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Vildagliptin A Oral Treatment for Type 2 Diabetes Mellitus: A Survey Based Study.

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Abstract: *Vildagliptin is a novel oral antidiabetic medication that improves the sensitivity of pancreatic islet cells to glucose. Vildagliptin is well tolerated and effective in enhancing glycemic control in patients with type 2 diabetes mellitus (T2DM), according to a comprehensive clinical program comprising over 22,000patients and 7000 patient-years of exposure to the drug. Significant reductions in HbA1c have been demonstrated in monotherapy trials to be associated with body weight-neutral and lipid- neutral effects, as well as a low risk of edema and hypoglycemia.Vildagliptin is a suitable partner for combination therapy because of these qualities. Research on vildagliptin added to metformin has demonstrated notableimprovements in glycemic control (almost as well as thiazolidinedione add-on). The combination has also been shown to be well tolerated and to have minimal concerns for hypoglycemia, weight gain, or lipid abnormalities. Vildagliptin has also beenshown to have good tolerability and clinically significant improvements in glycemic control whether used as an adjunct to sulfonylurea, thiazolidinedione, or insulin treatment, or as part of an initial combination therapy with pioglitazone. Vildagliptin has been demonstrated to improve β-cell function and glycemic management in both T2DM patients with mild hyperglycemia and people with impaired glucose tolerance; some data in the latter group suggests the drug may be able to influence the course of the disease.*

Keywords: diabetes, vildagliptin, incretin, metformin, add-on treatment, hypoglycemia

I. INTRODUCTION

The prevalence of type 2 diabetes mellitus (T2DM) among adults aged 20–79 years Asper Indian Council of Medical Research – India Diabetes (ICMR INDIAB) study published in 2023, the prevalence of diabetes is 10.1 crores.(1 Aug 2023)It is estimatedthat this figure will increase to 430 million by the year 2030. Many antidiabetic agentsare available, including sulfonylureas (SUs), metformin, Vildagliptin,α-glycosidase inhibitors, thiazolidinediones (TZDs), prandial glucose regulators, insulin, and so on. Recently, a new therapeutic approach for the treatment of type 2 diabetes that targets the incretin hormones has been developed. These peptide hormones, glucagon-like peptide 1 (GLP-1) and glucose-dependent insulinotropic peptide (GIP), are released from the intestine after a meal and stimulate insulin secretion in a glucose-dependent fashion.However, their action is limited by rapid inactivation by the enzyme dipeptidyl peptidase (DPP)-4. In addition,

patients with T2DM usually do not respond well to GIP and GLP-1Inhibition of DPP-4 will increase active incretins; therefore, DPP-4 has become a target in diabetes control. To date, several DPP-4 inhibitors are available, including sitagliptin, vildagliptin, saxagliptin, and linagliptin. The pharmacokinetics/pharmacodynamics, efficacy, safety, and tolerability have been assessed in numerous clinical studies.

Key points of this statement include:

Glycemic targets and glucose-lowering therapies must be individualized. Diet, exercise, and education remain the foundation for any type 2 diabetes treatmentprogram.

Unless there are prevalent contraindications, metformin is the optimal first-line drug. After metformin, there are limited data to guide us. Combination therapy withadditional 1–2 oral or injectable agents is reasonable, aiming to minimize side effectswhere possible.

Ultimately, many patients may require insulin therapy alone or in combination with other agents to maintain glucose control.

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All treatment decisions, where possible, should be made in conjunction with the patient, focusing on his/her preferences, needs, and values.

