

# Treatment of recurrent esophageal candidiasis in HIV-negative patients in Saint Petersburg, Russia

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## Introduction

Recurrent esophageal candidiasis (REC) is not studied enough. Risk factors and the efficiency of maintenance antifungal therapy (MAT) of REC in HIV-negative patients are not well established.

## Methods

In prospective single-center study (2004-2014) we included 124 HIV-negative patients with REC. Median age was 53 y (range – 46-65), women – 91.

The patients with relapse of REC were divided into two groups: 62 patients with MAT, median age - 55 (range – 46-64); and 62 patients without MAT, median age - 56 (range – 48-65).

Endoscopic examination with a biopsy, microscopy and culture was made in all patients. Identification of the pathogen was made with MALDI-TOF MS. Susceptibility testing to fluconazole and voriconazole was made with the disco-diffusion CLSI M44-A method. A criterion of RCE was  $\geq 1$  relapse in a year.

## Results

Risk factors for REC were thyroid disease (OR= 2,8; 95% CI, 1,5-5,2); hypothyroidism (OR= 4,8; 95% CI, 1,4-16); diabetes mellitus (OR = 1,1; 95% CI, 0,4-2,8); bronchial asthma (OR= 1,2; 95% CI, 0,5-2,9); use of inhaled corticosteroids (OR = 4,22; 95% CI, 0,5-2,9) and broad-spectrum antibiotics (OR = 1,8; 95% CI, 0,4-8,7) (Fig.1).

Risk factors	OR	95% CI
thyroid disease	<b>2,8</b>	1,5-5,2
hypothyroidism	<b>4,8</b>	1,4-16
diabetes mellitus	<b>1,1</b>	0,4-2,8
bronchial asthma	<b>1,2</b>	0,5-2,9
inhaled corticosteroids	<b>4,22</b>	0,5-2,9
antibiotics	<b>1,8</b>	0,4-8,7

Fig. 1. Risk factors of REC.

Other risk factors of REC were smoking and the consumption of very hot food.

The clinical signs were dysphagia (90%), retrosternal discomfort (50%), and odinophagia (18%).

Endoscopic features were hyperemia (100%) and contact sensitivity (100%) of esophagus mucosa, and white fibrin plaques (75%). (Fig.2)



Fig. 2. Endoscopic features of REC

Etiology agent was *C. albicans* (99%), susceptible to fluconazole and voriconazole in vitro (100%).

Treatment of relapse with fluconazole 150 mg/day for 3-4 weeks was effective in 100% patients.

Patients with MAT received fluconazole 150 mg once a week for 6 months. All these patients were in remission of REC in 6 months. In patients without MAT rate of relapse in 6 months was 57% ( $p < 0,005$ ).

There were no side effects or drug-drug interactions in patients with MAT.

## Conclusions

*Candida albicans* was a pathogen in 99% patients with recurrent esophageal candidiasis.

Risk factors were thyroid disease, hypothyroidism, diabetes mellitus, bronchial asthma, previous use of inhaled corticosteroids and broad-spectrum antibiotics, smoking and the use of very hot food.

Maintenance antifungal therapy with 150 mg fluconazole once a week for 6 months was effective and safe in HIV-negative patients with recurrent esophageal candidiasis.