The relation between Metabolic Syndrome and cognitive decline in Type 2 Diabetes Elderly Tunisian People

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INTRODUCTION

•Type 2 diabetes mellitus (DM2) is associated with mild decrements in cognitive functioning, particularly in the elderly. It is often preceded by a 'prediabetic stage, characterized by the co-occurrence of insulin resistance and vascular risk factors, usually referred to as themetabolic syndrome.

•Cognitive decrements may already develop in these early stages. Our study is intended to determine the relationship between metabolic syndrome (MS) and cognitive decline in type 2 diabetes Tunisian patients over 65 years age.

METHODS

•The age of the participants were between **60 and 87 years old**. According to NCEP ATP III criteria **30 had MS** and **28** had not. Cognitive performance was determined with the use of standardized mini mental test and the mini mental scores (MMS) of the two groups were compared. Apart from the MS we investigated the relationship between MMS and age, gender, educational status, tobacco and alcohol use, the history of acute myocardial infarction (AMI) and stroke, medication use (antihypertensive, insulin, oral antidiabetic, statin) and body mas index (BMI). Depression, which is a cause of pseudodementia, was also asessed with the use of geriatric depression scale (GDS).

RESULTS

•The MMS was low in **10 patients** (**33,3%**) in the MS group, and in 10 subjects (**25%**) in the control group. We could not find difference between MMS's of two groups statistically (Table 1).

•In this study the MMS was low in subjects with high fasting plasma glucose level, tobacco use, insulin use, advanced age and depression.

•The GDS's of two groups were similar. There was not difference in the MMS's between patients with high blood pressure, high triglyceride level, low HDL cholesterol level, history of AMI and stroke, low educational status, high BMI and in whom without them.

Table 1: MMS in patients with and without SM

	With MS N= 30	Without MS N= 28	*p*
Low MMS	10 (33,3%)	10 (25%)	0,2

•We also could not find difference between MMS's of the patients who use antihypertensives, oral antidiabetics and statins and in whom not using these medications.

DISCUSSION

Type 2 diabetes mellitus (DM2) is associated with mild decrements in cognitive functioning, particularly in the elderly. It is often preceded by a 'prediabetic stage, characterized by the co-occurrence of insulin resistance and vascular risk factors, usually referred to as themetabolic syndrome [1].

Cognitive decrements may already develop in these early stages. These results show that DM2-associated cognitive decline may develop in early stages of the disease, possibly in relation to risk factors clustered in the metabolic syndrome.

CONCLUSION

•The number of elderly people increases in Tunisian, however, cognitive decline related to diseases also increases. The establishment of the risk factors, which affect the cognitive functions and prevention of them in elderly, would prevent the cognitive decline, one of the important causes of mortality and morbidity in today's world.

References :

1- Van den Berg and coll. Cognitive functioning in elderly persons with type 2 diabetes and metabolic syndrome: the Hoorn study. **Dement Geriatr Cogn Disord** 2008;26(3):261-9.