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A Brief Report on Blood Glucose Regulation

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Description

Diabetes, a chronic metabolic disease (Type 1 diabetes), is characterized by the release of little or no insulin, resulting in an abnormal rise in blood glucose levels that, if left untreated, can lead to serious complications (hypoglycemic coma, damage blood vessels and nerves). Type-1 diabetes, commonly known as insulin-dependent diabetes, is a condition in which the pancreas produces little or no insulin, producing serious health problems with no obvious symptoms for years. The treatment consists of one to five daily insulin injections combined with dietary changes. Patients can lower their own risk of problems by self-monitoring their blood sugar levels, for example. As a result, it is required to check blood sugar levels numerous times a day and inject the correct quantity of insulin using a specific pen. This continual monitoring becomes tiresome quickly, lowering the quality of life for Type I diabetes patients. The use of an automatic external pump as an artificial pancreas appears to be a suitable approach. For insulin-dependent diabetics, this pump features a digital control that totally replaces the pancreas. The human body is extremely sensitive to glucose concentration excursions in the blood compared to the baseline level, and even a minor disruption over time can result in a slew of problems [1].

Several pancreatic hormones control blood sugar levels. Pancreatic hormones control blood glucose levels in a variety of ways, both normally and abnormally, by expressing or repressing the targets of many genes, molecules, or cells. Some synthetic medications and treatments are used to treat glucose regulation issues, but many are also used to treat other health issues caused by poor blood sugar control. Many novel approaches have been utilised to develop phytochemical-based drugs to treat glycemic control issues, insulin resistance, intestinal or GLP1 homeostasis, beta cell function, or glucose [2]. Many chemicals that influence absorption have been isolated and identified. More metabolic pathways (e.g., cure of hyperglycemia, or increased insulin resistance, or cure of pancreatic beta cell regeneration, or increased GLP1, pancreatic islet cell production, production and insulin receptor signalling, and Increased insulin secretion, or decreased insulin resistance, or gluconeogenesis and insulin mimicking, or production of -glucosidase and -amylase inhibitors, or maintenance of pancreatic islet mass, or Protein Kinase SIRT1 or hypoglycemia are activated to minimise chemical structure or lipid peroxidation.

Diabetes patients frequently and continuously suffer hyperglycemia, which is a symptom of the disease. Glucose persists in the plasma in persons with type 1 diabetes who do not make insulin since insulin is required to lower glucose levels. The liver is another element that contributes to persistent hyperglycemia. When a diabetic fasts, the liver produces extra glucose and continues to produce glucose even after blood sugar levels have returned to normal. Skeletal muscle is another source of persistent hyperglycemia in diabetics. Diabetic muscles absorb too little glucose after a meal, causing blood sugar levels to remain elevated for long periods of time [3,4]. Insulin resistance, beta cell dysfunction, excess glucagon, and a decrease in incretins all contribute to metabolic dysfunction of the liver and skeletal muscle in type 2 diabetes.

Conclusion

In an acute breakfast and a second-meal standardised lunch meal setting, the metabolic effects of oat polar lipids were investigated. The amount of polar lipids consumed in the diet varies greatly depending on the cuisine. Polar lipids make up 1–10% of total dietary lipids and can be found in a variety of plant and animal sources, including whole grains, nuts, vegetable oil, dairy products, fish, and meat. The effects of oat polar lipids rich in glycolipids were compared to those of rapeseed oil, a commonly used edible oil with modest quantities of glycolipids (1%) [5]. The findings suggest that supplementing breakfast with oat polar lipids, particularly those high in galactosylacylglycerols, has the potential to improve cardio-metabolic risk-related indicators and increase gut hormone release in the 5.5 hours after intake. Slower hydrolysis or limited digestion of oat polar lipids compared to rapeseed triglycerides, resulting in delayed absorption and thus potentially increased stimulation of gut hormones release (GLP-1 and PYY) throughout the gastrointestinal tract, is one possible underlying mechanism behind the increased concentrations of gut hormones.

Conflicts of Interest

The authors declare no conflict of interest.

References

1. DiNicolantonio, James J., James H. O'Keefe, and Sean C. Lucan. "Added fructose: A principal driver of type 2 diabetes mellitus and its consequences." *Mayo Clin Proc* 90 (2015): 372-381
2. Sievenpiper, John L., Russell J. De Souza, Arash Mirrahimi, and Matthew E. Yu, et al. "Effect of fructose on body weight in controlled feeding trials: A systematic review and meta-analysis." *Ann Intern Med* 156 (2012): 291-304.
3. Christensen, Lars P. " Galactolipids as potential health promoting compounds in vegetable foods." *Recent Pat Food Nutr Agric* 1 (2009): 50-58.
4. Asadipooya, Kamyar, and Edilfavia Mae Uy. "Advanced glycation end products (AGEs), receptor for AGEs, diabetes, and bone: Review of the literature." *J Endocr Soc* 3(2019): 1799-1818.
5. Carnovali, Marta, Livio Luzi, Giuseppe Banfi, and Massimo Mariotti. "Chronic hyperglycemia affects bone metabolism in adult zebrafish scale model." *Endocrine* 54 (2016): 808-817

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