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Novel Therapeutic Targets Protecting Beta Cell: Diabetes Mellitus Type 2

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EDITORIAL NOTE

Diabetes Mellitus Type 2 is one of those anabolic diseases that is identified via loss or malfunctioning of beta cells that produces insulin in the islets of Langerhans, an organ inside the pancreas helping in controlling systemic blood sugar levels. Complications in diabetes include chronic and high blood sugar levels, systemic metabolic failures, multiple organ damage and all these can lead to impulsive death. There are certain pharmacological mediators present for the management of Diabetes Mellitus type two but none of the pharmacological finding could completely stop or reverse the downfall of the disease. Certain studies have validated that rigorous insulin therapy has the potential to improve blood sugar level in individual suffering from second type of diabetes but their side effect includes unintentional weight gain increased risk of major drop in blood sugar level causing hypoglycaemia. Diabetes is a chronic disease that arises when the pancreas does not create enough insulin or when the body's insulin is not used effectively. Insulin is a hormone that controls blood sugar levels. Uncontrolled diabetes causes hyperglycemia, or high blood sugar, which causes catastrophic damage to many of the body's systems, including the neurons and blood vessels, over time. Type 2 diabetes is caused by the body's inefficient insulin utilisation. Type 2 diabetes affects the vast majority of diabetics. Excess body weight and physical inactivity are the primary causes of diabetes. The symptoms are comparable to those of type 1 diabetes, but they are usually milder. As a result, the condition may not be detected until years after it has begun to cause difficulties.

Therapeutic targets that protect beta cells: Adipokines-Adiponectin, Leptin, and Interleukin (IL)-6, are certain adipokines that are linked with the development of diabetes. Certain studies have proved that low level of adiponectin and elevated IL-6 causes development of consequent diabetes autonomous of obesity, and insulin. In some of the cases relation of leptin to risk of diabetes is clearly variable. Studies have proven its positive and protective effect against diabetes. Finally, it was found that inflammatory markers are prognostic of diabetes and talking about adiponectin and leptin these are synthesized by adipocytes. Hence, it remains possible that adiponectin and leptin are subsequently linked with diabetes and partly mediated via cytokines.

Insulysin-Insulin Degrading Enzyme (IDE) selectively degrades certain peptides like insulin, amylin, amyloid these peptides form toxic aggregates that helps in maintaining proteostasis. Defects caused by this enzyme are linked with the increase of type 2 diabetes mellitus and other metabolic syndrome. Retinence of Insulin Degrading Enzyme causes glucose intolerance. Certain scientists are working on Insulin Degrading Enzyme based therapy for human diseases, particularly type 2 diabetes mellitus, so that these targets can protect the beta cell and reduce other side effects.

Amylin-it is one of the peptide hormones that are related with the insulin present in the pancreatic β -cell and this hormone generally lacks in diabetic individuals. Basic function of this hormone is inhibition of glucagon secretion, delaying gastric emptying and it also works as a satiety agent. Amylin therapy improves glycemic control in individuals suffering from type 2 Diabetes.