Analisis Polimorfisme Gen Myosin 1H (G/A) dan P561T (C/A) pada Maloklusi Kelas I, Kelas II dan Kelas III = Polymorphism Analysis of Myosin 1H (G/A) and P561T (C/A) Gene on Class I, Class II and Class III Malocclusion

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Abstrak

Tujuan: Mengetahui hubungan antara polimorfisme gen Myosin 1H dan P561T dengan pertumbuhan dan perkembangan mandibula pada kasus maloklusi kelas I, II dan III. Metode penelitian: Subjek merupakan pasien dengan dengan kasus maloklusi skeletal kelas I, II dan III berusia 17 - 45 tahun yang sedang dan akan melakukan perawatan ortodonti di klinik ortodonti RSGM-FKGUI, yaitu 50 orang dengan maloklusi skeletal kelas I sebagai kontrol, 50 orang dengan maloklusi skeletal kelas II dan 50 orang dengan maloklusi skeletal kelas III. Penentuan maloklusi kelas I, II dan III berdasarkan analisis radiografis sefalometri awal dengan metode Stainer. Sampel DNA diekstraksi dari potongan kuku dan folikel rambut pada kasus maloklusi skeletal kelas III dan menggunakan sampel yang sudah diekstraksi dari usapan bukal dan sel darah pada pada kasus maloklusi skeletal kelas I dan II. Amplifikasi sekuens DNA dilakukan dengan menggunakan PCR (Polymerase Chain Reaction). Analisis Polimorfisme Genetik gen Myosin 1H dan P561T dengan teknik RLFP (Restriction Fragment Length Polymorphism). Pearson Chi-Square dilakukan untuk menganalisis hubungan antara polimorfisme dan pengukuran kraniofasial pada gen Myosin 1H dan Fisher Exact Test untuk menganalisis hubungan antara polimorfisme dan pengukuran kraniofasial pada gen P561T. Hasil: Terdapat hubungan polimorfisme gen Myosin 1H dengan maloklusi skeletal kelas I, II dan III. Tidak terdapat hubungan polimorfisme gen P561T dengan maloklusi skeletal kelas I, II dan III. Kesimpulan: Polimorfisme gen Myosin 1H merupakan salah satu faktor resiko dari maloklusi kelas I, kelas II dan kelas III. Ekstraksi DNA dari folikel rambut memberikan hasil yang cukup baik dalam hal kualitas DNA dan cara pengambilan sampel yang relatif lebih mudah dibandingkan purifikasi sel darah dan usapan bukal.
.....Objectives: To determine the relationship between polymorphisms of Myosin 1H and P561T genes and the growth and development of the mandible in Class I, II, and III malocclusion cases. Methods: Subjects were patients aged 17-45 years old with Class I, II, and III skeletal malocclusion cases who were undergoing and/ or would undergo orthodontic treatment at the orthodontic clinic at RSGM-FKG UI, namely 50 people with Class I skeletal malocclusion, 50 people with Class II skeletal malocclusion, and 50 people with Class III skeletal malocclusion. Class I skeletal malocclusion was used as control group. Class I, II and III malocclusion were determined based on radiographic analysis of the initial cephalometry using the Stainer method. DNA samples were extracted from buccal swabs and blood cells in Class I and II malocclusion while nail clippings and hair follicles extracts were used in Class III malocclusion. DNA sequence amplification was carried out using the PCR (Polymerase Chain Reaction), while Genetic Polymorphism Analysis of Myosin 1H and P561T genes was performed with RLFP (Restriction Fragment Length Polymorphism). Pearson Chi-Square was used to analyze the relationship between polymorphism and craniofacial measurements in the Myosin 1H gene, while the Fisher Exact Test was used to analyze the relationship between polymorphism and craniofacial measurements in the P561T gene. Results: There is a relationship between Myosin 1H gene polymorphism and Class I, II, and III skeletal malocclusion. There

was no correlation between P561T gene polymorphism and Class I, II, and III skeletal malocclusion. Conclusions: Myosin 1H gene polymorphism is one of the risk factors for Class I, II, and III malocclusion. Extraction of DNA from hair follicles gave good results in terms of DNA quality and was a relatively easier sampling method compared to blood cell purification and buccal swabs.