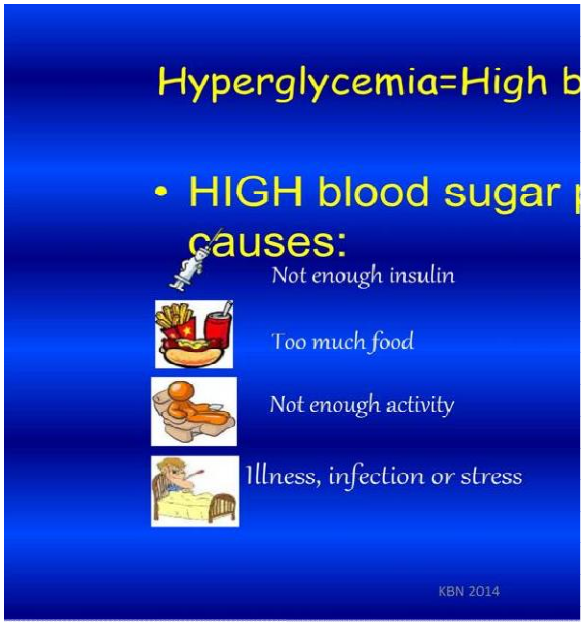
This position statement states that, unless there are clear contraindications, it is crucial to start with lifestyle modifications for the majority of patients. Metforminmonotherapy is then introduced at or shortly after diagnosis. Consider using one of the following five therapy alternatives in addition to metformin if the hemoglobin A1c (HbA1c) target is not reached after approximately three months: SU, TZD, DPP-4 inhibitor, GLP-1 receptor agonist, or basal insulin. The benefits of including a third non-insulin agent in a two-drug combination that is not meeting the glycemic target yet or no longer have been demonstrated by certain research. After three to six months,if combination therapy with basal insulin has not succeeded in bringing the HbA1c target, move on to a more sophisticated insulin strategy, typically in conjunction with one or two noninsulin drugs. In individuals Vildagliptin is a selective and potent DPP-4 inhibitor that inhibits rapid degradation of endogenous GLP-1 and GIP, and increases α- and β-cell responsiveness to glucose, thereby improving glycemic control in T2DM Having a strong binding ability to DPP-4 and a long half-life, vildagliptin is more potent than other DPP-4 inhibitors such as sitagliptin in suppressing glucagon, and causes less glycemic variation. This paper provides the efficacy, safety, and acceptability of vildagliptin in treating patients with type 2 diabetes.

Defination :

Hyperglycemia:

High blood sugar (hyperglycemia) affects people who have diabetes. Several factors can contribute to hyperglycemia in people with diabetes, including food and physical activity

choices, illness, no diabetes medications, or skipping or not taking enough glucose-lowering medication. It's important to treat hyperglycemia, because if left untreated, hyperglycemia can become severe and lead to serious complications requiring emergency care, such as a diabetic coma. In the long term, persistent hyperglycemia, even if not severe, can lead to complications affecting your eyes, kidneys, nerves and heart.



Symptoms:

Early signs and symptoms:

Recognizing early symptoms of hyperglycemia can help you treat the condition promptly. Watch for:

Increased thirst Blurred vision Fatigue Headache

Later signs and symptoms:-

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If hyperglycemia goes untreated, it can cause toxic acids (ketones) to build up in your blood and urine (ketoacidosis).
Signs and symptoms include: Nausea and vomiting
Dry mouth
Weakness Confusion Coma

Typical symptoms include:
feeling very thirsty.
passing urine more often than usual, particularly at night. feeling very tired.
weight loss and loss of muscle bulk. slow to heal cuts or ulcers.
frequent vaginal or penile thrush. blurred vision.
Causes:-
During digestion, your body breaks down carbohydrates from foods such as bread, rice and pasta into various sugar molecules. One of these sugar molecules is glucose, a main energy source for your body. Glucose is absorbed directly into your bloodstream after you eat, but it can't enter the cells of most of your tissues withoutthe help of insulin a hormone secreted by your pancreas.
When the level of glucose in your blood rises, it signals your pancreas to release insulin. The insulin, in turn, unlocks your cells so that glucose can enter and provide the fuel your cells need to function properly. Any extra glucose is stored in your liver and muscles in the form of glycogen.
This process lowers the amount of glucose in your bloodstream and prevents it from reaching dangerously high levels. As your blood sugar level returns to normal, so does the secretion of insulin from your pancreas.
Treatments and drugs:-
Get physical. Regular exercise is often an effective way to control your blood sugar. However, don't exercise if ketones are present in your urine. This can drive your blood sugar even higher.Check your blood sugar. Monitor your blood glucose as directed by your doctor. Check more frequently if you're ill or you're concerned about severe hyperglycemia or hypoglycemia.Emergency treatment for severehyperglycemia Fluid replacement. You'll receive fluids either orally or through a vein (intravenously) — until you're rehydrated. The fluids replace those you've lost through excessive urination, as well as help dilute the excess sugar in your blood. upin your blood. Along with fluids and electrolytes, you'll receive insulin therapy usually through a vein.

