

# **ABSTRACT**

**Key words:** MIDDLE EAR CLEFT – EUSTACHIAN TUBE – OME -  
FUNGI - PCR

## **Background:**

OME often is considered a direct extension of the inflammatory process that occurs during long lasting or recurrent episodes of acute otitis media (AOM), which is confirmed by the fact that almost all cases of OME follow episodes of AOM. The observations above suggest that OME has an infectious etiology. Most bacterial and viral cultures of middle ear fluid that had been done were often negative suggesting that other infectious agents may be involved as fungi.

## **Methods:**

Thirty patients (group A) suffering from chronic secretory otitis media (OME) were enrolled in this study. Patients were selected among those attending the ENT outpatient clinic of Fayoum university hospital presenting with chronic otitis media with effusion during the period from February 2013 till November 2013. Three samples were collected and investigated using PCR assay with universal fungal primers and Sabouraud agar; the first sample was obtained from the fluid of the middle ear before insertion of the ventilation tube in the drum, the second sample was obtained from nasal secretions and the third sample was obtained from the ipsilateral peritubal area of the nasopharynx .

Thirty patients (group B) with comparable age group without history of ear diseases were added as control group. For ethical reasons middle ear

samples of this control group were replaced by samples from peritubal area of the nasopharynx of patients scheduled for tonsillectomy or adenotonsillectomy and nasal secretion samples using PCR assay with universal fungal primers and Sabouraud agar.

### **Results:**

The results of group A showed detections of fungi in the fluid of the middle ear in 7 patients by PCR analysis (23.3%) of 30 cases and 5 patients by Sabouraud agar culture (16.6%), negative (N0) growth in 23 patients (76.7%) while detection of fungal DNA in nasal secretion of group A using PCR assay were positive in only 2 cases (6.6%). Group A showed also negative (N0) growth in 30 patients (100%) for nasopharyngeal swab on Sabouraud agar. In group (B) the findings of nasopharyngeal swab were negative (N0) growth in 30 patients (100%) on Sabouraud agar and nasal secretions were negative for fungal DNA detection using PCR assay.

### **Conclusions:**

In this study, fungal DNA could be detected in the middle ear fluid in 7 cases (23.3%) of 30 patients with persistent OME using PCR assay and fungi could be detected in 5 cases (16.6%) on Sabouraud agar.

The results of this study according to statistical analysis demonstrated significant relationship between detection of fungi in the middle ear fluid and the duration of the disease, associated adenoid and history of asthma. This study highlighted the possibility that fungi as detected in the fluid of the middle ear can be considered as one of the etiological factors in the pathogenesis of chronic otitis media with effusion.