

KADAR BONE MORPHOGENETIC PROTEIN-2 PADA PASIEN PERIODONTITIS DENGAN DIABETES MELLITUS TIPE 2 PASCA PERAWATAN SCALING ROOT PLANING DAN TRAY CHLORINE DIOXIDE GEL

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INTISARI

Periodontitis ditandai dengan adanya perdarahan gingiva, pembentukan poket periodontal, kerusakan perlekatan jaringan ikat, dan resorpsi tulang alveolar. Salah satu faktor risiko yang dapat meningkatkan terjadinya penyakit periodontitis adalah diabetes mellitus (DM). Di Indonesia, penderita DM tipe-2 mempunyai insidensi dan persentase yang tinggi disertai dengan penyakit periodontitis. Tujuan penelitian ini untuk menguji peningkatan kadar BMP-2 pada pasien periodontitis dengan DM tipe 2 pasca perawatan scaling root planing (SRP) dan *tray chlorine dioxide gel*.

Metode penelitian yang digunakan adalah eksperimental semu. Subjek penelitian sebanyak 30 orang penderita periodontitis diabetika dibagi menjadi tiga kelompok, kelompok pertama diberi perawatan SRP dan *tray chlorine dioxide gel*, kelompok kedua SRP dan pengolesan *chlorine dioxide gel*, serta kelompok ketiga hanya SRP. Setiap responden diambil cairan sulkus gingiva menggunakan *paper points* selama 5 menit dan ditempatkan pada *tube Eppendorf* serta diberi label kelompok. Sampel diuji dengan *Elisa kits* BMP-2 dan *BioRad microplatereader* dengan panjang gelombang 450 nm. Data dianalisis normalitasnya dengan *Saphiro-Wilk*, homogenitas dengan *levene test*, perbedaan sebelum dan sesudah perawatan dengan *Mann-Whitney U-test*, serta perbedaan tiap kelompok dengan *Kruskal-Walis*.

Hasil menunjukkan kadar BMP-2 kelompok pertama sebelum perawatan sebesar 29,41 pg/ml dan setelah perawatan sebesar 41,18 pg/ml, kelompok kedua sebelum perawatan sebesar 29,09 pg/ml dan setelah perawatan sebesar 36,64 pg/ml, serta kelompok ketiga sebelum perawatan sebesar 29,22 pg/ml dan setelah perawatan sebesar 33,09 pg/ml. Berdasarkan hasil tersebut dapat disimpulkan bahwa kadar BMP-2 meningkat pada pasien periodontitis dengan DM tipe 2 pasca perawatan SRP dan *tray chlorine dioxide gel*.

Kata Kunci: *Bone morphogenetic protein-2*, periodontitis, Diabetes mellitus, cairan sulkus gingiva.

BONE MORPHOGENETIC PROTEIN-2 LEVELS IN PERIODONTITIS PATIENTS WITH TYPE 2 DIABETES MELLITUS AFTER SCALING ROOT PLANING AND TRAY CHLORINE DIOXIDE GEL

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Abstract

Periodontitis characterized by gingival bleeding, periodontal pockets, attachment loss, and bone resorption. Risk factors increase occurrence of periodontitis like diabetes mellitus (DM). In Indonesia, individuals with type-2 diabetes had high incidence and percentage accompanied by periodontitis. The aim of this research was examined enhancement of BMP-2 levels in periodontitis patients with type 2 diabetes after scaling root planing (SRP) and chlorine dioxide gel trays.

Research method was quasi-experimental. Research subjects consisted 30 individuals with diabetic periodontitis, divided into three groups: first group received SRP and chlorine dioxide gel trays, second group received SRP and application chlorine dioxide gel, third group received only SRP. Each respondent's gingival sulcus fluid was collected using paper points for 5 minutes and placed in Eppendorf tube, labeled with the group. Samples were tested using BMP-2 Elisa kits and BioRad microplate reader at wavelength 450 nm. Data analysis for normality was conducted using Shapiro-Wilk test, homogeneity was assessed with Levene's test, differences before and after treatment were analyzed using Mann-Whitney U-test, and differences among each group were evaluated using Kruskal-Wallis test.

The results show BMP-2 levels in first group before treatment were 29.41 pg/ml and after treatment 41.18 pg/ml, second group before treatment were 29.09 pg/ml and after treatment 36.64 pg/ml, and third group before treatment were 29.22 pg/ml and after treatment 33.09 pg/ml. Based on these results, it can be concluded that BMP-2 levels increased in periodontitis patients with type 2 diabetes after treatment SRP and chlorine dioxide gel tray.

Keywords: *Bone morphogenetic protein-2, periodontitis, Diabetes mellitus, gingival sulcus fluid.*