

Mosquito Coil Smoke Depletes Iron (Fe) Concentration in Cerebrum of Wistar Rats

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Introduction

In most urban and rural areas of Africa, Asia and South America, mosquito populations are menacing throughout the year, except for some attenuation during summer and winter. Mosquitoes transmit diseases such as malaria, dengue fever, hemorrhagic fever etc. (Sharma, 2001).

General abuse and wanton overuse of these mosquito coils and other insecticides in the control of mosquitoes pose a serious public health challenge, especially inhalation of chemical constituent of the insecticide (Mshelia *et al.*, 2013).

Here, we show that exposure to mosquito coil smoke decreases the concentration of Iron which has been linked to stress and abnormal cognition (Zerrouk *et al.*, 2012).

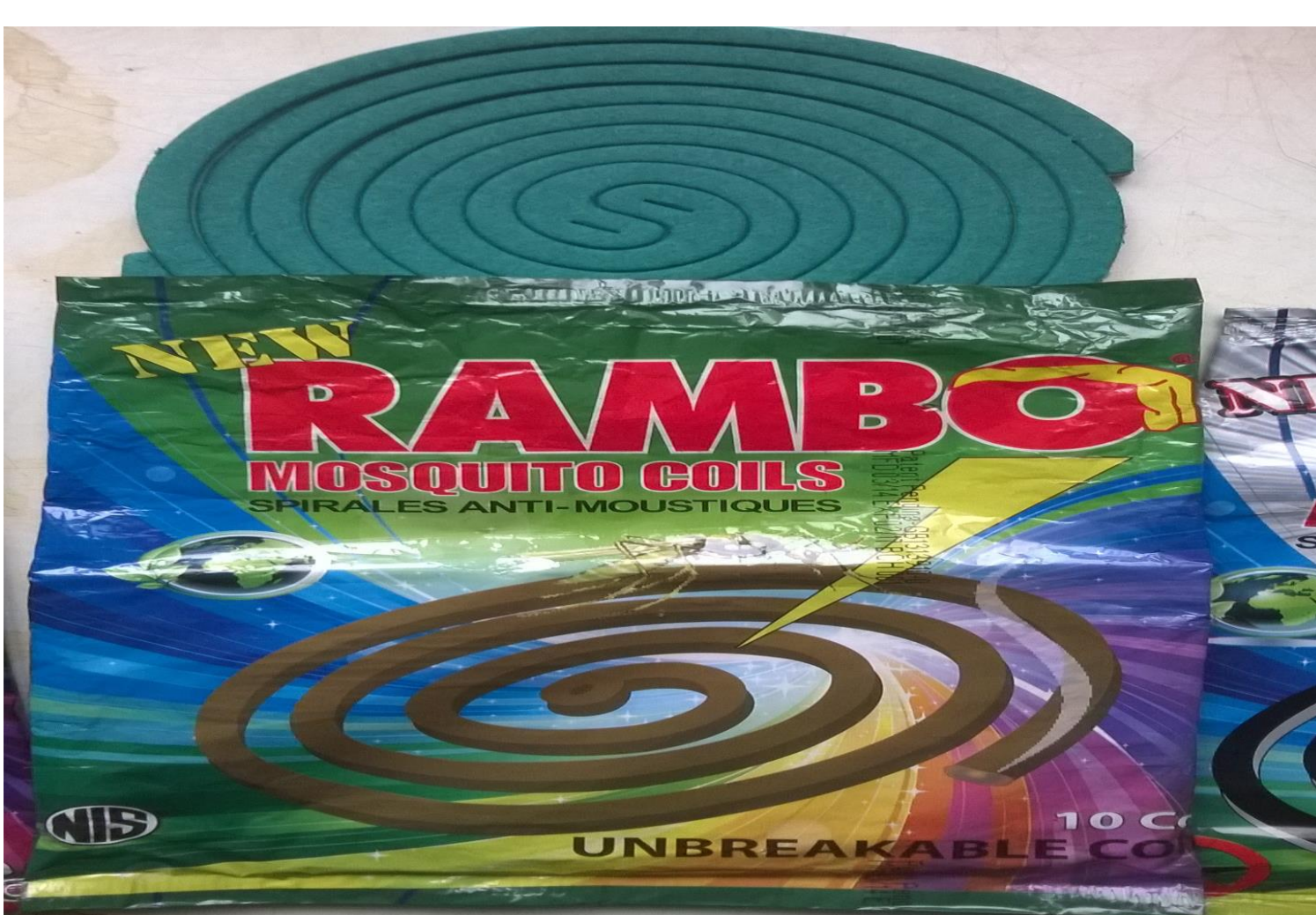
Objectives

To estimate the effect of exposure to mosquito coil smoke on iron(Fe) concentration in the cerebrum of the Wistar rats.

