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Cognitive Impairment and Diabetic Retinopathy in South Indian Type 2 Diabetes Mellitus Patients: A Comparative Study

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Cognitive impairment (CI) is a major health concern among individuals with diabetes, and its relationship with diabetic retinopathy (DR) remains underexplored. This study aimed to investigate the association between CI and DR, while differentiating age-related decline from diabetes-related decline. A cross-sectional analytical study was conducted on 300 age- and gender-matched participants divided into three groups: individuals with diabetes without DR, individuals with DR, and non-diabetic controls. Cognitive function was assessed using the Montreal Cognitive Assessment (MoCA). The median age of the DR group was 58 years, with a mean diabetes duration of 10 years. MoCA scores in the DR group (22.5 ± 3.3) were significantly lower ($p = 0.015$) compared to those without DR (25.3 ± 3.3). Notably, 56% of patients scored below 2.5 in the abstraction and calculation domain. These findings demonstrate that CI is closely correlated with DR in patients with type 2 diabetes mellitus (T2DM). The MoCA tool may serve as an effective screening method for the early identification of cognitive dysfunction in this population. Establishing a link between DR and CI may help predict the risk of cognitive decline in T2DM, underscoring the need for routine DR screening and providing insights for earlier detection and management of dementia.

Keywords: Cognitive impairment, Diabetic retinopathy, Type 2 diabetes mellitus, Montreal Cognitive Assessment, Dementia

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