

Efek Obat Kumur Propolis terhadap Plak dan Gingivitis secara Klinis serta Jumlah Koloni Bakteri Nonspesifik pada Plak = Effect of Propolis Containing Mouthwash on Dental Plaque and Gingivitis Clinically and the Total Count of Nonspecific Bacteria on Dental Plaque

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Abstrak

Latar Belakang: Gingivitis merupakan penyakit periodontal dengan prevalensi paling tinggi di Indonesia. Penyebab utama terjadinya gingivitis adalah akumulasi plak dan tingkat kebersihan rongga mulut yang rendah. Manifestasi klinis gingivitis dapat berupa eritema, edema, perdarahan, dan ulserasi pada gingiva tanpa disertai adanya kehilangan perlekatan periodontal. Secara mikroskopis, ditemukan perubahan flora normal dan infeksi bakteri nonspesifik pada gingivitis. Kerusakan jaringan pada gingivitis bersifat reversibel dengan adanya penghilangan plak dan peningkatan kebersihan rongga mulut. Mekanisme penghilangan plak dapat dilakukan secara mekanis dan kimiawi. Cara mekanis seperti scaling dan menyikat gigi merupakan metode utama penghilangan plak. Metode kimiawi seperti penggunaan obat kumur yang mengandung bahan aktif merupakan terapi tambahan yang efektif, terutama dalam membersihkan area di rongga mulut yang tidak terjangkau oleh pembersihan secara mekanis. Propolis merupakan salah satu bahan alami di bidang kesehatan yang memiliki sifat antiplak dan antibakteri. Obat kumur propolis dinilai memberikan efek terhadap plak dan gingivitis secara klinis serta jumlah koloni bakteri nonspesifik pada plak. **Tujuan:** Mengetahui efek obat kumur yang mengandung propolis terhadap plak dan gingivitis secara klinis serta jumlah koloni bakteri nonspesifik pada plak.

Metode: Penelitian ini dilakukan menggunakan metode eksperimental klinis. Sebanyak 20 orang sukarelawan gingivitis berusia 18-30 tahun berpartisipasi dalam penelitian ini. Subjek dibagi menjadi kelompok uji dan kelompok kontrol dengan pembagian 10 orang kelompok uji berkumur dengan obat kumur propolis dan 10 orang kelompok kontrol berkumur dengan obat kumur tanpa bahan aktif. Pada awal penelitian, dilakukan scaling, penyuluhan, pengukuran awal PI dan PBI, serta pengambilan sampel plak untuk penghitungan jumlah koloni bakteri. Setelah berkumur selama 14 hari, dilakukan kembali pengukuran PI dan PBI serta pengambilan sampel plak untuk penghitungan jumlah koloni bakteri.

Hasil: Hasil penilaian statistik menunjukkan terdapat perbedaan bermakna rata-rata penurunan PBI antara kelompok uji dan kelompok kontrol. ($\text{sig} < 0,05$, selisih $R_{\text{PBI}} = 0.3724$). Rata-rata penurunan PI kelompok uji lebih besar dibandingkan kelompok kontrol (selisih $R_{\text{PI}} = 0.3665$), begitu juga dengan rata-rata penurunan jumlah koloni bakteri aerob dan anaerob (selisih $R_{\text{Aerob}} = 90.6$, selisih $R_{\text{Anaerob}} = 40$) walaupun tidak bermakna secara statistik ($\text{sig} > 0,05$).

Kesimpulan: Berkumur dengan obat kumur propolis efektif terhadap perdarahan papilla dibandingkan dengan berkumur dengan obat kumur tanpa aktif. Berkumur dengan obat kumur propolis dapat menurunkan rata-rata PI serta rata-rata jumlah koloni bakteri aerob dan anaerob pada plak, walaupun tidak bermakna secara statistik.

Kata kunci: Gingivitis, propolis, obat kumur, bakteri nonspesifik pada plak

Background: Gingivitis has the highest prevalence among the other periodontal diseases in Indonesia. The main causes of gingivitis are dental plaque accumulation and low oral hygiene level in patients.

Clinically, gingivitis could appear as edema, bleeding, and ulceration without any loss of attachment. There are shifting of normal floras and certain periodontal pathogens found in gingivitis microscopically. Tissue damage in gingivitis is reversible with the presence of adequate plaque removal and an increase in patients oral hygiene level. Dental plaque removal could be done mechanically and chemically. The mechanical methods like toothbrushing and scaling are the main method, whereas the use of chemical like mouthwash is an adjunctive therapy which shows efficacy. The use of mouthwash with active ingredients could cleanse area in the mouth that could not be reached through mechanical methods. Propolis is one of the natural ingredients commonly studied and used in dentistry because of the antibacterial and antiplaque effects it has. Propolis containing mouthwash could give effects on dental plaque and gingivitis clinically, along with the total count of nonspecific bacteria present in dental plaque.

Objectives: To assess the effect of propolis containing mouthwash on dental plaque and gingivitis clinically along with the total count of nonspecific bacteria present in dental plaque.
Methods: This study is completed using clinical experimental method. There are 20 volunteers with age interval 18-30 years old who participated in this research. Twenty subjects are divided into two groups with the same numbers, which is 10 subjects each groups. The first group is the test group which use propolis containing mouthwash, whereas the other one is placebo group which use mouthwash without any active ingredients. Scaling, dental health education, measurement of plaque index and papillary bleeding index, and plaque sample collection for bacteria assessment were done in the beginning of this study. After using mouthwash for 14 days, there were second measurement of plaque index and papillary bleeding index along with plaque sample collection for bacteria assessment.

Results: Statistic showed there is significant difference ($\text{sig} < 0.05$, mean differences = 0.3724) of papillary bleeding index among the two groups. Mean score of plaque index in the test group showed greater reduction than the placebo group (mean differences = 0.3665) and mean score of total bacteria count in the test group showed higher reduction than the placebo group (mean differences of aerob bacteria = 90.6 , mean differences of anaerob bacteria = 40) though there werent any significant difference present statistically ($\text{sig} > 0.05$).

Conclusion: The use of propolis containing mouthwash showed better effect on papillary bleeding index compared to the use of mouthwash without any active ingredients. The use of propolis containing mouthwash could reduce mean scores of plaque index and the numbers of aerob and anaerob bacteria present in dental plaque, though there werent any statistical significance shown.

Keywords: Gingivitis, propolis, mouthwash, nonspecific bacterial plaque