

## The association between serum testosterone levels and cognitive function of men aged 50 years or more

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### Abstrak

Tujuan: Proses penuaan merupakan faktor risiko utama terjadinya penyakit degeneratif, termasuk gangguan kognitif. Sejumlah studi menjelaskan bahwa terdapat hubungan antara penurunan fungsi kognitif dengan kadar testosteron yang rendah. Studi ini bertujuan untuk mengetahui hubungan antara kadar testosteron dan fungsi kognitif pada laki-laki yang sudah memperlihatkan penurunan kognitif ringan. Metode: Penelitian ini merupakan studi potong lintang pada laki-laki usia di atas 50 tahun di klinik Neuroscience Siloam Hospitals, Lippo Karawaci, Tangerang antara tahun 2002-2004. Subyek penelitian merupakan pasien yang merasa mengalami penurunan fungsi kognitif. Penilaian fungsi kognitif dilakukan dengan menggunakan 30 butir pertanyaan Mini-Mental State Examination (MMSE). Kadar testosteron diukur secara ELFA (Enzyme Linked Fluorescent Assay). Hasil: Dalam penelitian ini berhasil direkrut 112 orang subyek penelitian, dengan median usia 64 tahun. Sebanyak 101 orang menjalani pemeriksaan fungsi kognitif dan pemeriksaan kadar testosteron. Rerata skor MMSE adalah  $26 + 3.2$ , sedangkan rerata kadar testosteron adalah  $14.7 + 5.72$  nmol/L. Kesimpulan: Tidak ada korelasi yang signifikan antara skor MMSE dan kadar testosteron ( $r=0,038$ ). Penelitian ini menunjukkan bahwa pada laki-laki berusia 50 tahun ke atas dengan keluhan penurunan kognitif memiliki penurunan skor MMSE tetapi memiliki kadar testosteron dalam batas yang normal. Tidak ditemukan adanya korelasi antara skor MMSE dan kadar testosteron, hal ini mungkin disebabkan karena sebagian besar pasien telah memiliki kadar testosteron yang rendah.

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<b>Abstract</b><br>

Aim: The Aging process is a major risk factor for the development of degenerative diseases, including cognitive impairment. Many studies have shown that reduced cognitive function is associated with low testosterone levels. This study was aimed to know the association between serum testosterone level and cognitive functions in men who showed mild cognitive impairment. Method: This was a cross-sectional study in men aged 50 years or more in Neuroscience Clinic Siloam Hospitals, Lippo Karawaci, Tangerang between 2002 and 2004. Subjects were patients who complained of decreasing cognitive function. Cognitive function was assessed by using the 30-point Mini-Mental State Examination (MMSE) questionnaires. Testosterone level was measured by using the enzyme-linked fluorescent assay (ELFA) method. Results: A total of 112 men were recruited during the study period. The median age was 64 years old. One-hundred and one subjects underwent cognitive function test and serum testosterone assay. The mean MMSE score was  $26 + 3.2$  points, whereas the mean testosterone level was  $14.7 + 5.72$  nmol/L. Conclusion: There was no significant correlation between the MMSE score and testosterone level ( $r=0,038$ ). This study showed that men aged 50 years and above with symptoms of declined cognitive function have decreasing MMSE scores but were still within the normal range of testosterone levels. No correlation was found between MMSE scores and testosterone levels since most subjects were eugonadal.