HAEMATOLOGICAL INDICES OF MALE ALBINO RATS GIVEN ORAL DOSES OF ENERGY 3000 HERBAL MIXTURE

ABSTRACT

The study aimed to investigate the effect of Energy 3000 herbal mixture on some haematological indices in male albino rats. The study was conducted using twenty male albino rats which were divided into four groups of five rats per group. Group 1 served as control and was given feed and water only. Groups 2 to 4 were administered 0.2, 0.4, 0.8ml/kg body weight (bw) of the herbal mixture. This treatment was done for 28days, after which blood samples were collected for the measurement of haematological indices. Results obtained were subjected to statistical analysis. The results obtained show that energy 3000 herbal mixture at the dose of 0.8ml/kg bw significantly ($P<0.05$) increased the WBC, Hb and platelets when compared to the control. The result suggests that energy 3000 herbal mixture caused significant changes in haematological changes in haematological indices of male albino rats.

Key words: Energy 3000 herbal mixture, Herbal remedies, Haematological indices, male albino rats, erectile dysfunction.

INTRODUCTION

People use different herbal medicines for the treatment of different ailments. One of the ailments that disturb mature adult male is erectile dysfunction (ED). Some men prefer to use herbal remedies for its treatment. One of such herbal remedies is Energy 3000 herbal mixture.

A penile erection which is enough for sexual satisfaction, as well as satisfactory sexual fulfillment, cannot be got and /or maintained in men with ED. Erectile dysfunction is defined as a disturbance of the arousal stage of the sexual response (Burnett et al, 2018). According to (Ariba et al; 2007), it is one of the most common sexual dysfunctions in men worldwide. Erectile dysfunction, low sperm production and inability to perform in sex are sources of embarrassment especially among the uneducated in underdeveloped and developing countries.

It is not uncommon for males to either not recognize that they have a sexual disorder, play down its significance or find it uncomfortable to discuss with their doctor. Thus only very few seek medical help (Priesto-casto et al, 2020). Most of the men suffering from any kind of penile dysfunction rather resort to herbal remedies. Energy 3000 herbal mixture is one of such herbal remedies commonly used to manage any kind of penile dysfunction and enhance sexual performance in Nekede, Imo State, Nigeria. Energy 3000 herbal mixture is made up of *Citrus aurantifolia* (Lime), *Psidium Guajava, Xylipisa aesthiopica*(Ethiopian pepper), *Sesomum indicum*Benner seed), *Magniferaindica* (mango seed), Ginseng and water.

Herbal medicines are believed to be safe because they are from natural sources. However, literature has shown that some of these herbal medicines have

adverse effects on some organs contrary to the organs of interest (Oyewo et al; 2013; Adeyemi and Akinwande, 2015; Patrick-Iwuanyanwu and Nkpaa, 2015).

Energy 3000 herbal mixture is a herbal drink that boost sperm production, increases sexual libido, fights weak erection and strengthens the male organ. However, there is dearth of information on haematological changes that may occur due to the administration of this herbal remedy. The purpose of the study was to ascertain the effects of the administration of graded doses of Energy 3000 herbal mixture on haematological indices in male albino rats.

Materials and Methods

Collection and identification of materials

Energy 3000 herbal mixture was purchased at Herbal medicine shop at Umuerim junction, Nekede, Owerri, Nigeria and was taken to the department of Biochemistry, Federal Polytechnic Nekede Owerri, Nigeria for identification.

Experimental Animals

Twenty healthy male albino rats between eight to twelve weeks of age, weighing 150-200g were used for the study. They were purchased from Nano animals, Irete, Imo State, Nigeria. They were kept in rat cages. All the animals were allowed a period of seven days to acclimatize before the commencement of the treatment.

Animal treatment

Twenty (20) male albino rats were assigned to four groups (n=5). The first group (Group 1) served as control and were given feed and water only. Group 2, 3 and 4 were given graded doses of energy 3000 herbal mixture (0.2, 0.4, and

0.8ml/kg body weight respectively). The treatments were given orally and once daily for 28 days.

Collection of blood samples

On the 30th day, blood samples for analysis of haematological indices were collected in ethylene diamine tetraacetic acid (EDTA) bottles and taken for haematological analysis.

