

Korelasi antara kadar serum Brain Derived Neurotrophic Factor (BDNF) dan nilai mobilitas fungsional pada pasien stroke iskemik kronik = Correlation of Brain Derived Neurotrophic Factor (BDNF) concentration and functional mobility measures in chronic ischemic stroke patients

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Abstrak

Penelitian ini bertujuan untuk membuktikan korelasi antara neurotrofin Brain Derived Neurotrophic Factor (BDNF), dan mobilitas fungsional pada pasien stroke iskemik kronik dalam uji Timed Up and Go (TUG). Penelitian ini merupakan observasi potong lintang dengan kelompok observasi ($n = 35$) dan kontrol sehat ($n = 40$). Kriteria inklusi stroke adalah subjek stroke iskemik fase kronik (onset di atas 6 bulan), berusia 40-65 tahun dan ambulasi mandiri. Pemeriksaan BDNF dilakukan di laboratorium, sedangkan uji TUG dilakukan secara pemeriksaan fisik. Hasil utama adalah rerata konsentrasi BDNF secara signifikan lebih rendah pada stroke kronik dibandingkan dengan kontrol sehat ($21,654,00 \pm 4,250,67$ pg/ml vs $23,424,37 \pm 3,209,96$ pg/ml; $p=0,048$). Median performa TUG secara signifikan lebih lambat pada subjek stroke [$11,90(7,79-50,36)$ detik vs $9,94(7,79-25,34)$ detik; $p<0,001$]. Akan tetapi perbedaan antara BDNF dan TUG ini belum berkorelasi secara signifikan. Sebagai pembahasan, terdapat banyak faktor selain mobilitas yang berkorelasi dengan neuroplastisitas. Juga diketahui bahwa mobilitas berperan penting dalam merangsang neuroplastisitas. Masih dibutuhkan penelitian lebih lanjut untuk membuktikan korelasi BDNF dengan mobilitas. Telah dianalisa bahwa uji TUG mungkin terlalu kompleks dalam menilai mobilitas sebagai sebuah parameter tunggal. Sehingga demikian, studi selanjutnya perlu mempertimbangkan penggunaan pemeriksaan yang lebih sederhana seperti kecepatan berjalan.

.....This study is aimed to see the correlation between a neurotrophin called Brain Derived Neurotrophic Factor (BDNF), and physical mobility within chronic ischemic stroke through the timed up and go (TUG) test. This cross sectional observation had recruited 35 subjects of observation group and 40 healthy controls. Stroke inclusion criteria were those with chronic ischemic stroke (onset above 6 months), aged 40-65 years old and able to ambulate independently. BDNF was measured in laboratory, while TUG test were done through physical exam. Main study results were mean stroke BDNF concentration significantly lower as compared to healthy controls ($21.654,00 \pm 4.250,67$ pg/ml vs $23.424,37 \pm 3.209,96$ pg/ml; $p=0,048$). Similarly, median TUG performance was significantly slower in stroke subjects [$11,90(7,79-50,36)$ s vs $9,94(7,79-25,34)$ s; $p<0,001$]. However, these differences in BDNF and TUG had not been significantly correlated. It was then discussed that there are more than mobility that correlates with neuroplasticity, although prior studies mentioned that mobility has the most crucial role in stimulating it. There needs to be further investigation on correlation of BDNF with mobility. It was also thought that TUG itself may be too complex to examine mobility. Therefore future studies may consider the use of a simpler examination such as gait speed.