

The phenomenon of the varying sensitivity to fluconazole in candida albicans

Nakonechna Julia Andriyivna, Hamerska Bozhena Volodymyrivna

Danylo Halytskyi Lviv National Medical University, Lviv

Tutors – PhD, Researcher Tymchuk Iryna Vasylivna, Danylo Halytskyi Lviv National Medical University, Lviv

MD, Professor Kornijchuk Olena Petrivna, Danylo Halytskyi Lviv National Medical University, Lviv

Introduction

Nowadays treatment of vaginal candidiasis requires detailed investigations of the interaction of the drug with the vaginal environment. It is proved that the susceptibility of *C.albicans* (in 91.6% cases causes vaginal candidiasis) to fluconazole in vitro is 30% higher compared to in vivo conditions, which is associated with the lack of systemic body response.

Aim

To evaluate the synergy and the mechanism of interaction of fluconazole and organic acids in achievement a fungicidal effect.

Materials and methods

Vaginal samples from 10 women with the vaginal candidiasis diagnosed for the first time as well as *C. albicans*, isolated from the vagina of this group of women before and after treatment with fluconazole, were the objects of the study. Sabouraud agar was taken to isolate a pure culture of fungi. We have used the method of serial dilutions to determine the susceptibility to fluconazole. Synergy of fluconazole with organic acids was tested by acetylsalicylic acid adding.

Results

C. albicans were isolated from all untreated women with candidiasis. The isolated strains of fungi were moderately sensitive to fluconazole. In 4 women out of 10, the fungi were found for the second time after treatment with fluconazole used in the concentration of 150 mg. We have found the reason of this phenomenon: there was no normal microflora in the vaginal smears resulting in acidulation of environment and, thus, the antagonistic effect on the drug. In a joint incubation of *C.albicans* with fluconazole and acetylsalicylic acid an increased sensitivity to fluconazole from dose of 25 mg / ml to 12.5 mg / ml was observed.

Conclusion

It has been established that in addition to the susceptibility to fluconazole, a number of other features, including pH environment of the vagina, antagonism with other microorganisms, the phase of the menstrual cycle and also the state of immunity, influence the elimination of *C.albicans* from the vagina.