Materials and Methods

Test Substance

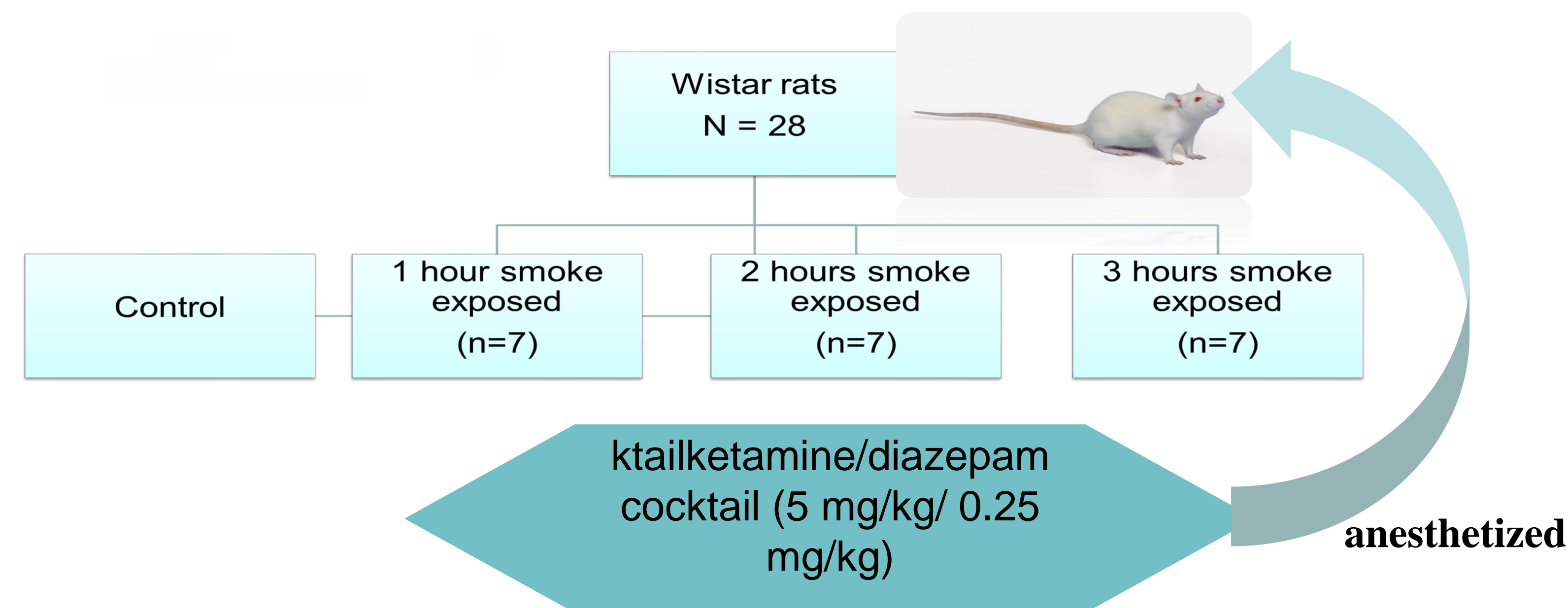
Rambo mosquito coil produced Gongoni Company limited, 89A Sharada Industrial Estate, Phase III, Kano, Nigeria.



Experimental protocol

In the experiment, a total number of 28 male Wistar rats were caged and allowed to acclimatize for two weeks. The animals were grouped into four.

