" EFFECT OF HDL ON PHYSICAL PERFORMANCE AND COGNITION IN ELDERLY"

ABSTRACT

BACKGROUND

There is a significant person-to person variation in the degree of decline in physical performance and cognition in the elderly. A major factor accounting for this variability is the presence or absence of multiple chronic diseases like stroke, coronary artery disease, peripheral vascular diseases. Numerous studies have demonstrated the importance of dyslipidemia as a risk factor for such vascular events. However, most of these studies have considered only total serum cholesterol concentration. More recently, some authors have shown that other lipid variables like HDL-cholesterol, may play a role in predicting the risks of vascular disease. The purpose of this study is to assess the effect of HDL cholesterol on physical performance and cognition in the Indian population. If a positive correlation is established, improved HDL-cholesterol levels by lifestyle modification or pharmacological intervention could get better physical performance and cognition in the aged.

OBJECTIVES

- To study the effect of HDL on physical performance and cognition in elderly.
- To analyze the association of HDL with co-morbidities.

MATERIALS AND METHODS

Persons attending Geriatric medicine OPD at Rajiv Gandhi Govt. General Hospital, were categorized into three tertiles based on HDL levels (<40mg/dl), 40-49mg/dl, >49mg/dl) and 50 patients from each group selected by simple random sampling. The list of comorbidities of the selected patients was collected. The physical performance and cognition of patients in each group was assessed through SPPB and MMSE score and the effect of HDL cholesterol on physical performance and cognition in elderly, studied.

RESULTS

Physical performance of the study participants was assessed using the short physical performance battery in which the following components was tested - gait speed, repeated chair stand and balance. The mean SPPBS for persons belonging to the first, second and third tertiles was calculated and was found to be 6.44, 7.02, 7.78 respectively. The data revealed a positive association between HDL levels and physical performance (i.e) with increasing HDL levels the physical performance (as measured by the short physical performance battery) improves. This association was found to be statistically significant ($p<0.0001$)

The mean MMSE scores for persons belonging to the first, second and third tertiles are 25.42, 27.18 , 28.82 respectively. This goes to prove that there is a positive association between HDL levels and cognition (i.e) with increasing HDL levels the cognitive function (as measured by the short physical performance battery) improves. This association was also found to be statistically significant.($p<0.0001$)

Also the study revealed a statistically significant association between HDL levels and the following factors

- Alcohol (positive association between HDL and alcohol consumption)
- Diabetes mellitus (negative association between HDL and diabetes)
- Coronary artery disease (negative association between HDL and coronary artery disease)
- Cerebrovascular events (negative association between HDL and cerebrovascular events)

CONCLUCION

In conclusion, the present study suggests that among the elderly, higher levels of HDL-cholesterol are associated with better physical performance and cognition. This result is of particular importance as improved HDL-cholesterol levels by either lifestyle modification or pharmacological intervention could get better physical performance and cognition in the elderly.

KEYWORDS

HDL cholesterol, Physical performance, Cognition, SSPBS, MMSE