Korelasi antara derajat kebiasaan merokok dengan arus puncak batuk, arus puncak ekspirasi dan kekuatan otot kuadriceps pada laki-laki dewasa muda perokok aktif = Correlation between the degree of cigarrette smokers (brinkman index) to peak cough flow, peak expiratory flow and quadriceps muscle strength in young adults male active smokers

Maryatul Qiptiah, author

Abstrak

Tesis ini disusun untuk mengetahui korelasi antara derajat kebiasaan merokok dengan Arus Puncak Batuk, Arus Puncak Ekpirasi dan kekuatan otot kuadriceps pada laki-laki dewasa muda perokok aktif. Penelitian menggunakan desain uji potong lintang (crosssectional). Subjek penelitian merupakan pasien laki-laki keturunan asli Indonesia, perokok tembakau aktif minimal 6 bulan, usia 18-40 tahun, tidak obesitas dan memiliki kekuatan otot ekstremitas bawah dengan penilaian MRC 5 tanpa ada riwayat kelemahan sebelumnya. Semua subjek (n=41) dilakukan penilaian derajat kebiasaan merokok berdasarkan Indeks Brinkman, pengukuran Arus Puncak Batuk (APB) dan Arus Puncak Ekspirasi (APE) dengan Peak Flow Meter serta pengukuran kekuatan otot kuadriceps dengan Hand-held dynamometer sesuai dengan prosedur di Poliklinik Departemen Rehabilitasi Medik RSCM Jakarta. Selain itu, dilakukan pengukuran fungsi respirasi menggunakan Spirometri. Hasil keluaran penelitian ini berupa derajat kebiasaan merokok subjek, yaitu 27 perokok ringan dan 14 perokok sedang, serta didapatkan nilai APE, APB, dan kekuatan otot kuadriceps. Selain itu berdasarkan hasil spirometri didapatkan 3 subjek dengan gangguan obstruksi, 1 subjek gangguan restriktif dan sisanya dalam batas normal. Pada karakteristik pekerjaan, didapatkan terbanyak pada kategori manual (58,5%), diikuti non-manual (24,4%) dan bidang jasa (17,1%). Analisa statistik uji korelasi Spearman dilakukan untuk menilai korelasi antara derajat kebiasaan merokok dengan nilai APB, APE dan kekuatan otot kuadriceps. Kesimpulan penelitian menyatakan bahwa terdapat korelasi bermakna secara statistik antara Indeks Brinkman dengan nilai APE, tapi tidak demikian pada nilai APB dan kekuatan otot kuadriceps. Rerata nilai APE pada subjek dewasa muda perokok ringan dan perokok sedang sebesar 429,76±76,89 L/menit dengan nilai p = 0,026. Sedangkan rerata nilai APB dan kekuatan kuadriceps masing-masing sebesar 445,61±73,38 L/menit dan 19,36±4,28 kg pada kaki kanan, serta 18,92±4,03 kg pada kaki kiri, tanpa ada korelasi yang signifikan. Penelitian lebih lanjut mencakup subjek perokok berat dan faktor level aktivitas fisik serta marker biomolekuler diperlukan untuk menilai dampak merokok terhadap fungsi respirasi dan kekuatan otot.

.....This thesis was aimed to determine correlation between the degree of cigarrette smokers to peak cough flow, peak expiratory flow and quadriceps muscle strength in young adults male active smokers. The design was cross-sectional. The subjects were Indonesian male, actively cigarette smoking for at least 6 months, aged 18-40 years, not obesity and had lower limb muscle strength with MRC value 5 and no history of weakness. All subjects (n=41) were assessed the degree of smoking habits based on the Brinkman Index, measurements of Peak Cough Flow and Peak Expiratory Flow with Peak Flow Meters and measurements of quadriceps muscle strength with a Hand-held dynamometer according to procedures at Polyclinic of the Medical Rehabilitation Department at the RSCM Hospital Jakarta. In addition, the respiratory function

measurements were taken using Spirometry. The study results include the degree of smoking habits, 27 subject mild smokers and 14 subject moderate smokers, the value of peak cough flow, peak expiratory flow, and quadriceps muscle strength on both legs. Based on spirometry examination, there are 3 subjects with obstructive, 1 subject restrictive and the others within normal limits. Based on working type, the highest on manual category (58,5%), followed by nonmanual (24,4%) and services (17,1%). Statistical analysis was performed to assess the correlation between Brinkman Index with the three variables. The study concludes that the higher Brinkman Index value, the lower peak expiratory flow value, but not on the peak cough flow and quadriceps muscle strength results. The average peak expiratory flow value in young adult subjects with mild and moderate smokers was 429.76 ± 76.89 L/min with significant difference was obtained with p value = 0.026. While the average peak cough flow and quadriceps muscle strength were 445.61 ± 73.38 L / min and 19.36 ± 4.28 kg in the right leg, and 18.92 ± 4.03 kg in the left leg, with no significant correlation. Further research including heavy smoker subjects, evaluation of physical activity level and biomolecular markers is needed to assess the impact of smoking on respiration function and muscle strength