FEMS MICRO MILAN

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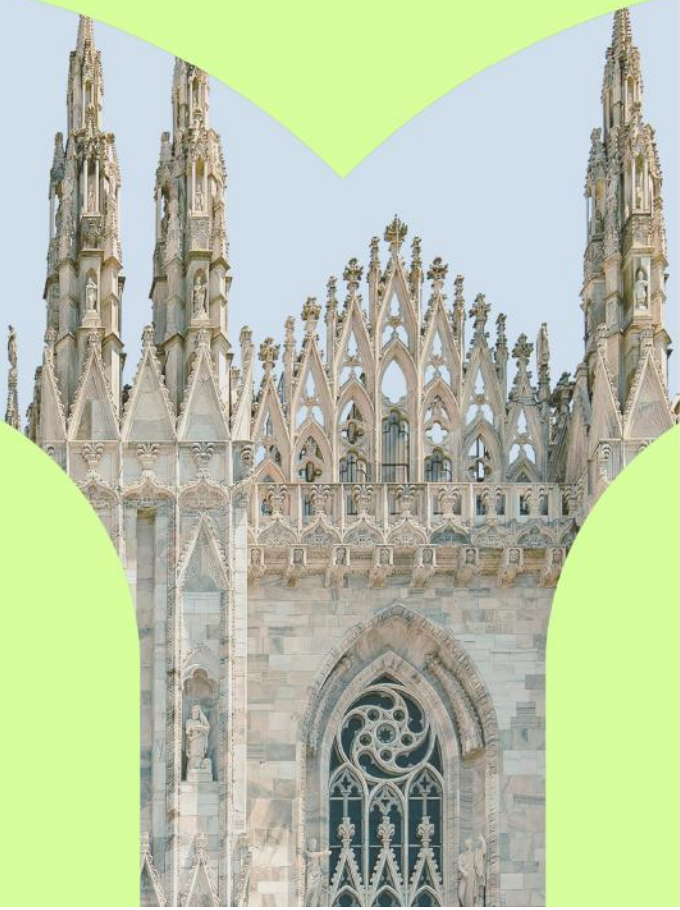
Abstract book



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Study of the composition of nasal microbiome in patients with AERD and ability of isolates to form biofilms

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Background: Aspirin-exacerbated respiratory disease (AERD) is a chronic respiratory condition characterized by a triad of symptoms: asthma, chronic rhinosinusitis with nasal polyps and an allergic reaction to aspirin. Dysbiosis of the nasal cavity microbiome has not been studied in the cohort of patients with AERD.

Aim: determin of nasal microbiome and the ability of isolates to form biofilm.

Methods: taking swabs from the middle nasal passage and subsequent identification of some isolates using MICRO-LA-TEST kits. Laser scanning confocal microscopy was used to visualize biofilm and determine optical density.

Results: nasal microbiome was represented by the following species: *H.parainfluenza* 10.2%, *M.catarrhalis* 8.8%, *S.aureus* 8.6%, *Corynebacterium spp.* 7.08%, *P.aeruginosa* 4.3%. In steroid-resistant patients, gram-negative microflora prevailed: *H. parainfluenza, M. catarrhalis* and *P. aeruginosa*. 12 clinical strains of *M. catarrhalis* were isolated from patients with AERD. Adhesion of bacterial cells was observed after 2 hours, which contained cluster of cells with high luminescence. The optical density of biofilms inoculated with *M. catarrhalis* isolates was 3.28±0.18 units of optical density.

Conclusions: in nasal microbiome, there is an increased content of gram-negative pathogenic microflora, which can form dense biofilms. It is not a characteristic indicator of the causative agents of AERD in this group of patients. Further research is needed to identify factors contributing to the increased incidence of gram-negative pathogens and to understand the implications of steroid therapy.