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Review Article

Pharmacodynamics Activity of Electrohomoeopathy Medicine in Diabetes

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Abstract

The diabetes mellitus is the most common disease in the world including India. There are lot of research going on how to minimize the incidence of diabetes even with lot of effort from government, versions NGO and regulatory body cases of the diabetes increasing day by day. Along with metabolic disorder Diabetes is a kind of Scio economical disorder where patient loss the money, get comorbid disorder due to prong used of conventional medication it affects the economy of country and increase the mortality rate. Usually it affects to all the age group but middle and elderly age people are more porn to this. In this article we are going to discuss case study with Electrohomoeopathy medicine and how Electrohomoeopathy medicine work in diabetes patient with all possible mechanism of action via receptor, root cause of diabetes, pathogenesis and social economic benefit with plants based Electrohomoeopathy medicine.

Keywords: Pharmacodynamics Activity; Electrohomoeopathy Medicine; Diabetes

Introduction

Diabetes is a disorder of metabolism. Diabetes can be classified like in the following class:

1. Type 1 diabetes it occurs due autoimmune β-cell destruction which lead to absolute insulin deficiency.
2. Type 2 diabetes it occurs due to a progressive loss of adequate β-cell insulin secretion frequently on the background of insulin resistance.
3. Gestational diabetes mellitus it diagnosed in the second or third trimester of pregnancy that was not clearly overt diabetes prior to gestation).
4. Specific types of diabetes due to other causes like monogenic diabetes syndromes neonatal diabetes maturity onset diabetes of the young, diseases of the exocrine pancreas i.e. cystic fibrosis and pancreatitis, and drug or chemical induced diabetes like with glucocorticoid use in the treatment of HIV/AIDS, or after organ transplantation [1].

Pathogenesis of diabetes and impacts on receptor

The pathogenesis of diabetes mellitus resulted loss of islet β cell secretion function and selective destruction of these cells mainly by aggressive autoimmune responses facility by both cellular and humoral immune pathways. Pancreatic islets of β-cells heavily infiltrate by Inflammatory cells lead to insulitis, T-lymphocytes and CD8+ responsible for specific killing of β-cells. The etiology of DM involves a strong genetic predisposition, chiefly human leukocyte antigen class II genes and many putative environmental condition, which trigger autoimmunity or progression of diabetes mellitus while autoimmunity responses, retarding disease progression or preserving remaining β-cell function after clinical onset.

There are various pathophysiologic abnormalities lead to diabetes mellitus. Study suggested that peripheral glucose uptake (mainly muscle) decreased in combination with enhancement of endogenous glucose production and insulin resistance. Increase the free fatty acid levels, lipolysis, accumulation of intermediary

lipid metabolite leads to increase in glucose output while decrease in peripheral glucose utilization disturbed beta-cell function [2].

It is well established that decreased peripheral glucose uptake (mainly muscle) combined with augmented endogenous glucose production are characteristic features of insulin resistance. Increased lipolysis, elevated free fatty acid levels, along with accumulation of intermediary lipid metabolites contributes to a further increase in glucose output, a reduction in peripheral glucose utilization and impaired beta-cell function. Compensatory insulin which secrete from the pancreatic beta-cells may at first maintain regular plasma glucose levels while beta-cell function is already abnormal at this stage and worsened over time. Concomitantly, inappropriate release of glucagon from the pancreatic alpha-cells, mostly in the post-prandial period. In type 2 diabetes both impaired insulin and excessive glucagon secretion contributed to incretin defect mainly lead to inadequate release to the gastrointestinal incretin hormones upon food ingestion. Incretins are metabolic hormones group which stimulate a decrease in blood glucose levels. Incretins are released by blood glucose-dependent mechanism after eating and augment the secretion of insulin released from pancreatic beta cells of the islets of Langerhans. Hypothalamic insulin resistance impaired the ability of circulating insulin to suppress glucose production and renal tubular glucose reabsorption capacity may be enhanced despite hyperglycemia in type 2 diabetes. The pathophysiologic abnormalities need to be considered before initiation of treatment with Electrohomoeopathy medicine.

It has been postulated that both impaired insulin and excessive glucagon secretion in type 2 diabetes are contributed to by the "incretin defect", defined primarily as inadequate release or response to the gastrointestinal incretin hormones upon meal ingestion. Moreover, hypothalamic insulin resistance (central nervous system) also impairs the ability of circulating insulin to suppress glucose production, and renal tubular glucose reabsorption capacity may be enhanced despite hyperglycemia in T2DM. These pathophysiologic abnormalities should be considered for the treatment of hyperglycemia in patients with type 2 diabetes. For in-depth coverage of all aspects of Diabetes and Endocrinology [3].