Prevention:
The following suggestions can help keep your blood sugar within your target range:Follow your diabetes meal plan. If you take insulin or oral diabetes medication, it's important that you be consistent about the amount and timing of your meals and snacks. The food you eat must be in balance with the insulin working in your body.Monitor your blood sugar. Depending on your treatment plan,you may check and record your blood sugar level several times a week or several times a day. Careful monitoring is the only way to make sure that your blood sugar level remains within your target range. Note when your glucose readings are above or below your goal range.
Complications of Diabetes:
When a person has a high blood sugar level and it isn't controlled timely, it might lead to severe health issues. The following might be the complications of diabetes:
Kidney failure
Heart problems
Damage blood vessels
Distort brain and nerve functioning
Affect vision and damages the eyes
Lead to Depression
Increase foot problems Complications
Long-term complications of diabetes develop gradually. The longer you have diabetes and the less controlled your blood sugar the higher the risk of complications. Eventually, diabetes complications may be disabling or even life-threatening. In fact, prediabetes can lead to type 2 diabetes.

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Possible complications include:

Heart and blood vessel (cardiovascular) disease. Diabetes majorly increases the risk of many heart problems. These can include coronary artery disease with chest pain (angina), heart attack, stroke and narrowing of arteries (atherosclerosis). If you have diabetes, you're more likely to have heart disease or stroke.

Nerve damage from diabetes (diabetic neuropathy). Too much sugar can injure the walls of the tiny blood vessels (capillaries) that nourish the nerves, especially in the legs. This can cause tingling, numbness, burning or pain that usually begins at the tips of the toes or fingers and gradually spreads upward.

Damage to the nerves related to digestion can cause problems with nausea, vomiting, diarrhea or constipation. For men, it may lead to erectile dysfunction.

Kidney damage from diabetes (diabetic nephropathy). The kidneys hold millions of tiny blood vessel clusters (glomeruli) that filter waste from the blood. Diabetes can damage this delicate filtering system.

Eye damage from diabetes (diabetic retinopathy). Diabetes can damage the blood vessels of the eye. This could lead to blindness.

Foot damage. Nerve damage in the feet or poor blood flow to the feet increases the risk of many foot complications.

Skin and mouth conditions. Diabetes may leave you more prone to skin problems, including bacterial and fungal infections.

Hearing impairment. Hearing problems are more common in people with diabetes. Alzheimer's disease. Type 2 diabetes may increase the risk of dementia, such as Alzheimer's disease.

Depression related to diabetes. Depression symptoms are common in people with type 1 and type 2 diabetes.

Types of Diabetes:

Type 1 Diabetes

Popularly known as auto-immune disease or juvenile diabetes, this condition is dependent on insulin and is an immune system disorder. According to the CDC, 5-10% of total diabetic patients have Type 1 diabetes.

In type 1 diabetes, the person's immune system attacks insulin-producing cells, thereby hindering the production of insulin, and therefore, you'll need to take insulin dosage regularly to live. It is a hereditary disorder that generally occurs at an early ageand is most probably observed in children and young adults.

Type 2 Diabetes :

This type is popularly known as insulin-resistant diabetes as the insulin is produced in the patient's body but either it isn't sufficient or doesn't work correctly. While Type 2 diabetes isn't as severe as Type 1, in this condition, your body doesn't make sufficient insulin or fails to use the insulin properly, and this becomes the reason for a spike in blood sugar levels.

According to the CDC, 90-95% of total diabetic patients have Type 2 diabetes. It generally develops with aging but nowadays, it is also observed in children, teens, and young adults.

