

## 1 Abstract

Several years ago antimicrobial activity was describe for psychotropic drugs against wide groups of microorganisms. Recently it was found that one class of them, known as selective serotonin reuptake inhibitors (SSRI), has *in vivo* and *in vitro* antifungal activity. In this study the minimal inhibitory concentrations (MIC) of two SSRI (paroxetine and fluoxetine) against various strains of *Candida* spp. (*Candida albicans*, *C. glabrata*, *C. krusei*, *C. lusitaniae*, *C. parapsilosis* and *C. tropicalis*), *Saccharomyces cerevisiae* and *Trichosporon beigellii* using a broth microdilution test were investigated. The most susceptible fungal organism was *Saccharomyces cerevisiae* - fluoxetine (MIC 15,6µg/ml) and paroxetine (MIC 31,25µg/ml). In the second part of our study we tested combination of some antifungal agents (amphotericin B, fluconazole and flucytosine) with paroxetine and fluoxetine using checkerboard method. Activity was measured against two strains *Candida albicans*, one strain *Saccharomyces cerevisiae* and three auxotrophic strains *Candida albicans* (CA-SC, CA-BWOZ, CA-BWP), depended on uridine. For fluconazole testing we used six fluconazole-resistant strains *Candida* spp. in addition. The fractional inhibitory concentration (FIC) indexes ranged between 0,5 and 2,4 for the various combinations and various strains. Combination studies with amphotericin B and both SSRI showed additive activity (FIC between 0,6 and 1,0), only for one strain *Candida albicans* there were found synergism (FIC  $\leq$  0,5). Combination of antidepressants and flucytosine was indifferent (FIC between 1,0 and 2,0) in all cases with one exception of additive effect. Combination studies with fluconazole and SSRI showed different activities for strains tested, including additivity, indifference and antagonism (FIC > 2,0). We obtained very interesting results for flukonazole-resistant strains. For some of them the combination whit SSRI they showed an additive effect.