Carbohydrate has lot of biological importance its chief source energy in the body with basic structure of carbon, hydrogen and oxygen. It gets oxidized and provide energy for other metabolic process. Carbohydrate Metabolism used in other biosynthetic reaction. Inappropriate metabolism of carbohydrate mostly glucose along with protein and fats lead to metabolic disorder like Diabetes [4].

Glucose homeostasis in diabetes

Glucose homeostasis regulation in mammals is dependent on innumerable small endocrine organs known as islets of Langerhans located in the pancreas. Polypeptide hormone insulin secreted by these islets present in β cells. B-Cells act as detector for any changes in circulating nutrients. B-Cells always respond to elevated levels of nutrients and increased the insulin secretion which induce the storage of circulating nutrients in liver, muscle and adipose tissue. β Cells also respond to a wide range of other signals including neurotransmitters, hormones and neuropeptides which modify the insulin secretory response to circulating nutrients. Complex interactions between the autonomic nervous system, islet cells and gastrointestinal incretin hormones allow integration for metabolic fuel intake usage and storage. Insulin signaling is involving a matrix of interacting pathways, allowing for extensive modulation and divergence in signal transduction rather than a linear cascade of sequential reactions [5].

There are various diverse cells share the proximal steps in insulin signal transduction which included the insulin receptor (IR), insulin receptor substrate molecules (IRS), Akt/protein kinase B and phosphatidylinositide 3 kinase.

Insulin action negatively modulated by various cellular mechanisms which impair tyrosine phosphorylation of IR and IRS, foremost among these are serine - threonine kinases and protein tyrosine phosphatases.

The effect of insulin associate with tissue specific biologics are explained by effector systems which involve differentiated target tissues such as the insulin responsive glucose transport system in skeletal muscle, regulated gene expression lead to suppression of gluconeogenesis in liver and enzymatic systems mediating anti lipolysis in adipose tissue.

Insulin action is highly regulated by three pathways for nutrient sensing the hexamine biosynthetic signaling pathway the mammalian target of rapamycin signaling pathway and the AMP activated protein kinase signaling pathway.

There are several factor which can lead inflammation, oxidative stress and endoplasmic reticulum stress responsible for insulin resistance, metabolic syndrome, obesity and impair insulin action via activation of serine and threonine protein kinases.

Insulin and its role in DM

Insulin is a peptide hormone plays a number of roles in carbohydrate metabolism. Insulin regulates glucose and fat used and storage in the body. Many of the cell present in the body rely on insulin which take glucose from the blood for energy.

During the study it was observed that Insulin sensitize the liver, muscle and fat cells to take in glucose from the blood metabolized it to control the glucose level.

Helps control blood glucose levels by signaling the liver and muscle and fat cells to take in glucose from the blood. Insulin therefore helps cells to take in glucose to be used for energy.

If there is no requirement or body having sufficient energy insulin signals the liver to take up glucose and store it as glycogen. The live around 5% of its mass store as glycogen. There are certain cells in the body which can take glucose from the blood without insulin, but most of cells do require insulin to be present for glucose uptake.

The role of insulin and type 1 diabetes

During the clinical practice in the Electrohomoeopathy it was observed that in type 1 diabetes our body produces insufficient insulin so blood glucose level regulation gets impaired and due to this many of the body's cells unable to take glucose from the blood in this condition our body uses alternate sources of energy like ketones which produced by the liver as an alternative energy source for body. However, increased level of ketones in the body can lead to comorbidity called ketoacidosis.

Diagnosis of diabetes and blood sugar level

Earlier diagnosis of diabetes plays an important role for the prevention of secondary complication and comorbidity association like risk of serious complications such as kidney failure, blindness, limb amputations, premature heart disease and stroke.

Common laboratory evaluations for screening, diagnose and monitor of diabetes mellitus include a fasting plasma glucose (FPG) test, a hemoglobin A1c (A1c) test and an oral glucose tolerance test (OGTT) [6].