Haematological Investigations

The packed cell volume (PCV), haemoglobin (Hb), Red Blood cell (RBC) count, white blood cell (WBC) count and platelets count were determined according to the method described by John and Arundhati, 2000.

Statistical analysis

Results were presented as mean ± standard deviation. One-way analysis of variance (ANOVA) was used to determine the differences between groups and where significance existed, Dunnett's post hoc test was employed to establish the source. Differences in means were considered significant at $P<0.05$.

Result

Table 1: Haematological indices of male albino rats given oral doses of energy 3000 herbal mixture.

Groups	Treatment (ml/kgbw)	WBC (10^9/L)	RBC (10^{12}/L)	HB (g/dl)	PCV (%)	PLT (10^9/L)
1 (control)	0.0	5.0±0.00^b	5.2±0.01^c	11.7±0.00^9	42.4±0.00^c	200.1±0.14^a
2	0.2	4.0±0.00^a	6.3±0.00^d	12.1±0.2.0^b	41.1±0.15^b	217.2±6.85^b
3	0.4	8.0±0.00^c	4.2± 0.02^a	11.7±0.00^a	40.4±0.01^a	200.0±0.00^a
4	0.8	10.0±0.7^d	5.0±0.01^b	12.2±0.02^b	41.0±0.00^b	2245±219^b

Values are given as mean ± standard deviation

Values in the same column with different superscripts are significantly different ($P<0.05$).

What means ofa, b ?????

Discussion

Haematological values are important indices used to evaluate the toxic capability of extracts from plants living organisms (Sunmonu and Oloyede, 2010). They can also be useful in explaining blood- related functions of chemicals and extracts from plants. Such laboratory investigations are known to be highly sensitive, accurate and dependable and remain the basis of ethical and rational study, diagnosis of diseases, prevention and treatment of diseases. (Okonkwo et al, 2004).

Elevated levels of white blood cells (WBC) were seen in the albino rats after giving them oral doses of energy 3000 herbal mixture. The Increase was statistically significant ($P<0.05$). The essential role of WBC in fighting for the body against infections and preventing damage of tissues is well documented. This suggests that Energy 3000 herbal mixture may promote immunity in the animals.

Such effects may as well be as a result of elevated vascular permeability. Administration of energy 3000 herbal mixture seems to cause a stimulation of the effector cells of the immune system. Immune boosters are usually given to strengthen and harmonize degenerative body systems and assist the immune system in fighting invading agents such as bacteria and viruses (Al-Mamary, 2002; Ladokun et al, 2015).

All experimental groups demonstrate significant deviation in red blood cell counts compared to the control group. Group 2 exhibited a significant increase in RBC count, while group 3 and 4 showed a significant decrease ($p<0.05$). The herbal mixture appears to influence erythropoiesis, however, in a manner not clear.

Energy 3000 herbal mixture appears to have effect on haemoglobin (Hb) levels. Groups 2 and 4 showed a statistically significant increase in Hb levels compared to the control. This finding suggests a potential role of the herbal mixture in influencing oxygen- carrying capacity of the blood through modulation of haemoglobin levels. Higher doses of energy 3000 herbal mixture may encourage haemoglobin synthesis.

There was a significant difference in the packed cell volume (PCV) of the treated animals when compared with the control. The three treatment groups showed a decrease in PCV when compared to the control.The packed cell volume is a measurement of the proportion of blood that is made up of cells. A low PCV implies a low number of red blood cells. The herbal mixture may affect blood viscosity and oxygen delivery as reflected in PCV changes.

The platelet count result in the study show potential effects of energy 3000 herbal mixture on platelets in rats. The groups given different doses of the herbal mixture i.e 0.2ml, 0.4ml and 0.8ml displayed platelet counts of 217,200 and 224

respectively. Looking at these results, it appears that the energy 3000 herbal mixture may have an impact on platelet counts . Platelets play an important role in the maintenance of normal hemostasis.

Conclusion

The study suggests that energy 3000 herbal mixture induced significant changes in haematological indices in male albino rats. These findings provide a foundation for further investigations into the clinical implications and mechanistic aspects of the observed effects.

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