

Comparative analysis of modern antifungal drugs effect on yeast-like fungi of the candida genus

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Introduction

Candidiasis is an anthroponotic mycosis, characterized by lesions of the mucous membranes and skin. Nowadays, due to increased rates of recurrences of Candida infections, the need to investigate the sensitivity of fungi of the Candida genus to modern azole and polyene antimycotics increased. Such studies are essential for the selection of adequate antifungal medication and combined treatment of candidiasis.

Aim

To compare actions of modern antimycotics on Candida fungi and research differences in the sensitivity and resistance development.

Materials and methods

The oral mucus of 30 students was collected by a sterile swab. Sabouraud's medium was used for pure culture sampling. Biochemical identification was performed by the test of carbohydrates and High Chromium agar assimilation and fermentation. Sensitivity to the antifungal drugs was investigated using Kirby-Bauer test with fluconazole, nystatin, clotrimazole, ketoconazole, itraconazole and amphotericin B disks. The results were accounted by the measurement of the diameter of inhibition zone.

Results

12 strains of the fungi of Candida genus were separated from the oral cavity mucus. A total of 9 strains were identified as *C.albicans*, 2 – as *C.tropicalis*, 1 - as *C.crusei*. 91,66±1,41% of isolates were sensitive to nystatin, 83,33±2,22% - to clotrimazole, 75,00±2,91% - to amphotericin B, 58,33±3,22% - to ketoconazole, 41,66±3,20% - to fluconazole, 33,33±3,08% - to itraconazole. We established that polyene drugs were more efficient in comparison to the azole ones. We also found that the fungi of genus Candida have greater likelihood to develop resistance to azoles than to the polyene drugs. The main reasons of this fact are peculiarities of the impact and usage of these medication schemes.

Conclusion

Our research has proved that polyene antymycotics are more effective than azole drugs. Reduced efficiency of fluconazole is caused particularly by the peculiarities of the treatment as the drug is prescribed in low doses. The low dose of fluconazole has mainly fungistatic action that causes the development of resistance.