

# ANNUAL ASSESSMENT OF THE BACTERIAL ETIOLOGY CAUSING EAR INFECTIONS

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## Introduction

Ear's inflammation or **otitis**, is often associated with bacterial infections, varying its etiology depending on different factors such as age or the clinical presentation of the infection.

## Objective

To evaluate the etiology of ear's infection by classifying it into age groups, clinical entity and period of the year in order to be able to carry out an appropriate empirical treatment.

## Material and methods

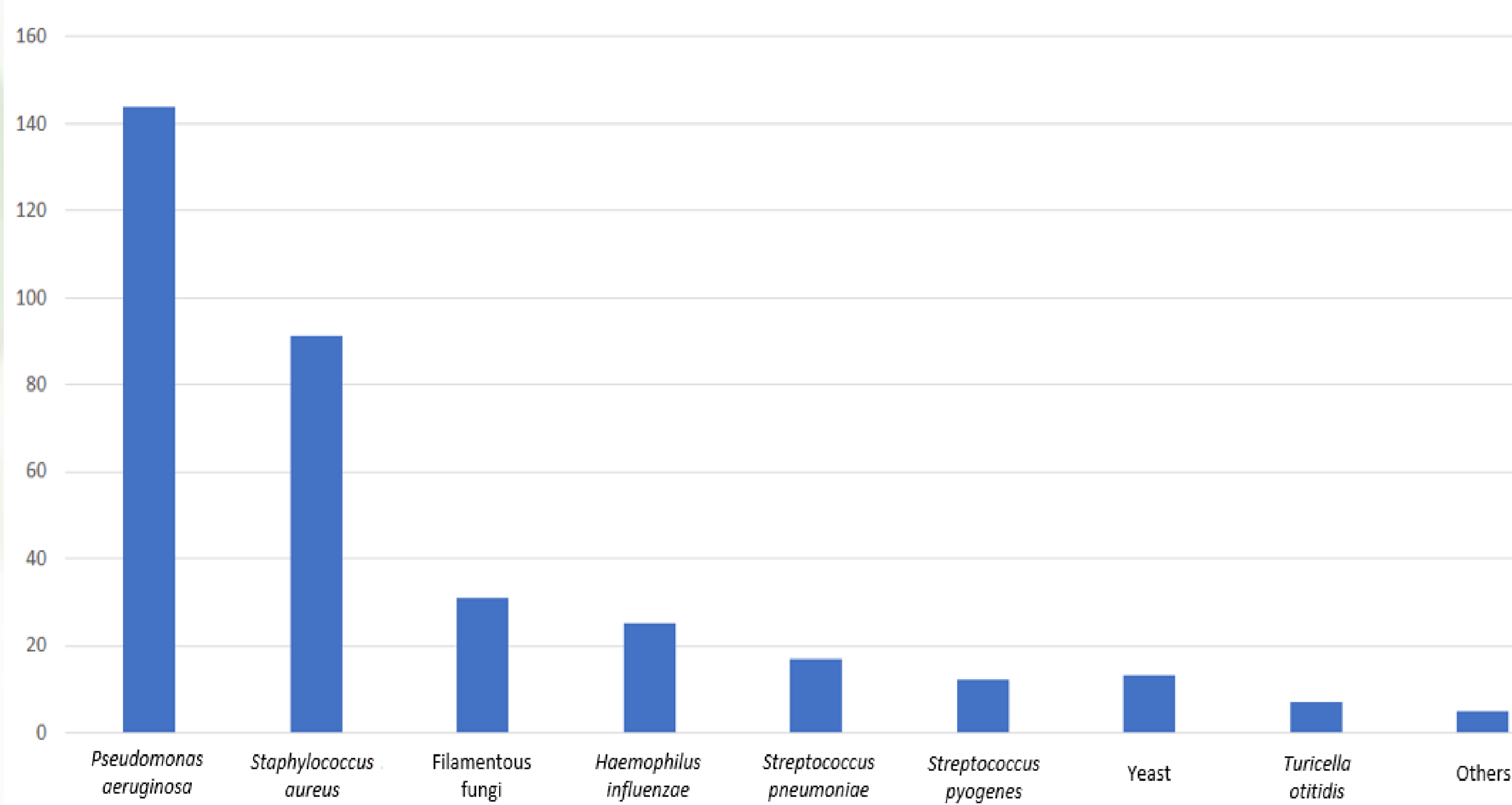
A total of **715 otic's exudates** received from September 2021 until September 2022 were included. The identification was performed by MALDI-TOF MS and the antibiotic susceptibility by disc diffusion or with VITEK®, using **EUCAST v.11,12 breakpoints**.

