PREFACE

Patients with type-2 diabetes has an increased risk of cognitive impairment. Previous studies have shown that several of the antidiabetic drugs have the potential to improve cognition and recently few human studies have demonstrated the role of Gliptins on cognition in T2DM patients, but all these studies were carried out in western population. In our study, we want to find out the effect of Gliptins on cognition in Indian population.

The current study was designed to evaluate the comparative efficacy of antidiabetic medications on cognitive functions and quality of life in type-2 diabetes mellitus patients associated with and/or without hypertension and dyslipidemia. The prevalence and factors influencing cognitive impairment in type 2 diabetes mellitus (T2DM) patients and the correlation between cognitive functions and quality of life was estimated. A cross sectional, observational study was conducted on 542 T2DM patients with a mean age of 57.90 ± 11.23 from June 2016 to June 2017 in Kovai Diabetes Specialty Centre and Hospital Coimbatore, TamilNadu, India. All participants underwent Cognitive and Quality of life assessment using Mini-Mental State Examination (MMSE) and Short form health survey version 2 (SF-12v2) respectively. Statistical analysis was performed using IBM SPSS (version 21) software.

The prevalence of cognitive impairment was found to be 20.48% among 542 T2DM patients. Socio-demographic factors including age, gender, education, physical exercise, duration of type 2 diabetes mellitus, treatment, food habits, Body mass index, HDL-C and systolic blood pressure were significantly associated with cognitive scores (p<0.05). A significant positive correlation was observed between cognitive scores and quality of life (p<0.001) (r = 0.446). No significant difference in cognitive scores and quality of life with comorbidities, total cholesterol, LDL, triglycerides and diastolic blood pressure were observed. When comparing subjects on different mono and combination therapy such as Metformin monotherapy, Gliptins mono and combination with other oral hypoglycemic agents or Insulin, patients who used Gliptins with biguanide combination
therapy (n=82) was associated with significantly higher performance for cognitive function (p<0.001) with a MMSE score of 28.02±2.16. Subjects who used “Metformin” monotherapy to treat their diabetes showed significantly higher quality of life score (82.08±16.39) (p<0.001) compared to those who used other forms of treatments. 

In conclusion, our study indicates that Gliptins with biguanide combination therapy in type-2 diabetes patients associated with or without hypertension and dyslipidemia has shown better performance on cognitive functions compared to those who used other forms of treatments and most notably it was accompanied by a stable cognitive performance at all glycemic and lipid levels. Subjects who used “Metformin” monotherapy to treat their diabetes have shown better quality of life compared to those who used other forms of treatments. Our data suggest that a combination of Gliptins with biguanide has shown their potential as disease modifying drugs of brain complications in T2DM and is safe from a cognitive stand point.