"AN ANALYTICAL STUDY TO EVALUATE THE ASSOCIATION BETWEEN FUNDUS FLUORESCEIN ANGIOGRAPHIC CHANGES IN DIABETIC MACULOPATHY AND DYSLIPIDAEMIA"

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ABSTRACT:

Introduction:

Diabetic retinopathy (DR) is a leading cause of visual disability and blindness among Diabetics. It is a major microvascular complication of diabetes and is frequently accompanied by lipid exudation. Dyslipidemia leads to the

development of hard exudates and Clinically Significant Macular Edema (CSME) which interferes with vision. The elevated lipid levels are associated with endothelial dysfunction and play an important role in the pathogenesis of Diabetic Retinopathy, especially in the breakdown of blood-retinal barrier. It's important to find an association between serum lipid profile with diabetic retinopathy and its severity. The current study was undertaken to determine the association of serum lipid profile with diabetic maculopathy, the development of hard exudates and to assess the subsequent Fundus Fluorescein Angiographic(FFA) features.

Aims and objectives:

To study the relationship between Fundus Fluorescein Angiographic patterns of diabetic maculopathy and serum lipid levels.

To evaluate the relationship between serum lipid levels and retinal hard exudates in patients with diabetic retinopathy.

Materials and Methods: A total of 50 patients with diabetic retinopathy attending the O.P.D of the Department of Ophthalmology of Government Rajaji Hospital Madurai for ophthalmic evaluation detected to have Diabetic Maculopathy, will be included in this study, for a study period of 6months. A detailed history will be taken. Detailed Ophthalmological examination will be done. Fundus examination with direct, indirect ophthalmoscope and slit lamp

biomicroscopy with 90 D lens for grading of diabetic retinopathy and macular assessment will be done and Fundus photograph will be taken.

Investigations like complete hemogram, urine examination, Biochemical tests- FBS, PPBS, HBA1C, **lipid profile**, serum creatinine will be recorded and ECG will be done. Medical fitness for performing the procedure will be taken. Patient will be explained about the procedure and proper written consent will be taken prior to performing Fundus Fluorescein Angiography.

Results: In our study, majority of the Diabetic Maculopathy patients were between the range of 50-60 years of age, with a slight male preponderance and most of the patients with a sedentary lifestyle developed dyslipidaemia. Among the 50 patients with Diabetic Maculopathy, lipid profile revealed that 19 patients had normal lipid levels and 31 were dyslipidaemic (18 with hypercholesterolemia, 4 with high LDL and 9 with high triglycerides). The FFA findings showed two main patterns (Ischemic Maculopathy indicated by large Foveal Avascular Zone and Blocked Fluorescence due to accumulation of Hard exudates). The FFA findings of Blocked fluorescence were seen more statistically significant among those dyslipidemic patients who had high cholesterol wih a p value of 0.042. But the relation between high triglycerides and high LDL to the presence of Blocked Fluorescence in FFA was not statistically significant (p value 1.00)

Conclusion: With the advent of modernisation and westernisation among Indians, the eventual weight gain and sedentary lifestyle, the advantage of efficient glucose metabolism has been lost and the incidence of diabetes has increased. The significant association between hypercholesteremia and CSME goes in accordance with the study by Al-Bdour et al Wisconsin Epidemiological Study of Diabetic Retinopathy (WESDR) and CURES eye study. The present study underlines the role of elevated serum lipids in the onset of diabetic macular oedema and hard exudates. The analysis of the severity of hard exudates and edema in relation to lipid fractions in patients with diabetic maculopathy showed that total cholesterol was significantly higher in such patients. Hyperlipidaemia is a risk factor for the development of hard exudates in patients with diabetic maculopathy. The current treatment for diabetic retinopathy is laser photocoagulation. With the advent of systemic lipid lowering therapy over the last two decades, there may be potential for medical therapy also to control dyslipidemic in diabetics thus reducing their progression to macular edema. The present study demonstrated statistically significant correlation between diabetic maculopathy and hypercholesterolemia (p value 0.042). Thus strict lipid control can help in improving the quality of life and vision among people with type 2 diabetes who are more prone to develop Diabetic Macular Edema.