Gestational Diabetes:

Gestational diabetes is a condition where insulin isn't used effectively in a woman when she's pregnant. It might disappear after childbirth but raises her child's risk of getting obese. It also increases the risk of Type 2 diabetes in the mother and baby in the later stages.

Prediabetics:

Prediabetics is a condition when the blood sugar levels are on the borderline, i.e., higher than the normal level but lower than the type 2 diabetic conditions. With precautions, prediabetes can be avoided completely.

How insulin works:

Insulin is a hormone that comes from a gland behind and below the stomach (pancreas).The pancreas releases insulin into the bloodstream. The insulin circulates, letting sugar enter the cells.

Insulin lowers the amount of sugar in the bloodstream. As the blood sugar level drops, so does the secretion of insulin from the pancreas.

The role of glucose:

Glucose a sugar is a source of energy for the cells that make up muscles and other tissues. Glucose comes from two major sources: food and the liver.

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Sugar is absorbed into the bloodstream, where it enters cells with the help of insulin.The liver stores and makes glucose. When glucose levels are low, such as when you haven't eaten in a while, the liver breaks down stored glycogen into glucose. This keeps your glucose level within a typical range.

Risk factors:

Risk factors for diabetes depend on the type of diabetes. Family history may play a part in all types. Environmental factors and geography can add to the risk of type 1 diabetes.Sometimes family members of people with type 1 diabetes are tested for the presence of diabetes immune system cells (autoantibodies). If you have these autoantibodies, you have an increased risk of developing type 1 diabetes. But not everyone who has these autoantibodies develops diabetes.

Race or ethnicity also may raise your risk of developing type 2 diabetes. Although it's unclear why, certain people including Black, Hispanic, American Indian and Asian American people are at higher risk.

Prediabetes: type2 diabetes and gestational diabetes are more common in people who are overweight or obese.

Complications of gestational diabetes

Most women who have gestational diabetes deliver healthy babies. However, untreated or uncontrolled blood sugar levels can cause problems for you and your baby.Complications in your baby can be caused by gestational diabetes, including:

Excess growth. Extra glucose can cross the placenta. Extra glucose triggers the baby's pancreas to make extra insulin. This can cause your baby to grow too large. It can lead to a difficult birth and sometimes the need for a C-section.

Low blood sugar. Sometimes babies of mothers with gestational diabetes develop low blood sugar (hypoglycemia) shortly after birth. This is because their own insulin production is high.

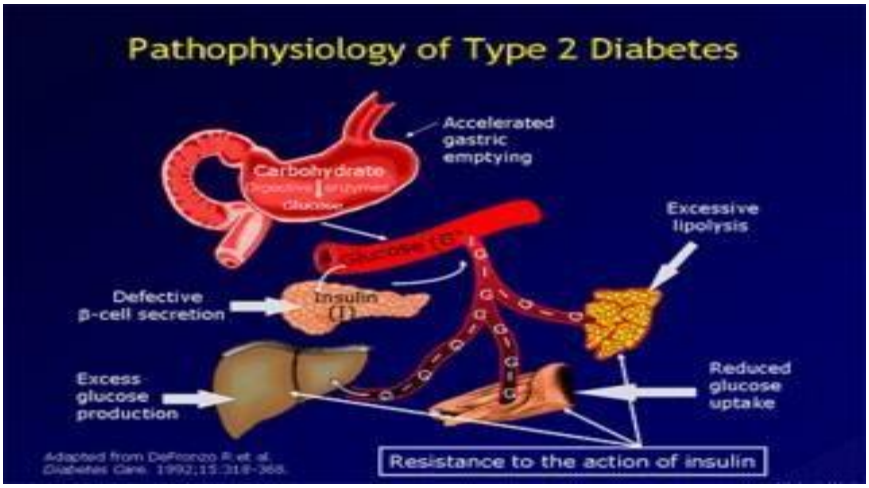
Type 2 diabetes later in life. Babies of mothers who have gestational diabetes have a higher risk of developing obesity and type 2 diabetes later in life.

Death. Untreated gestational diabetes can lead to a baby's death either before or shortly after birth.