Method used for diagnosis and screening

1. **Fasting blood glucose:** This is the most common, simple and convenient test used for diagnosing diabetes. Blood sugar is taken after a fast of 8 hours during this test. During this process fasting needed that you should not eat or drink (except water) for 8 hours and usually done in the morning before eating breakfast. A normal fasting blood sugar is a level less than 100 mg/dL. A fasting blood glucose of 126 mg/dL or more, give a diagnosis of type 1 Diabetes Mellitus.
2. **Oral glucose tolerance test:** During this test checks the body's capacity to lower the blood glucose after taking a concentrated amount of glucose. Fasting for 8 hours prior to the test is mandatory for good result. Procedure involve after fasting blood sugar is collected, 75 grams of glucose dissolved in water is ingested. Blood is drawn again after one and two hours. If the blood sugar on the 2nd hour is more than or equal to 200mg/dl, diabetes is considered.
3. **Glycosylated hemoglobin (Hemoglobin A1C or Hgb A1C) level:** Used to determine the level of control of blood sugar in the last two to three months. It helps to find the level of sugar that has attached to the red blood cell. A level of 6.5% or greater is diagnostic of diabetes.
4. **Random blood sugar:** RBS of at least 200 mg/dl with signs and symptoms of diabetes: This test has the lowest reliability and require to confirmed with another test in diagnosing diabetes [7].

Figure 1

Role of insulin and type 2 diabetes

During the clinical practice in the Electrohomoeopathy it was observed that in the type 2 diabetes sufficient insulin produced by the body while cells not responding effectively to insulin this

termed called as insulin resistance. Due to this the body cells take up glucose from the blood inadequate. In the initial stages of type 2 diabetes, the body cells respond by producing more insulin than its normal secretion. In the chronic condition of type 2 diabetes the excessive demands of the pancreas for secretion of insulin continuously might be lead to loss of insulin production from pancreatic beta cells. In the clinical practice study showed level of insulin resistance in type 2 diabetes increased and people may also need to take insulin injections for management of blood glucose level.

Role of insulin in fat storage

Insulin play an important role in the utilization and metabolism of fat in the body. When the liver capacity of glycogen maximizes insulin signals fat cells to take up glucose and stored as triglycerides. An additional mechanism of insulin included inhibiting the breakdown of fats [8].

Electrohomoeopathy approach in type-2 diabetes

When type 2 diabetes patients come to the Electrohomoeopathy clinic consultant treat the patient with dose tapping of existing conventional treatment. Electrohomoeopathy medicine increase the efficacy of body cells in type 2 diabetes so glucose from the blood increase gradually this process continuous till the achievement of hemostasis or equilibrium as described in Electrohomoeopathy philosophy.

Electrohomoeopathy approach in DM

In the Electrohomoeopathy we have novel approach with combination plants medicine to increase the secretion of insulin in the body.

Mechanism action of electrohomoeopathy

During the diabetes there is insufficient Insulin secretion EH medicine act by increase the uptake of the insulin in the tissue. The first action of EH medicine act on intracellular hypoglycemia, gluconeogenesis and glycogenosis reduce the breakdown of fats high level ketone and diabetic ketoacidosis. The second action of EH medicine on extracellular hypoglycemia inhabit the pathway of hyperosmotic plasma, dehydration of cell and hyperglycemic plasma. EH medicine also act on blood glucose renal threshold, glycosuria, polyuria, polydipsia, hypokalemia and hyponatremia.

Case study with electrohomoeopathy medicine

There are several case study on the diabetes patients who has been previous treated with conventional system of medicine. There are multiple patients who visited the Electrohomoeopathy clinical having blood glucose level more than the normal. With the help of Electrohomoeopathy medicine mostly Scrofoloso and associate group which act on the Endocrine system and stimulate the production of insulin.

Figure 2

Electrohomoeopathy treatment

The line of the Electrohomoeopathy treatment is depend on the patients and severity of the disease. There is various line the treatment but during this duration patient was treated with S1, F1, C1 and B.E (before the food) while S10 W.E and A3 (after the food). We have not observed any side effect during the treatment. Diabetic symptoms were gradually decreased finally symptoms was resolved after the day 45. Treatment was continued till the 4 month. Later on treatment was continues as a prophylactic.

Primary Source	Self-reporting
Reporter information (Investigator)	Dr. P. S Pandey
Patient Initial	Privacy
Date of birth (Age)	48 years
Patient weight	82 kg
Sex	Male
Patient medical history	Symptomatic (No comorbidity)
Family history	None
Any allergy	Unknown
Electrohomoeopathy Medicine	S1, F1, C1 and B.E (before food) S10 W.E and A3 (After food)
Concomitant medication (drug with EH)	Regulated diet, conventional treatment (SOS)
Diagnoses and symptoms	Diabetic symptoms
Lab report	Glucometer strips testing and manual PP and Fasting blood sugar level
Summary of patient, disease and drug	Having no any previous history of diseases excluding uncontrolled excess food habit.

