

Inhibitory effect of *Mangifera indica* on gastrointestinal motility

Faraj Omar Alkizim*, Duncan Matheka, Fatma Khalid Abdulrahman, Anne Muriithi

¹School of Medicine, University of Nairobi, Nairobi Kenya

*Corresponding Author: faralkizim@hotmail.com

Abstract

Diarrhoea, the second leading cause of child mortality, accounts for 1.5 million deaths, impeding the realization of the fourth Millennium Development Goal. A review of existing treatment modalities and formulation of newer ones is therefore necessary. Mango fruit (*Mangifera indica*) kernel has been used as anti-diarrhoea remedy. Its mechanism is however uncertain. The current study therefore aimed to investigate the *in-vitro* effect of *Mangifera indica* kernel extract (MIE) on intestinal motility, and elucidate its mechanism. The dose related effects of MIE was tested on sections of jejunum freshly isolated from rabbits. Various receptors were then selectively blocked to investigate its mechanism. Finally the effect of MIE was compared with that of loperamide. MIE reversibly inhibited motility by -46.38 ± 5.83 % ($p < 0.001$), via a sympathomimetic mechanism. Its efficacy was comparable to loperamide, making it a potential antidiarrheal agent.

Keywords: Diarrhoea; mango kernel; gut motility; *Mangifera indica*

Introduction

Diarrhoea is the passage of loose stool, by an individual, at least three times a day, or more frequently than normal. It is most commonly caused by intestinal infection, mainly viral, transmitted faecal-orally (Koletzko *et al.*, 2009). For decades, diarrhoea has been described as one of the leading causes of mortality not only in the developing world, but also in the developed too. The implications are however more evident in the former (Farthing, 2000). In 1979, WHO reports (WHO, 1979) expressed concern on the matter and more than 2 decades later the same agency reported diarrhoea as the second leading cause of infant mortality worldwide (Figure 1), causing up to 1.5 million deaths annually (UNICEF and WHO, 2009). This accounts 16% of deaths in this age group, a toll greater than that of AIDS, malaria and measles combined (UNICEF and WHO, 2009).

Even these figures may well be an underestimate as they may not include extreme rural cases that may not have been fortunate to make it to a medical facility. The immediate