Complications in the mother also can be caused by gestational diabetes, including:Preeclampsia. Symptoms of this condition include high blood pressure, too much protein in the urine, and swelling in the legs and feet.

Gestational diabetes. If you had gestational diabetes in one pregnancy, you're more likely to have it again with the next pregnancy

pathophysiology:



The pathophysiology of diabetes is complex and involves several different hormones (i.e., insulin, glucagons, and growth). The interaction of these hormones with the liver and their involvement in renal function make the pathological mechanisms of this disease difficult to pinpoint and widely varied among patients. More extensive reviews of this pathophysiology can be found on the American Diabetes Association Web site and in medical pathology texts.7Regardless of the cause of diabetes, the result is a decrease in the uptake of glucose. Insulin resistance is

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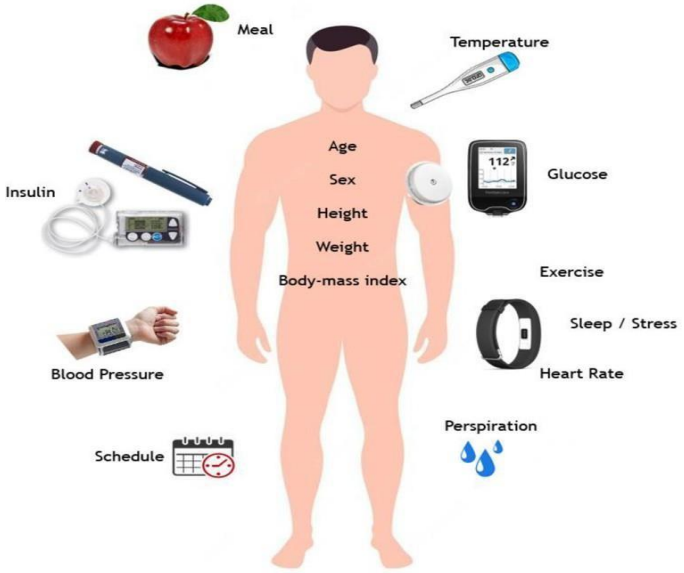
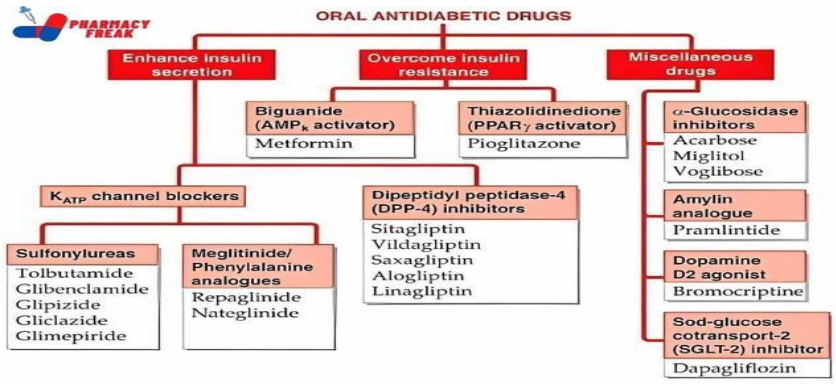
mediated by genetic predisposing factors and abdominal obesity. A strong relationship has been noted between the development of type 2 diabetes and obesity. Eighty percent of type 2 diabetic patients are obese, and excess fat is usually carried in upper body
areas. The therapist should recognize that medical interventions are directed at achieving normal or near-normal glucose levels and at optimizing lipid values. Interventions vary, depending on the degree of control required and the level of insulin resistance and/or
insufficiency noted. Resultant exercise interventions and expected outcomes vary just as widely. These variations are discussed in the "Interventions" and "Outcomes".
Equipment:
You can use a needle and syringe, an insulin pen, or an insulin pump. An artificial pancreas—also called an automated insulin delivery system—may be another option for some people



Antidiabetic Drug:
These include:
Sulfonylureas – glimepiride, glipizide, glyburide. Biguanides – metformin.
Thiazolidinediones (Tzd) – pioglitazone, Actos generic. Alpha-glucosidase inhibitors – Acarbose.
Meglitinides – nateglinide.
Combination of sulfonylureas plus metformin – known by generic names of the two drugs