Table 1

Result

The blood sugar level was measure with the help of glucometer strips during the 4 months of the treatment duration with Electrohomoeopathy treatment. On the day 0 when treatment started with Electrohomoeopathy medicine patient blood sugar level found to be 440. After the 7th day of the treatment blood sugar level was gradually decrease. Patent was not taking any conventional treatment only following regulated diet. After the 4 months of the treatment it was observe that Electrohomoeopathy medicine shown a very good effective result in the initial diagnosis of diabetic patient.

Figure 3: Effectiveness of electrohomoeopathy medicine.

Figure 4: Blood sugar level vs days of the treatment.

Blood sugar level	Days of treatment
440	0
310	7
240	14
250	21
210	30
180	45
180	60
160	90
120	115

Table 2: Fasting blood sugar level*.

Food recommended for diabetes patients along with electrohomoeopathy medicine

1. Foods rich in roughage such as leafy vegetables, whole grains and cereals, oats, wheat bran, fruits, whole pulses.
2. Eat 10 - 12 pieces of dried nuts such as almond, walnut, pistachios can be taken daily. Eat raw, natural form without soaking or peeling off their skin.
3. Low fat or skimmed variety of milk and milk products.
4. Healthy beverages such as clear soups, fresh lemon water, fresh coconut water, iced tea, plain buttermilk etc.
5. Prefer brown rice to white, whole wheat bread to refined flour bread, food with added fiber to bleached counterparts.
6. Keep yourself hydrated and make sure you take liberal amount of water i.e. 10 - 12 glasses per day or drink water whenever thirsty.
7. Prefer whole/husked varieties of pulses and lentils.
8. Consuming whole sprouts 2 - 3 times a week is also a good option but make sure you do not take any caffeinated beverage in the same meal.
9. Lean or low-fat cuts of poultry and meats are better choice of proteins. 10Avoid red meat, bacon, oily seafood and yellow of egg.

10. Make sure your breakfast is accompanied with a fruit; lunch and dinner with non-oily dressing based salad. If you wish to add some oil to the salad, then it should be olive sesame oil and in controlled quantity.
11. Change the type of oil you use after every three months.
12. Alternate between all the healthy oils such as canola, olive, sesame, sunflower, rice bran, groundnut etc.
13. Not more than 2 teaspoons of visible oil should be consumed on a daily basis.
14. Protective foods such as cinnamon powder, coffee, garlic cloves can be taken on a daily basis to keep the blood sugar in control.
15. Exercise regularly, limit your alcohol intake, quit smoking, control your blood pressure and reduce your risk of cardiovascular disease [9].

Limitation of the Study

Even electrohomoeopathy medicine very much effective for all the chronic and acute disease further evaluation require from the large population. The major challenges are the treatment on compliance from the patient side i. e discontinuation of the treatment after the primary relief. Reporting method data analysis is one of the other challenges during the course duration.

Conclusion

The pancreas has main roles in maintaining normal blood glucose levels by producing and releasing insulin and glucagon. So, homoeostasis state of endocrine system is very much necessary for insulin synthesis which can be achieve by Electrohomoeopathy medicine. The basic principal electrohomoeopathy medicine in diabetes to achieve the normal blood glucose level, pancreatic cell of diabetic individual is more sensitive than healthy organisms. Combination plants which used in this system of medicine contain the active enzymes of several plants. When diabetic patients take this complex remedy it completely covers and controls the blood glucose level. Electrohomoeopathy medicine move through the body via the blood and lymphatic systems and target only those areas that require it. Once the diseased part is sufficiently saturated with the remedy, it stops absorbing it. When all the parts of the body have been healed and a healthy balance restored, the medicine itself is no longer absorbed. Therefore, there are absolutely no risks of over-dosing, side effects or drug dependency. Electrohomoeopathy medicine are cost effective, natural plants source and useful to control the blood glucose level can be used as prophylactic and treatment. This pathy must be taken in the consideration due to instant effect and easily availability and several advantage over other system of medicine. Government should help the Electrohomoeopathy practitioners with proper regulation so they can serve society in the better way.

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