Tungiasis Infection: Bacterial Secondary Infection and Associated Risk Factors.

Mwangi, J[1, 3], Mecha, E[2], Muriu,S[1] , Omwandho, C,O.A.[4]
[1]Pwani University, [2]University of Nairobi, [3]Kilifi County Hospital, [4]Kirinyaga University
Correspondence: jacobmwa82@yahoo.com

Abstract

Tungiasis is an inflammatory skin disease caused by a female ectoparasitic called *Tungapenetran*. The disease is mainly endemic in low-income communities in Africa and Latin America. Although a number of studies have been done to elucidate pathogenesis of tungiasis, there is no study done that directly aimed at determining correlation between bacterial super-infection and its associated risk factors in tungiasis infection. This cross- sectional study was carried out in Kilifi North Sub County and Ganze sub-County, Kilifi County. A total of 84 respondents participated in the study. The gravid jigger from respondents' body parts were mechanically extracted by use of sterile needles. From the cavities left, two sterile swabs were collected with the intention of doing both anaerobic and aerobic culture. Swabs for anaerobic culture from each individual were inserted into carybrair transportation media. Both swabs were then carried with cool box to the laboratory within four hours for aerobic and anaerobic cultures. For aerobic culture, blood agar, and macconkey agar were used, while for anaerobic culture, chocolate blood agar was used. Various biochemical analyses were carried out to identify isolated organisms. Questionnaires were used in collecting data on risk factors that led to tungiasis. The data from questionnaires was then correlated with bacterial isolates from the culture. The findings showed that most common pathogenic bacterial species isolated were *Staphyloccousaureus* (25.8%). Interestingly, no anaerobic isolate was isolated. In association with risk factors, most of those respondents who had bacterial isolates were extracting jiggers by use of thorns that are not sterile with a (P-Value= 0.0425). It was also evident that treatment of jiggers with local methods like Mkirifi and Mtupa leave extracts lower the rate of bacterial super-infection (P- value = 0.0009553). However, distance to water and living with animals under one roof had no much significance. The study recommends that regular **s**ensitization meetings should be done by public health department to community with a view of discouraging residents from using thorns and unsterile sharp object as a way of jigger treatment, however, they should be encouraged to use local tree extracts. It is also recommended that further research should be done to identify compounds found in local trees that are acting as bactericidal or bacteriostatic to pathogenic organisms. The study concludes that bacterial super infection in tungiasis comes as a result of using unsterile thorn and sharp objects.

Keywords: Tungiasis Infection, Bacterial Secondary Infection, Associated Risk Factors**.**