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Side Effects

HYPOGLYCEMIA

The major side effect of sulfonylurea treatment is hypoglycemia, which is more likely to occur and is more severe with long- acting sulfonylureas . In the UKPDS severe hypoglycemia, defined by need for third-party assistance, occurred each year in 0.4–0.6/100 patients treated with a sulfonylurea while non-severe hypoglycemia was seen in 7.9/100 persons treated with a sulfonylurea. Other studies have found even higher rates of severe hypoglycemia with 20–40% of patients receiving sulfonylureas having hypoglycemia and severe hypoglycemia (requiring third- party assistance) occurring in 1–7% of patients (16,30). With continuous glucose monitoring 30% of well controlled patients with T2DM had episodes of hypoglycemia that were often asymptomatic and nocturnal Of great concern these hypoglycemic events were associated with EKG changes, particularly QTc prolongation . Other studies have also observed a very high rate of hypoglycemia in patients with T2DM treated with sulfonylureas when monitored using continuous glucose monitoring.
Hypoglycemia typically occurs after periods of fasting or exercise. In light of this hypoglycemic risk, initiation of treatment with sulfonylureas should be at the lowest recommended dose and the dose slowly increased in patients with modestly elevated A1c levels. Older patients (> age 65) and patients with hepatic or renal disease are more likely to experience frequent and severe hypoglycemic reactions, particularly if the goals of therapy aim for inappropriately tight glycemic control . Many clinicians avoid the use of long acting sulfonylureas (glyburide) in these high-risk patients as glyburide has a higher risk of hypoglycemia compared to other sulfonylureas .

WEIGHT GAIN

In the UKPDS, sulfonylurea treatment caused a net weight gain of approximately 3 kg, which occurred during the first 3-4 years of treatment and then stabilized . Other studies have similarly observed weight gain with sulfonylurea treatment .

FIRST GENERATION SIDE EFFECTS

Chlorpropamide can induce hyponatremia and water retention due to inappropriate secretion of antidiuretic hormone (ADH) . In addition, tolbutamide and chlorpropamide, in certain susceptible individuals, is associated with alcohol-induced flushing . Because of an increased risk of side effects 1st generation sulfonylureas are seldom used.

RARE SIDE EFFECTS

Intrahepatic cholestasis and allergic skin reactions, including photosensitivity and erythroderma may rarely occur (Package insert).

Contraindications and Drug Interactions

Sulfonylureas are best avoided in patients with a sulfa allergy who experienced prior severe allergic reactions (Package insert). Otherwise, cross-reactivity betweenantibacterial and nonantibacterial sulfonamide agents is rare.
In renal failure, the dose of the sulfonylurea agent will require adjustment based on glucose monitoring to avoid hypoglycemia . Because it is metabolized primarily in theliver without the formation of active metabolites, glipizide is the preferredsulfonylurea in patients with renal disease
In the elderly long acting sulfonylureas, such as glyburide, glimepiride and chlorpropamide are not recommended
Sulfonylureas can cause hemolytic anemia in patients with glucose 6-phosphate dehydrogenase (G6PD) deficiency and therefore should be used with caution in such patients (Package insert).
Certain drugs may enhance the glucose-lowering effects of sulfonylureas by inhibitionof their hepatic metabolism (antifungals and monoamine oxidase inhibitors),displacing them from binding to plasma proteins (coumarins, NSAIDs, andsulfonamides), or inhibiting their excretion

II. LITERATURE REVIEW

The RWE study suggests that vildagliptin, both as monotherapy and in combination with metformin, is an effective and well-tolerated therapy for reducing HbA1c and achieving target glycemic control in patients with T2DM.

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What is Vildagliptin?

