

Relationships of Cognitive Function Based on Informant Questionnaire Cognitive Decline (IQCODE) in the elderly with serum estradiol levels on paramedic with menopause age in Indonesia

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Objective: To determine the correlation between serum estradiol level with cognitive function using Informant Questionnaire On Cognitive Decline In The Elderly (IQCODE) in menopausal paramedics.

Method: This study was conducted at The Department Obstetrics and Gynecology Faculty of Medicine USU , Haji Adam Malik Hospital and started from January-February 2017. Menopausal paramedics at Haji Adam Malik General Hospital who passed the Minnesota Multiphasic Personality Inventory - Lie Scale test (L-MMPI Scale) were then asked to fill the IQCODE test, after which 3 cc of serum was taken from a vena mediana cubiti 3 cc to determine serum estradiol level. Samples were then taken to Klinik Prodia Laboratory (accredited) in Medan. The Kruskal Wallis test was used to determine estradiol serum differences based on the studied variables (>2 variables) which were not normally distributed. The Spearman correlation test was used to determine the correlation between serum estradiol level and cognitive function changes. Confidence interval of 95% and $p < 0.05$ was considered statistically significant.

Results: From the 43 subjects included, all were aged under 60 years, with 32.6 and 67.4% aged 40-49 and 50-59 years respectively. Cognitive function declined in most subjects, with most subjects experiencing moderate decline (24 subjects/55.8%), followed by 13 subjects (30.2%) and 1 subject (2.3%) with slight decline and severe decline, respectively. Serum estradiol differed significantly based on Body Mass Index, with normoweight, overweight, and obese subjects having serum estradiol levels (median) of 10.15 pg/ml, 37.11 pg/ml, and 133.06 pg/ml, respectively, $p < 0.05$. Serum estradiol levels did not differ significantly based on menopausal length, with subjects with menopausal lengths of 2 years, 3 years, and >4 years having serum estradiol levels (median) of 53.22 pg/ml, 18.16 pg/ml, and 15.13 pg/ml, respectively, $p > 0.05$. Using the Kruskal Wallis to determine serum estradiol level differences based on cognitive function decline using IQCODE score, a

significant difference was obtained ($p < 0.05$). Spearman correlation test revealed a correlation (negative correlation) indicating that serum estradiol level decline correlates with an increase in IQ CODE score (cognitive function decline) with a correlation coefficient $r = -0.764$ and p value < 0.001 .

Conclusion: The IQCODE questionnaire could be considered to be used in assessing cognitive function in menopausal paramedic women.

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