Profil Mikrobioma Nasal Pasien Covid-19 Dengan dan Tanpa Anosmia = Profile of Nasal Microbiome of COVID-19 With and Without Anosmia

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Abstrak

Anosmia merupakan salah satu gejala COVID-19 yang spesifik. Mekanisme anosmia pada COVID-19 belum dapat dijelaskan dengan pasti. Beberapa studi melaporkan perubahan kemampuan penciuman disertai perubahan komposisi mikrobioma nasal. Saat ini studi mikrobioma nasal pasien COVID-19 yang mengalami gejala anosmia masih kurang. Penelitian ini bertujuan untuk mengetahui profil mikrobioma nasal pasien COVID-19 dengan dan tanpa anosmia di Laboratorium Mikrobiologi Klinik FKUI tahun 2021. Studi potong lintang ini dilakukan di Laboratorium Mikrobiologi Klinik FKUI Juli sampai September 2021 yang memenuhi kriteria inklusi dan tidak memenuhi kriteria eksklusi. Diagnosis anosmia ditegakkan menggunakan metode subjektif. Pengambilan spesimen usap nasofaring dan orofaring untuk pemeriksaan RT-PCR COVID-19 dan usap nasal untuk pemeriksaan mikrobioma dilakukan pada pasien tersangka COVID-19. Bila didapatkan hasil RT-PCR positif, maka pada spesimen usap nasal dilakukan pemeriksaan sekuensing 16S RNA-Next Generation Sequencing. Didapatkan 17 spesimen usap nasal dari subjek yang mengalami gejala anosmia dan 8 spesimen yang tidak mengalami gejala anosmia. Pada mikrobioma nasal pasien COVID-19 yang mengalami gejala anosmia terjadi berupa penurunan kelimpahan filum Actinobacteria, Ordo Propionibacteriales, Famili Propionibacteriaceae, genus Cutibacterium dan Peptoniphilus. Dari penelitian ini, terdapat perubahan komposisi mikrobioma nasal pada pasien COVID-19 dengan gejala anosmia.
.....Anosmia is a specific symptom of COVID-19. The mechanism of anosmia in COVID-19 cannot be explained with certainty. Changes in nasal microbiome composition are associated with olfactory function. SARS-CoV-2 infection alters the respiratory microbiota and influence the susceptibility to COVID-19 infection. There are also changes in the composition of nasal microbioms of COVID-19 patients experiencing anosmia. Studies of the nasal microbiome in COVID-19 patients who experience symptoms of anosmia are rare. The aim of this study is to determine the nasal microbiome profile of COVID-19 patients with and without anosmia.

This cross-sectional study was conducted at the Clinical Microbiology Laboratory of the FKUI from July to September 2021 which met the inclusion criteria and did not meet the exclusion criteria. Anosmia is determined subjectively. Nasopharyngeal and oropharyngeal swab specimens for RT-PCR COVID-19 examination and nasal swabs for microbiome are collected from patients. If a positive RT-PCR result is obtained, then the nasal swab specimen is subjected to a RNA-Next Generation Sequencing. There were 17 nasal swab specimens from subjects with anosmic symptoms and 8 specimens without anosmic symptoms. In the nasal microbiome of COVID-19 patients who experience symptoms of anosmia, there is a decrease in the abundance of the Actinobacteria, Propionibacteriales, Propionibacteriaceae, Cutibacterium and Peptoniphilus. From this study, there were changes in the composition of the nasal microbiome in COVID-19 patients with anosmia symptoms.