Vildagliptin is a new oral anti-hyperglycemic (anti-diabetic) medication from the new dipeptidyl peptidase-4 (DPP-4) inhibitor class. The medication works by preventing DPP- 4 from inactivating glucagon-like peptide-1 (GLP-1) and gastric inhibitory polypeptide (GIP). This inhibitory activity leads to a two-fold action in the pancreas' islets of Langerhans, where GLP-1 and GIP potentiate insulin secretion by beta cells while suppressing glucagon secretion by alpha cells.

Vildagliptin Uses:

The medication is used for the treatment of Type 2 diabetes mellitus. This is used along with diet and exercise to improve blood sugar control in adults with Type 2 diabetes. The medication is a type of anti-diabetic drug. It works by causing the pancreas to release more insulin and decreasing the hormones that cause blood sugar levels to rise. Fasting and post- meal sugar levels are reduced as a result of this.

common and major side effects of Vildagliptin are:

Headache
Cough
Constipation
Sweating
Hypoglycaemia
Weakness
Excessive sweating
Heartburn
Swelling of face, lips and eyelids

The common side effects don't need any medical attention and will disappear as your body gets adjusted to the dosage. But if you are facing any kind of serious or rare side effects then immediately seek medical attention

Precautions

Before using Vildagliptin talk with your doctor if you are allergic to it or any other medications. The product can contain some inactive ingredients which will cause serious allergic reactions or other serious problems. If you are having any of the following medical histories then talk with your doctor immediately, such as skin allergy, Type I diabetes mellitus, Diabetic Ketoacidosis and Hepatic Impairments.

How to use Vildagliptin?:

Read the manufacturer's printed information carefully to know about the procedure. It will provide you with more detail about vildagliptin tablets as well as a complete listof the possible side effects that you can encounter as a result of taking them. Take vildagliptin exactly as directed by the doctor. The normal dosage is one 50 mg tablet taken twice a day, but depending on your other medications, you might only need one dose per day. Your doctor.

Missed Dose:

As soon as you remember, take the missing dose. If it's time for the next dose, skipthe missed dose. Do not take a double dose to compensate for a missed do

Overdose:

Overdose of this medication can lead to some serious side effects like irregularheartbeat, trouble while breathing, severe dizziness and fainting.

Warnings for serious Health Conditions:

Pregnancy:

Pregnant women should avoid taking this drug unless it is absolutely appropriate. Before taking this drug, talk to your doctor about all the complications and benefits. Depending on your health condition, your doctor can recommend a safer alternative.

Breastfeeding:

The medication can pass into the breast milk and can cause some serious side effectsto the infants. Avoid taking this medication without consulting your doctor while you are breastfeeding.

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Storage

Direct contact with heat, air and light may damage your medicines. Exposure to medicine may cause some harmful effects. The medicine must be kept in a safe place and out of children's reach. Mainly the drug should be kept at room temperature between 68ºF and 77ºF (20ºC and 25ºC).

PHARMACOLOGY

Indication

Vildagliptin is indicated in the treatment of type II diabetes mellitus in adults. As monotherapy, vildagliptin is indicated in adults inadequately controlled by diet and exercise alone and for whom metformin is inappropriate due to contraindications or intolerance.6 It is also indicated as dual therapy in combination with metformin, a sulphonylurea, or a thiazolidinedione in adults patients with insufficient glycemic control despite maximal tolerated dose of monotherapy.6

Vildagliptin is also marketed in a combination product with metformin for the treatment of adults with type II diabetes mellitus who inadequately respond to either monotherapy of vildagliptin or metformin. This fixed-dose formulation can be used in combination with a sulphonylurea or insulin (i.e., triple therapy) as an adjunct to diet and exercise in adults who do not achieve adequate glycemic control with monotherapy or dual therapy.

