

# Profil Mikrobiota Usus Berdasarkan Gejala Ansietas dan Depresi pada Pasien Lupus Eritematosus Sistemik Bergejala Gastrointestinal = Gut Microbiota Profile Based on Anxiety and Depression Symptoms in Systemic Lupus Erythematosus Patients with Gastrointestinal Problem

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## Abstrak

**Latar Belakang.** Pada lupus eritematosus sistemik (LES) ditemukan prevalensi ansietas dan depresi yang cukup besar. Beberapa aspek menjadi kaitan antara lupus eritematosus sistemik dengan ansietas dan depresi, di antaranya disbiosis usus. Rasio Firmicutes/Bacteroidetes rendah menunjukkan disbiosis dan nilainya rendah pada LES.

**Tujuan.** Mengetahui profil mikrobiota usus pada ansietas dan depresi pada LES serta secara khusus mengetahui korelasi rasio Firmicutes/Bacteroidetes dengan skor gejala ansietas dan depresi pada LES.

**Metode.** Penelitian ini mengambil data studi Pengaruh sinbiotik terhadap aktivitas penyakit, respons imun, serta permeabilitas dan mikrobiota usus pada pasien lupus eritematosus sistemik. Dari studi besar tersebut, diambil data dasar (baseline) berupa data demografik, Hospital Anxiety and Depression Scale (HADS), Systemic Lupus Erythematosus Disease Activity Index 2000 (SLEDAI-2k), obat-obatan yang dikonsumsi, pola diet, serta proporsi mikrobiota usus tingkat filum. Keseluruhan data dijabarkan secara deskriptif. Dilakukan analisis korelasi antara rasio Firmicutes/Bacteroidetes dengan HADS-Ansietas dan HADS-Depresi.

**Hasil.** Dari 41 subjek, didapatkan proporsi ansietas 53,66% dan depresi 14,63%. Kelompok ansietas memiliki proporsi Bacteroidetes lebih tinggi dan indeks diversitas lebih rendah daripada kelompok tidak ansietas. Kelompok depresi memiliki proporsi Bacteroidetes lebih tinggi, Firmicutes lebih rendah, dan rasio Firmicutes/Bacteroidetes lebih rendah dibandingkan kelompok tidak depresi. Diagram sebar menunjukkan tidak adanya hubungan yang linear antara rasio Firmicutes/Bacteroidetes dengan skor gejala ansietas dan depresi sehingga tidak dapat dilakukan analisis korelasi.

**Simpulan.** Secara deskriptif didapatkan kecenderungan disbiosis pada kelompok yang mengalami ansietas dan depresi daripada kelompok yang tidak mengalami gangguan psikis.

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**Background.** There was a high prevalence anxiety and depression in systemic lupus erythematosus (SLE). Some aspects interconnecting them, such as intestinal dysbiosis. Firmicutes/Bacteroidetes ratio, one of dysbiosis parameter, found low in SLE patients and also depressed patients.

**Objectives.** This research aim to study intestinal microbiota profile among anxious and depressed SLE patients, and also to know the correlation between Firmicutes/Bacteroidetes ratio with anxiety and depression score in SLE patients.

**Methods.** We used secondary data from research entitled Effects of synbiotic supplementation on disease activity, immune response, gut permeability, and microbiota of systemic lupus erythematosus patients. We used baseline data of demographic data, Hospital Anxiety and Depression Scale, Systemic Lupus Erythematosus Disease Activity Index 2000, drugs used, nutrients intake, and intestinal microbiota profile at phylum level. All those data were described descriptively and also analysed for the correlation between

Firmicutes/Bacteroidetes ratio with anxiety score and depression score.

Results. From all 41 subjects, the proportion of anxiety was 53,66% and depression 14,63%. Anxiety group had more Bacteroidetes than not anxiety group. Depressed group had more Bacteroidetes, less Firmicutes, and lower Firmicutes/Bacteroidetes ratio than not depressed group. The scatterplot shows that there is no linear relationship between the Firmicutes/Bacteroidetes ratio with anxiety and depression symptom scores so that correlation analysis cannot be done.

Conclusion. Descriptively there was a tendency for dysbiosis in the group that experienced anxiety and depression than the group that did not experience psychological disorders.