Lactobacillus acidophilus probiotic inhibits the growth of candida albicans

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Abstrak

Daya hambat probiotik Lactobacillus acidhopilus terhadap pertumbuhan Candida albicans. Candida albicans (C.albicans) merupakan salah satu jamur yang sering menyebabkan kandidiasis oral. Resistensi obat kerap menjadi masalah dalam penatalaksanaan kandidiasis oral terutama pada pasien kompromis imun. Manfaat probiotik terhadap kesehatan telah diketahui secara luas. Probiotik memproduksi asam laktat dan bakteriosin yang mempunyai efek antibakteri. Namun penelitian yang berfokus pada efek antijamur probiotik, terutama untuk C. albicans masih dibutuhkan. Tujuan: Menganalisis efek hambatan pertumbuhan C. albicans setelah pemberian probiotik. Metode: Tiga konsentrasi probiotik yang mengandung Lactobacillus acidophilus (McFarland 6, 8, 10) digunakan untuk melihat efek hambatan terhadap pertumbuhan C. albicans (McFarland 0.5) yang ditumbuhkan pada agar trypticase yeast-extract cystine (TYC). Pengukuran zona hambat dilakukan setelah kultur selama 48 jam. Perbedaan zona hambat antara kelompok uji dianalisis dengan one-way ANOVA. Hasil: Probiotik dengan konsentrasi McFarland 10 mempunyai efek hambatan pertumbuhan yang paling tinggi terhadap C. albicans dan perbedaan ini bermakna jika dibandingkan dengan kelompok uji lain ($p<0.05$). Simpulan: L. acidophillus probiotik mempunyai daya hambat terhadap pertumbuhan C.albicans.

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Candida albicans is the most common organism causing oral candidiasis. Drug resistance to synthetic antifungal medication is becoming a problem in the treatment of oral candidiasis, especially in immunocompromised patients. Probiotic has been known for its health benefits. It produces lactic acid and bacteriocin that has antibacterial effect. Research focuses on antifungal effect of probiotic, escpecially for C. albicans is still needed. Objective: To determine the inhibition effect of probiotic in the growth of C. albicans. Methods: Three concentrations of Lactobacillus acidophilus-containing probiotic (McFarland 6, 8, 10) were used to determine their inhibition effect on C. albicans (McFarland 0.5) growing in trypticase yeast-extract cystine (TYC) agar. The inhibition effect of probiotic was determined by measuring the inhibition zone produced after 48 hours of culture. Difference in inhibition zone among experimental groups was analyzed using one-way ANOVA and LSD post-test. Results: Probiotic with McFarland 10 had the highest inhibition effect against C. albicans and the difference to other experimental groups was statistically significant ($p<0.05$). Conclusion: L. acidophilus probiotic has inhibition effect in the growth of C. albicans.