Dedication

This humble effort, the fruit of my achievements and pure thought is dedicated to my affectionate parents.

ACKNOWLEDGMENTS

All praise for Almighty Allah, who bestowed minute portion of his knowledge upon me by virtue of which I accomplished this task, assigned to me by my honorable supervisor.

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ABSTRACT

Bacterial vaginosis (BV) infections are among the most common bacterial infections in females. The majority of infections in community are caused by *Gardnerella vaginalis* which remains to be a common and troublesome health problem worldwide.

The present work was carried out in Khartoum State during the period from October, 2007 to September 2008 to study the activity of *Lactobacillus rhamnosus* against bacterial vaginosis.

A total of two hundred and eleven vaginal swab specimens were collected from pregnant and non pregnant women aged 18-70 years. Of the total specimens, 103 (48.8%) were collected from infected women and 108 (51.2%) from healthy women. The specimens were investigated to isolate bacterial vaginosis agents and for *L. rhamnosus.* The identification utilized macroscopical examination for pH, odor, and color and microscopical examination for Gram's stain and wet-mount test. Cultural and biochemical tests were also done. Study on the effect of *L. rhamnosus* on bacterial vaginosis was carried out by wells diffusion method.

Out of the 211 women investigated, 103 (48.4%) were infected and 108 (51%) no infected. Out of the total specimens (211), 197 specimens yielded bacterial growth. The rest (14) specimens were demonstrated either fungal growth or no bacterial growth and thus they were excluded. From 108 healthy women, 70 (64.8%) *L. rhamnosus* were isolated. The identification of these organisms were

confirmed by its resistant to vancomycin, gentamicin and kanamycin and sensetivity response to erythromycin, ability to ferment mannitol and lack of production of catalase enzyme.

In vitro study of the effect of *L. rhamnosus* on bacterial vaginosis revealed inhibition of *G. vaginalis*, *Bacteroides spp.* and *Mobiluncus spp.*

It is concluded that the presence of different *Lactobacillus* species as normal vaginal microflora is a major determinant to the vaginal disorder in women.

L. rhamnosus could be used as an alternative natural treatment for the BV as demonstrated by laboratory tests.

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