WELL LIFE COMPOUNDING PHARMACY

VULVOVAGINAL CANDIDIASIS

The following clinical paper reviews the mechanism of antifungal activity for boric acid – "Antifungal mechanisms supporting boric acid therapy of Candida vaginitis" (J Antimicrob Chemother, 2009 Feb;63(2):325-36).

BACKGROUND: Boric acid is a commonly cited treatment for recurrent and resistant yeast vaginitis, but data about the extent and mechanism of its antifungal activity are lacking.

OBJECTIVES: The aim of the study was to use in vitro methods to understand the spectrum and mechanism of boric acid as a potential treatment for vaginal infection.

METHODS: Yeast and bacterial isolates were tested by agar dilution to determine the intrinsic antimicrobial activity of boric acid. Established microbial physiology methods illuminated the mechanism of the action of boric acid against Candida albicans.

RESULTS: C. albicans strains (including fluconazole-resistant strains) were inhibited at concentrations attainable intravaginally; as were bacteria. Broth dilution MICs were between 1563 and 6250 mg/L and boric acid proved fungistatic (also reflected by a decrease in CO(2) generation); prolonged culture at 50,000 mg/L was fungicidal. Several organic acids in yeast nitrogen broth yielded a lower pH than equimolar boric acid and sodium borate but were less inhibitory. Cold or anaerobic incubation protected yeast at high boric acid concentrations. Cells maintained integrity for 6 h in boric acid at 37 degrees C, but after 24 h modest intrusion of propidium iodide occurred; loss of plate count viability preceded uptake of vital stain. Growth at sub-MIC concentrations of boric acid decreased cellular ergosterol. The drug efflux pump CDR1 did not protect Candida as CDR1 expression was abrogated by boric acid. Boric acid interfered with the development of biofilm and hyphal transformation.

CONCLUSIONS: Boric acid is fungistatic to fungicidal depending on concentration and temperature. Inhibition of oxidative metabolism appears to be a key antifungal mechanism, but inhibition of virulence probably contributes to therapeutic efficacy in vivo.

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This clinical study supports the use of boric acid in the management of VVC – "Prolonged (3-month) mycological cure rate after boric acid suppositories in diabetic women with vulvovaginal candidiasis" (J Infect, 2007 Oct;55(4):374-7).

OBJECTIVE: Patients with diabetes mellitus (DM) are at increased risk of vulvovaginal candidiasis (VVC) due to C. glabrata. In our previous study we have shown that patients with diabetes mellitus and VVC show an overall superior mycological cure rate (74% versus 51%) with boric acid therapy at 16th day as compared to fluconazole. Present study was carried out to assess long term response to boric acid in diabetic women with VVC.

MATERIAL & METHODS: Subjects included 40 consecutive diabetic women (type 2 DM=26 and type 1 DM=14) who had achieved mycological cure (high vaginal swab culture negativity on day 15 of therapy following single-dose oral-150 mg fluconazole (n=21) or 600 mg of boric acid suppositories given daily for 14 days (n=19). At third month of follow up, patients were assessed for signs and symptoms of VVC and a repeat HVS was collected for fungal culture. HbA1c was measured to assess glycaemic control.

RESULTS: The mean age, BMI, HBA1c and frequency of various Candida species isolated at initial diagnosis were comparable in the fluconazole and boric acid treatment groups. Fifteen of 21 (71.4%) and 12 of 19 (63.1%) women who achieved mycological cure at 15 day remain cured at three months in the fluconazole and boric acid treated groups, respectively (P=0.83). With 74% mycological cure at 15th day, this would indicate that on an average only 46.6% of diabetic women with VVC would remain cured at 3 months after a course of 14 days boric acid therapy. Most of the patient relapsed with no change in Candida species. The demographic profile and mean HbA1c (8.6+/-2.2 versus 8.8+/-2.4%, P=0.83) were comparable in patients with (n=27) and without mycological cure (n=13).

CONCLUSIONS: The results of the current study indicating comparable mycological cure rate at 3 months between fluconazole and boric acid treated patients would support use of boric acid in the acute management of VVC in view of its superior short term response in diabetic women with C. glabrata infections. However, there is need to explore other therapeutic regimens which are effective in achieving long term mycological cure in diabetic women with VVC. PMID: 17692922

We have the ability to compound boric acid into vaginal suppositories at various strengths to meet the unique needs of each of your patients.

An example of how you might prescribe follows:

Boric Acid 600 mg
Vaginal Suppository
#15

Insert 1 suppository QD