Editorial

Exercise and Type-2 Diabetes Mellitus

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Diabetes Mellitus (DM) is a heterogeneous chronic metabolic disease with complex and varying clinical presentation, complications and disease progression. In modern medicine it is categorized in three key types; type-1, type-2 and gestational DM. Comprehensive Management of patients with DM is not limited to glycemic control and should include continuous patient education to avoid complications of acute nature and reduction of the risk of long term multi-systemic complications. Risk factors of T2DM are family history, obesity, lack of physical activity (sedentariness), inappropriate diet, aging, ethnicity, high blood pressure, and impaired glucose tolerance, history of gestational DM, poor nutrition during pregnancy, smoking and urbanization. DM is usually considered to be middle or older age medical condition with shorter Life expectancy due its multiple systemic complications.

Global Prevalence of DM was 382 million in 2013 along with future projection of 592 million by 2035 and mostly targeting the low to middle income underdeveloped countries. Type-2 diabetes is the most common type and comprises more than 90% of total diabetic population. It starts with insulin resistance, where cells fail to respond insulin appropriately with defect in both insulin secretions and function[1]. According to Shaw and colleagues there will be 69% increase in developing countries and 20% increase in developed countries between 2010 to 2030[2]. It demonstrates that the situation is going to be more worsening in developing countries.

T2DM is the most common type of DM associated with hyperglycemic, insulin resistance and relative lack of insulin with slow onset. It gradually affects cardiovascular, respiratory, neurological, musculoskeletal and Integumentary systems with increased risk to develop other medical co-morbidities. Prevalence of T2DM is highest among other types of DM and is 90% of the total diabetic population[3]. It is managed by lifestyle modification, Pharmacology and insulin therapy in advance stages. T2DM can be prevented by Non-pharmacological interventions including; weight loss or maintain weight, regular physical activity, exercises and dietary modifications, while applied it in clinical settings[4].

Majority of diabetic patients are overweight and therefore routine physical activity for weight loss and dietary recommendations have less chances to get significant results. Therefore more aggressive, structured and plan physical activity and exercise program with low caloric diet is suggested[5]. Physical Activity, Exercise and diet plan are the foundation in the management of T2DM[6]. Physical activity, exercise also plays a key role in the prevention and management of insulin resistance among patients with

T2DM[7]. Different types of exercise has different effects on insulin resistance depends upon time duration and intensities. High intensity interval training has been reported to have positive effects on insulin resistance in patients with T2DM[8]. Aerobic exercises improve glycemic control in the management of patients with T2DM and reduced risk of complications[9].

In conclusion it is a dire need to educate the patients for the importance of physical activity and exercises and involve the patients with T2DM in structure and supervised exercise program like in cardiac rehab. Thus a persistent physical activity program with long term and more productive outcomes should be implemented. We need to develop specialized diabetic rehabilitation centre to manage glycemic control, obesity, reduce insulin resistance and prevent or delay post diabetic complications.[10] T2DM can be bitter managed by inculcating structured physical activity under the supervision of qualified physical therapist along with appropriate dietary plan and medical management.

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