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Effect of neem seed oil on body and organ weights of male wistar rats

A.O. NWAIHO[1], L.E. EBITE[2]*, K.E. NWANGWA[1] and OVUAKPORAYE SAIMON[1]*

[1]Department of Physiology, Delta State University, Abraka, (Nigeria).
[2]Department of Anatomy, Delta State University, Abraka, (Nigeria).

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ABSTRACT

The effect of Neen seed oil on body and organ weights of male Wister rats were investigated were invested. Twenty-one male Wistar rats were investigatedweighing on the averate 150g were randomly divided into three groups (n=7) – A, B and C. Group A served as control and received on oral dose of 0.5ml of Normal saline daily for 6 weeks. Group B and C served as esperimental groups. B received 0.5ml of neem seed oil for 6 weeks while group C received 0.5ml of neem seed oil for 4 weeks only, and allowed 2 weeks of non administration. The animals were weighed and sacrificed and the liver, spleen, kidney, testis and brain were removed after laprotomy and were cleanedand weighed. Data analysis was done using the students t-test Result showed. Result showed statistically significant reduction ($P<0.05$) in body, testis, liver, kidney and brain weight in experimental animals compared to control. Despite the benefit afforded by neem seed oil in several trails for male contraception, this work suggested that it may have adverse effect on important organs of the body.

Key words: Neem seed oil, male wistar rats.

INTRODUCTION

Kaushik and Vir 2000, described neem seed oil as a vegetable oil pressed out from the fruit of neeem (*Azadarichta indica*). It contain steroids and a plethora of triterponoids compounds which are responsible for its bitter taste, it also contains fatty acids.

Neem seed oil has been put into different uses which includes industrial preparation of cosmetics (hair, body and hand products). Stridhar 2002). Neem seed oil is reputed to have many medicinal properties in traditional medicine. It has been reported to have anti-flagella effect (Jenson 2003) and a potent spermicidal effect (Upadhyay 1993). Hence it is appreciable the clamour for it's use for male contraception. But for it to be used safely and effectively, its mechanism of action, and possible adverse effect must be fully elucidated for propare therapeutic use and management of side effect.

This work aim to find out the organs of the body with vital functions that may be affected by ingestion of Neem Seed Oil.

Methodology

Twenty one male wistar rats were randomly divided into three groups (n=7), A,B and C. Group A served as control and received an oral dose of 0.5ml of normal saline daily for 6 weeks. Group B and C served as experimental groups. B received 0.5ml of Neem Seed Oil daily for 6 weeks while group C received 0.5ml of Neem Seed Oil for 4 weeks only and allowed 2 weeks of non administration.

Procedure

At the end of Administration period, rats were weighed and sacrificed and the liver, spleen, kidney, brain and testis were removed after laprotomy and weighed.

Neem oil was extracted from neem seeds by maseration.

Table 1: Show changes in body and organ weight. Results are presented in means and standard deviations (n=7)

Group	A	B	t-value	P-value	Remarks
Weight OF spleen (g)	0.6±0.045	0.78±0.38	1.22	P>0.05	NS
Weight of liver (g)	5.8±0.32	5.86±0.91	0.16	P>0.05	NS
Weight of kidney (g)	0.65±0.05	0.50±0.07	45	P<0.01	S
Weight of Brain (g)	2.3±0.99	1.23±0.32	26	P<0.05	S
Weight of Testis (g)	1.65±0.35	1.17±0.08	3.5	P<0.05	S
Change in body wt (g)	41.35±4.45	21.3±2.48	10.23	P<0.07	S

Table 2:

Group	A	B	t-value	P-value	Remarks
Weight OF spleen (g)	0.6±0.045	0.41±0.07	5.9	P<0.01	S
Weight of liver (g)	5.8±0.32	4.57±0.16	8.9	P<0.001	S
Weight of kidney (g)	0.65±0.05	0.38±0.056	9	P<0.001	S
Weight of Brain (g)	2.3±0.99	1.25±0.25	2.6	P<0.05	S
Weight of Testis (g)	1.65±0.35	1.12±0.076	4	P<0.05	S
Change in body weight (g)	41.35±4.45	14.4±3.64	12.2	P<0.001	S

Analysis data was analysed using the student's t-test statistics.

DISCUSSION

Our result showed a statistically significant reduction in body weight and organ weights in rats treated with Neem Seed Oil especially in the kidney, brain and testis. In rats treated for six weeks. However, withdrawal of Neem Seed Oil after four weeks resulted in a market reduction in the body and organ weights.

There appears to be a debt of literature on the effect of neem seed oil on body and organ weight, however several effects of neem seed oil have been documented especially as it affects the testis and spermatogenesis (Jensen 2003). This reduction in body and organ weights, may have been either due to reduce food and fluid consumption following neem oil administration, due to its better teste, as observed dueing our study or may be due to an anti Androgenic effect which have been reported by other authors (Jenson 2003).

Neem Seed oil reduced body weight and organ weight in experimental animals with the kidney, Brain and Testes been more affected therefore there is need for further studies to define the pathway involved in these weight reductions. So that the proposed use of neem seed oil as male contraceptive should take into consideration it's effect on vital body organs in order for proper application dosing.

REFERENCES

1. Jenson J.T., "Male Contraceptive", *Current World health report* **2**(5): 338-45 sander (2003).
2. Sauder N.L., Male antifertility of Azadirichta indica in different species. In Schmutterer H., and Ascher K.R.S. (Eds) National Pesticides tum nem tree and other tropical plants: proceedings of the 2nd international neem conference. Deutsche, Gesellschaft, Technishe Zusammenarbeit: Robdort, Germany (1984).
3. Kaushik N. and Vir S., variation in fatty acid composition of Neem Collected from Ragasthan State of India; *Biochemical Society Transaction.* **28**(6) (2002).
4. Stridha V., Neem: Its cultural and health uses. 1st edition lotus press 24 (2002).
5. Upadhyay S.N., Antifertility effects of Neem Oil in male rats by single intra-vas administration: an alternate approach to varectomy. *Journal of Andrology*. **14**(4): 275-81 (1993).