DIETARY Ω-3 PUFA FOR TYPE I DIABETES – A COMPARATIVE STUDY OF SARDINE OIL AND FLAXSEED OIL ON STREPTOZOTOCININDUCED DIABETIC MODEL OF RAT

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Abstract - Diabetes mellitus is recognized as a principal endocrine disorder affecting an estimated 415 million people in the world, being one of the major causes for morbidity. Plethora of symptoms observed in the patients with chronic diabetes make things alarming for the patient and the care givers. Diabetes is associated with hyperglycemia, renal disorders, coronary arterial disorders, apart from the neuropathy and cognitive deficits. Omega-3 polyunsaturated fatty acids have been shown to increase antioxidant levels and other metabolic activity to benefit the individual. In the present study, we decided to test usefulness of feeding the diabetes induced rats by injecting streptozotocin for a period of one month. Three groups of rats (Total n = 40, Group 1 control, Group 2a & 2b, Flaxseed oil low dose & high dose, Group 3a & b Fish oil low dose & high dose (n = 8 in each group were tested). At the end of study, their cognitive parameters were tested and compared with the data from control group. We found significantly improved performance in the Morris water maze test and Elevated plus maze test in the group fed with PUFA compared to the controls. We suggest that increasing the Omega-3 PUFA intake will be useful addition for the diet in diabetic patients.

Key words: Diabetes mellitus, Omega-3 PUFA, Cognitive function