The clinical syndromes studied were **acute otitis media (AOM)**, **external otitis (EO)**, **otorrhea** and **otalgia** and the age groups of the patients  $\leq 2$ ,  $\leq 18$ ,  $\leq 60$  and over 60 years.

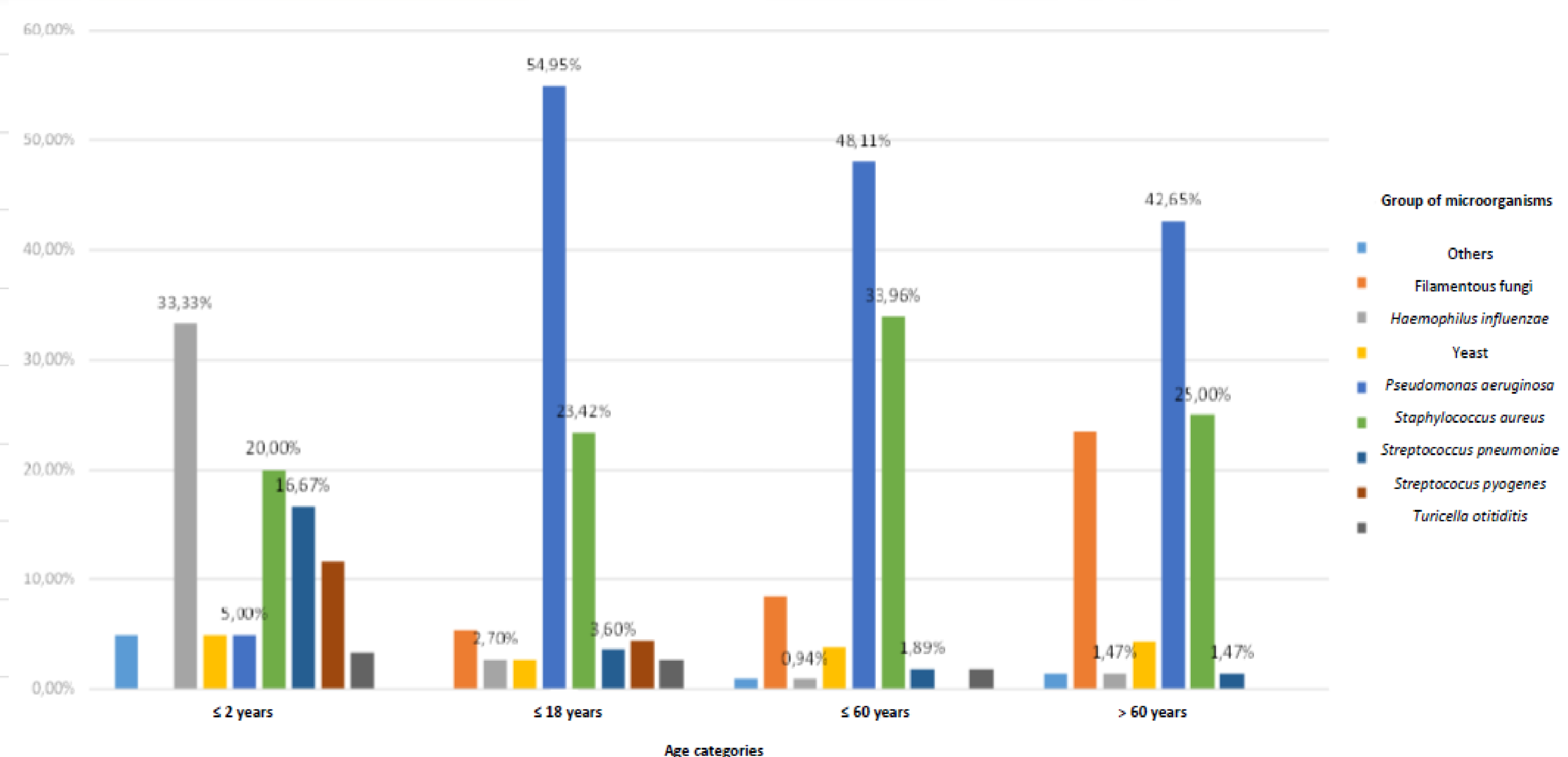
## Results

A **48%** of ear's exudates cultures were positive (345/715). The age group with the most positivity was those with  $\leq 18$  years (**32%** (111/345)). The etiology differs in its distribution by age group, being in  $< 2$  years the most common pathogen ***Haemophilus influenzae*** (**33.3%** (20/60)). The other 3 age groups have a similar distribution, with ***Pseudomonas aeruginosa*** and ***Staphylococcus aureus*** standing out, and in those over 60 a significant increase in filamentous fungi (**24%** (16/68)).