Experimental design



Results

Exposure to Mosquito Coil Smoke Decreases Iron Concentration in the Cerebrum of Wistar Rats

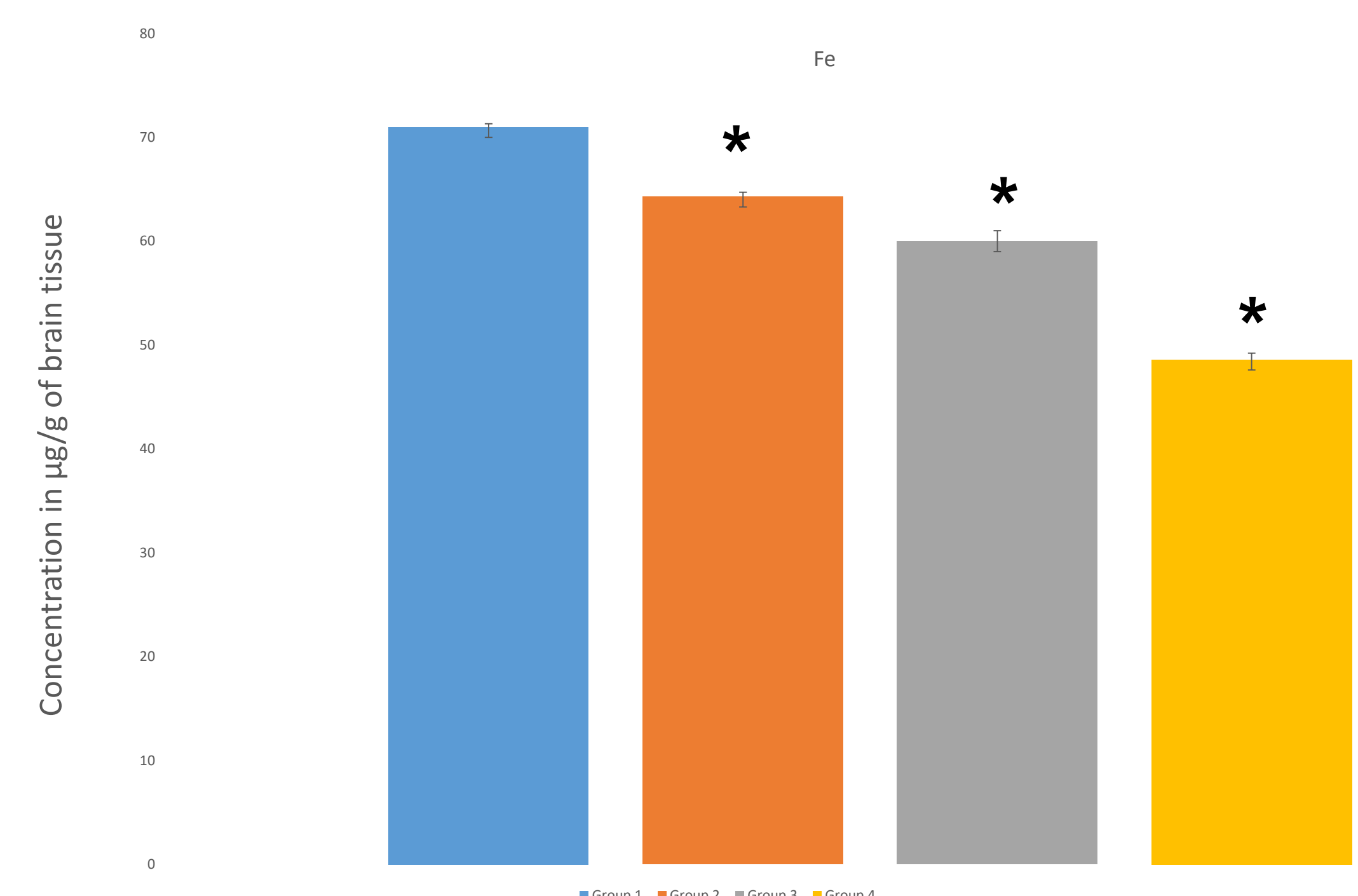


Figure 1: Concentration of Iron (Fe) (µg/g brain tissue) in the cerebral tissue of adult Wistar rats. * Symbol indicating significant difference at P< 0.05 compared to the control group.

Conclusions

The study show that exposure to mosquito coil smoke causes a significant decrease in iron (Fe) concentration in the cerebrum of the adult male Wistar rats.

References

- Mshelia, P. P. Magaji, R. A. and Dikko, A. U. A. (2013). *Journal of Pharmacy and Biological Sciences*: 26-30.
- Sharma, V. P. (2001). *Current Sciences*, 80(3): 341.
- Tina S. Lisbeth B. M. and Torben M. (2012). *Front Pharmacology*. 3: 169
- Zerrouk K., Mohamed N., Mohammed C., Mariama E.O., Ghizlane E-R., and Fatih C. (2012). *American Journal of Neuroscience*. 3(2):79-86.