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GARDNERELLA VAGINALIS ATCC 14018 RESISTANT TO METRONIDAZOL AND SOURSOP LEAVES (*ANNONA MURICATA LINN*) PREPARATION

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ABSTRACT

Bacterial vaginosis is a common cause of vaginal discharge caused by polymicrobial agent, mainly Gardnerella vaginalis, which many strain has known to be resistant to metronidazole. Soursop leaves (Annona muricata Linn) had empirically used for genital cleansing to prevent and cure vaginal discharge. Its active substances: tannin, saponin, alkaloid, steroid, flavonoid and annonaceous acetogenin had previously known to have antibacterial effect. This study was aimed at finding out the active substances in aqueous extract of soursop leaves and assess its antibacterial effect on Gardnerella vaginalis ATCC 14018. The study was an in vitro preclinical test conducted with pure experimental methods. Samples were pure culture Gardnerella vaginalis ATCC 14018, obtained from Biofarma laboratory. Materials were aqueous extract, ethanol extract and acethyl acetat fraction of leaves of soursop (Annona muricata Linn) with concentrations of 20%, 40%, 60%, 80%, and clindamycin as positive control. Antibacterial effect on Gardnerella vaginalis ATCC 14018 were tested using the Kirby-Bauer method on peptone starch dextrose blood agar media by measuring inhibition zone, performed four times. Results of phytochemical screening showed that the aqueous extract of soursop leaves contains active substances such as flavonoids, tannins, saponins, alkaloids, quinones, and steroids. The result of antibacterial test showed no inhibition zone formation at either concentration of 20%, 40%, 60%, and 80%. The conclusion was aqueous extract, ethanol extract and acethyl acetat fraction of leaves of soursop has no antibacterial effects on Gardnerella vaginalis ATCC 14018. This result was probably due to the influence by species of plant, demography, and processing the material to concentration of active substance in leaves of soursop.

KEYWORDS: Annona muricata Linn, bacterial vaginosis, clindamycin, Gardnerella vaginalis ATCC 14018, metronidazole.

INTRODUCTION

Vaginal discharge or leucorrhea or fluor albus is a common complain of female in any age. Vaginal discharge is a discharge from vagina beside blood, could be mucus, transudate, or exudate from genital tract lesion (Kapita Selekta Kedokteran, 2001). There are many cause of vaginal discharge, which could be pathological or non pathological condition. Physiologically vaginal discharge occurred previous to or after menstruation, during sexual arrousal, pregnancy and physical or psychological stress. Pathologically vaginal discharge may occurred due to fungal, bacterial, protozoal and gonorrhoe (Manuaba, 2001)

The most common microorganism causing vaginal discharge is bacteria or bacterial vaginosis (>50%), parasite or trichomoniasis (5-74% in female, 5-29% in male), and fungal or candidiasis (70-75%) (Manuaba, 2008). Almost 75% of female population in the world experienced this symptom, more than 75% Indonesian female experienced vaginal discharge at least once in her lifetime while 45% twice or more. (Monalisa, 2012)

Bacterial vaginosis (BV) is the most common cause of a fishy odor vaginal discharge, but more than 50% female with BV were asymptomatic. BV is a polymicrobial syndrome characterized with the displacement of lactobacili as vaginal normal flora with anaerobic bacteria, mostly *Gardnerella vaginalis.*(Gerbaring, 2005 dan Dempa 2006).

Female with BV has a higher risk of Human Papillomavirus (HPV) infection, Human Immunodeficiency Virus (HIV), genital herpes virus *Herpes Simplex Virus* 2 (HSV-2), and pelvic inflammatory disease. Pregnant woman with BV has a risk of developing endometritis and pelvic infection post delivery or post abortion, and also could induce prematur