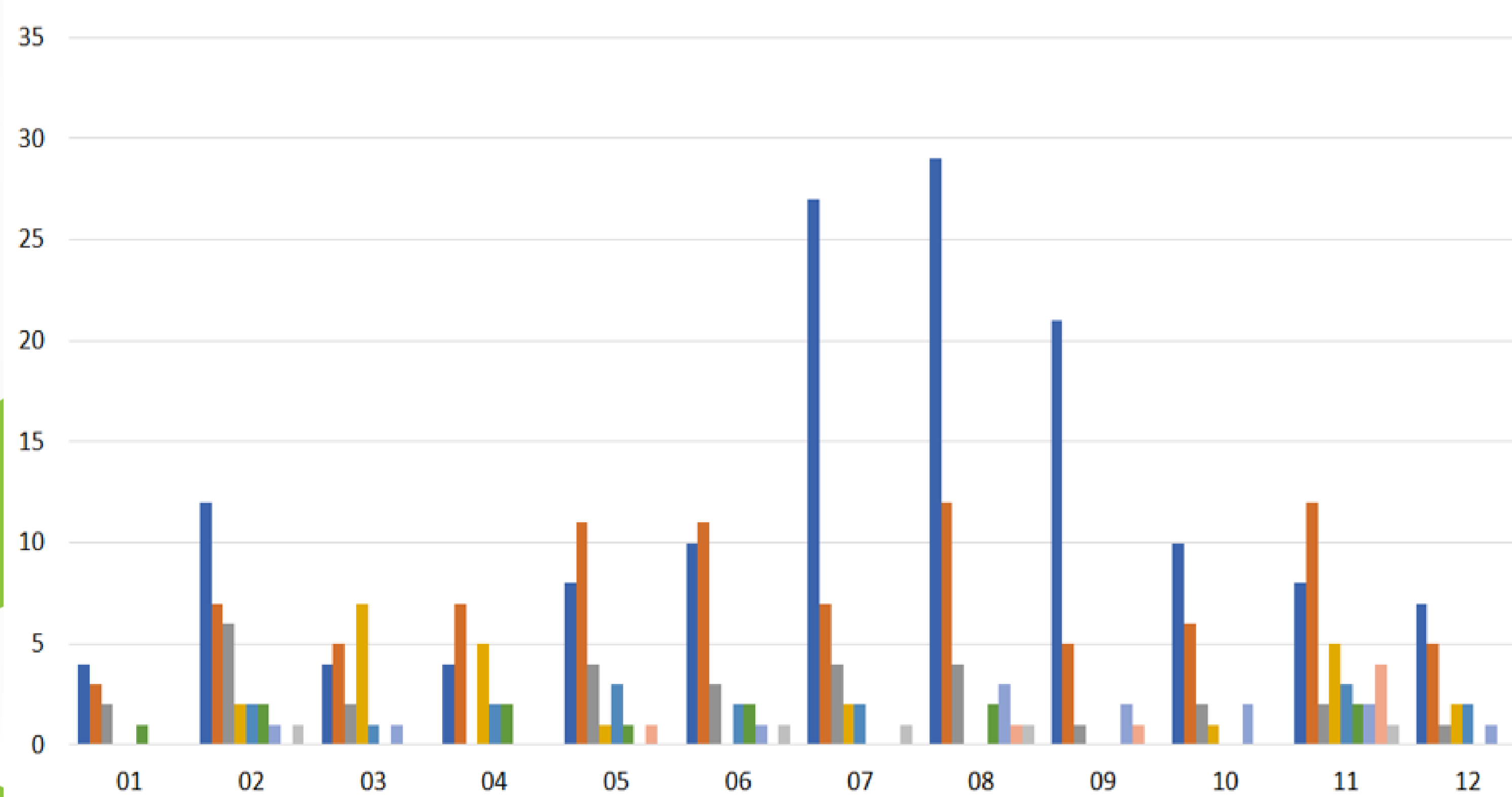
**AOM** is the most frequent clinical form (**41,1%** (142/345)), followed by **EO** (**24,9%** (86/345)) and **otorrhea** (**10,7%** (37/345)). Pathogens associated with respiratory infection were frequently found in AOM, while in EO they were filamentous fungi and ***Turicella otitidis***. It must be emphasized that ***P. aeruginosa*** and ***S. aureus*** were the pathogens more isolated in all ears's disorders analysed. Furthermore, ***P. aeruginosa*** is the pathogen most frequently isolated in the months of July and September, coinciding with the clinical condition of acute diffuse otitis, which appears in hot and humid conditions.



