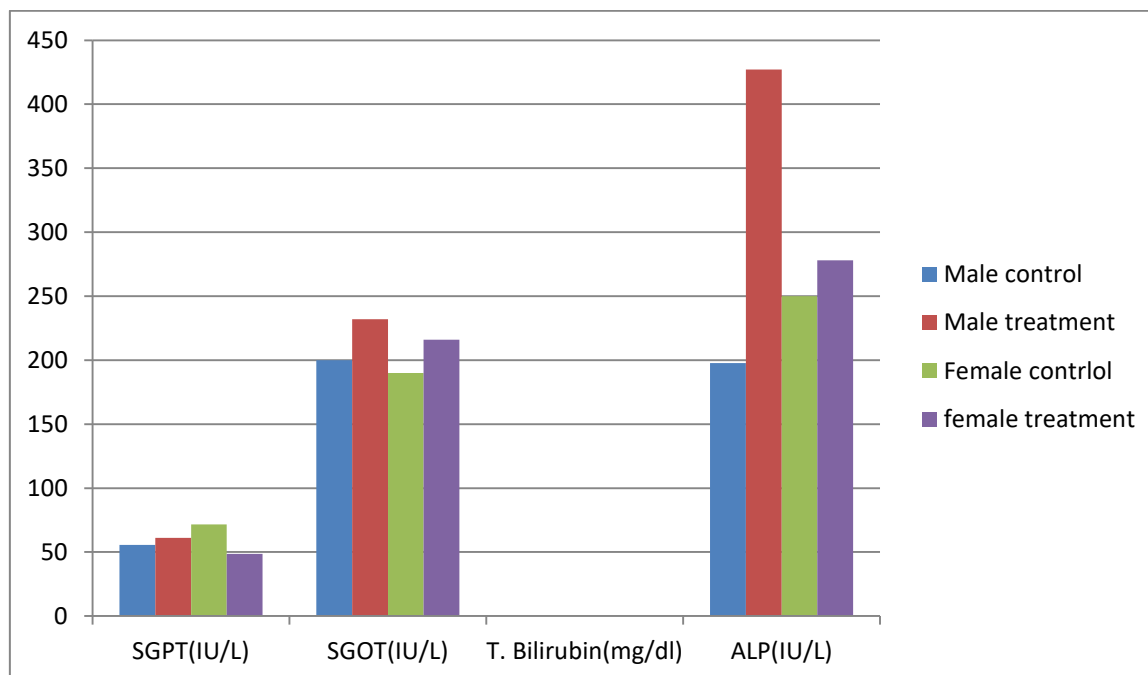


Fig. 2: Showing SGPT, SGOT, T.BILIRUBIN, ALP in neem treated and controlled rat

### III. CONCLUSION & DISCUSSION

No significant changes was observed in food intake as well as water intake in the treated animals. The blood glucose level indicated a hyperglycemic response which might be due to the mobilization of glucose from liver to blood. The elevation in the activity of the SGOT, SGPT and ALP indicates a damaged liver of the treated rats.

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