Insulin resistance due to obesity

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The pathophysiology of Diabetes involves multiple organs. The pancreas is responsible for the B cell function and insulin secretion. People who have impaired glucose tolerance may have lost 80% of their beta cell functionality (Cummings et al., 2015). The pancreas plays a key role in the transport of glucose to the plasma membrane, resulting in hyperglycemic adipose tissue. Obesity produces extracellular concentrations of lipids and abundance accumulation of macrophages in adipose tissue which causes insulin resistance. Inflammation, cytokines and other bioactive substances are linked to obesity induced insulin resistance. The significant impact of obesity has nearly doubled from 1980 to 2017 (Jiang & Choi, 2014). This fast growing concern with obesity related insulin resistance requires a level of T2DM that affects every health conditions such as heart disease, stroke, retinopathy, nephropathy, neuropathy, and peripheral vascular disease (Jong & Choi, 2014).

Pathophysiology of Diabetes

Insulin resistance is a decreased ability for the tissues such as adipose tissue to react to insulin. There are many risk factors for T2DM including age, race, pregnancy, stress, genetics, and obesity. Obesity leads to a decreased ability to produce insulin properly and development of T2DM. Diabetes is largely preventable by maintaining a healthy weight and diet and exercise.

Underlying Pathophysiology

Insulin resistance is T2DM is directly related to the mechanisms of insulin action. The loss in the amount of energy used versus the amount of food eaten. The excessive accumulation of adipose tissue can lead to obesity and insulin resistance. Disruption of tissue is where energy is stored and released. Energy is in the form of triglycerides, carbohydrates, proteins, fats and cell mass. Insulin resistance is a major risk factor for T2DM including age, race, pregnancy, stress, genetics, and obesity. Obesity leads to a decreased ability to produce insulin properly and development of T2DM. Diabetes is largely preventable by maintaining a healthy weight and diet and exercise.

Significance of Diabesity

There is no cure for T2DM. Physicians, nurses, and other health care professionals are involved in ongoing education about this disease, including how to prevent and manage T2DM. Oral medication and insulin are effective treatment options, but ultimately controlling the glucose levels by diet and exercise help decrease the severity of the illness. Diabetes can affect many other organs including your heart, kidneys, brain, eyes, and vascular system. Optimal glucose control is achieved by early diagnosis and intense treatment. Diet and exercise play a key role in decreasing the risk of developing T2DM. Understanding how to keep a blood sugar level under control is of vital importance.

Conclusion