ASSESSMENT OF ANTIOXIDANT AND ANTIPLASMODIAL ACTIVITIES OF METHANOL EXTRACT OF FICUS CAPENSIS LEAF IN SWISS MICE

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ABSTRACT

INTRODUCTION

Malaria still remains one of the world’s leading parasitic infectious diseases of humans with about 863,000 deaths annually. Plants have always been considered to be a possible alternative and rich source of drugs. Due to limited availability and/or affordability of pharmaceutical medicines in many tropical countries, the majority of the populations depend on traditional medical remedies. Ficus capensis, commonly known as cape fig, has a wide range of applications in ethnomedicinal practices against various diseases.

OBJECTIVES

This study evaluated the phytochemical constituents and antiplasmodial activity of methanol extract of F. capensis leaf in chloroquine sensitive, Plasmodium berghei (NK 65), infected mice. Hepatoprotective and antioxidant properties of the extract were assessed.

MATERIALS AND METHODS

Phytochemical constituents (qualitative and quantitative) of the methanol extract of F. capensis were determined. The four-day Peter’s suppressive test against mice infected with chloroquine sensitive strain of Plasmodium berghei (NK 65) were used for the study. Percentage parasitaemia levels were monitored regularly.

RESULTS AND DISCUSSION

The extract exhibited significant (P<0.05), dose-dependent suppression of parasitaemia of 43.18%, 64.13% and 78.16% for 250mg/kg, 500mg/kg and 1000mg/kg doses of the extract, respectively. There were significant reduction (P<0.05) in the activities of liver function enzymes of the extract-treated groups in contrast to the infected control, suggesting that the plant extract is hepatoprotective. The mice treated with the extract (at 250mg/kg and 500mg/kg doses) showed significantly lower (P<0.05) malonaldehyde but higher reduced glutathione levels, when compared with the infected control. This further indicates that the plant extract possess antioxidant activity.
CONCLUSIONS

The findings from this study provide evidence that *Ficus capensis* exhibits significant antiplasmodial and antioxidant activities which may be due to the presence of some lead bioactive compounds (flavonoids, alkaloids, tannins, terpenoids, saponins). *Ficus capensis* extract may be employed as part of combination therapy in the treatment of malaria.

KEYWORDS: Antiplasmodial, *Ficus capensis*, Antioxidant