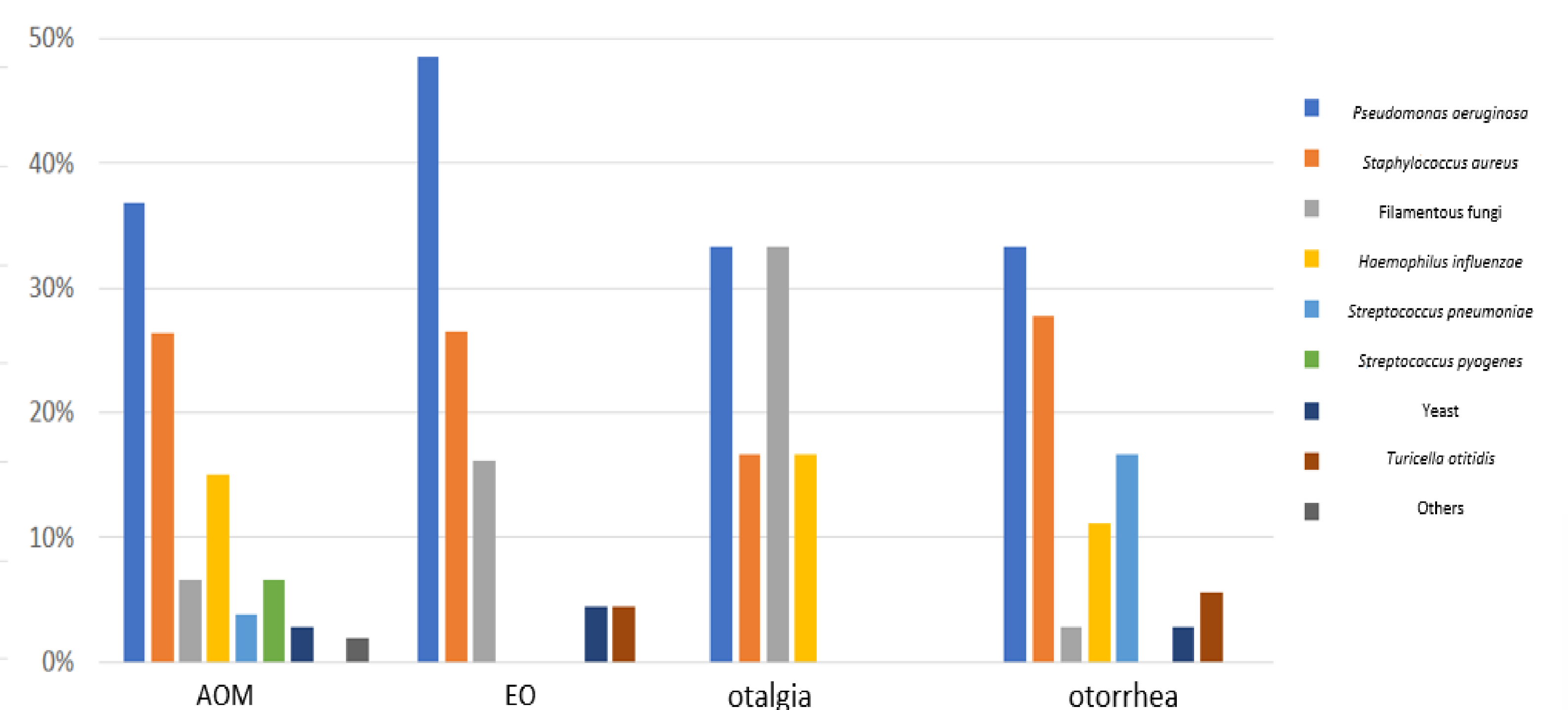
**Graph 1:** Total number of strains isolated during one year in otic's exudate samples.



**Graph 2:** Distribution by age and microorganism of the results from the cultures isolation of otic's samples.



**Graph 3:** Distribution by etiologies and by months of the year.



**Graph 4:** Distribution by microorganisms for the different clinical pictures.

## Conclusions

A different prevalence is observed in terms of the agents and population groups affected by these infections, which must be considered in terms of their therapeutic approach.