Pharmacodynamics:

Vildagliptin works to improve glycemic control in type II diabetes mellitus by enhancing the glucose sensitivity of beta-cells (β-cells) in pancreatic islets and promoting glucose- dependent insulin secretion. Increased GLP-1 levels leads to enhanced sensitivity of alpha cells to glucose, promoting glucagon secretion. Vildagliptin causes an increase in the insulin to glucagon ratio by increasing incretin hormone levels: this results in a decrease in fasting and postprandial hepatic glucose production. Vildagliptin does not affect gastric emptying. It also has no effects on insulin secretion or blood glucose levels in individuals with normal glycemic control.6

In clinical trials, treatment with vildagliptin 50-100 mg daily in patients with type 2 diabetes significantly improved markers of beta-cells, proinsulin to insulin ratio, and measures of beta-cell responsiveness from the frequently-sampled meal tolerance test. 6 Vildagliptin has improves glycated hemoglobin (HbA1c) and fasting plasma glucose(FPG) levels.2

Mechanism of action

Glucagon-like peptide-1 (GLP-1) and glucose-dependent insulinotropic peptide (GIP) are incretin hormones that regulate blood glucose levels and maintain glucose homeostasis. It is estimated that the activity of GLP-1 and GIP contribute more than 70% to the insulin response to an oral glucose challenge. They stimulate insulin secretion in a glucose- dependent manner via G-protein-coupled GIP and GLP-1 receptor signalling. In addition to their effects on insulin secretion, GLP-1 is also involved in promoting islet neogenesis and differentiation, as well as attenuatingpancreatic beta-cell apoptosis. Incretin hormones also exert extra-pancreatic effects, such as lipogenesis and myocardial function.3 In type II diabetes mellitus, GLP-1 secretion is impaired, and the insulinotropic effect of GIP is significantly diminished.2

Vildagliptin exerts its blood glucose-lowering effects by selectively inhibiting dipeptidyl peptidase-4 (DPP-4), an enzyme that rapidly truncates and inactivates GLP-1 and GIP upon their release from the intestinal cells. DPP-4 cleaves oligopeptides after the second amino acid from the N-terminal end. Inhibition of DPP-4 substantially prolongs the half-life of GLP-1 and GIP, increasing the levels of active circulating incretin hormones.3 The duration of DPP-4 inhibition by vildagliptin is dose-dependent.5 Vildagliptin reduces fasting and prandial glucose and HbA1c. It enhances the glucose sensitivity of alpha- and beta-cells and augments glucose-dependent insulin secretion. Fasting and postprandial glucose levels are decreased, and postprandial lipid and lipoprotein metabolism are also improved.

Here are some of the standard and significant side effects of using Vildagliptin:

Excessive sweating.

Headache.

Constipation.

Hypoglycaemia

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Heartburn.
Cough.
Swelling of eyelids, lips, and face.
Weakness.
Toxicity:
The oral Lowest published toxic dose (TDLO) is 0.3 mg/kg in rats and 1 mg/kg in mice. There is limited information regarding overdose with vildagliptin. In one study, patients experienced muscle pain, mild and transient paresthesia, fever, edema, and a transient increase in lipase levels at a dose of 400 mg.
Method Of Administration:
When used in dual combination with a sulphonylurea, the recommended dose of vildagliptin is 50 mg once daily administered in the morning. In this patient population, vildagliptin 100 mg daily was no more effective than vildagliptin 50 mg once daily.
uses:
Vildagliptin (LAF237) is an orally active antihyperglycemic agent that selectively inhibits the dipeptidyl peptidase-4 (DPP-4) enzyme. It is used to manage type II diabetes mellitus.

Material and Methods:
Study design,
This real-world, retrospective, multicentric, observational analysis was conducted at Manipal healthcare centers in Banner &Survey Based study at chikhali utilizing medical records of adultpatients with T2DM who had received treatment with VILDAGLIPTIN or
VILDAGLIPTIN-Metformin Data were collected retrospectively from the medical records of eligible patients, including demographic characteristics, duration of disease, co-morbidities, concomitant medications, and dosage patterns from selected Medical and hospitals.

Discussion:
At the Chikhali area, I conducted a survey at about fifty medical supply stores. When antidiabetic medications were surveyed, we discovered that the most often prescribed medication was Vildagliptin ,sitagliptin depagliflozin and Zita DM Among which Vildgliptin is widely prescribed because, when combined with metformine, it had increased Glycemic Control.
Apart from which we also visited manipal hospital to have a survey on most commonly prescribed Oral Hypoglycemic Drugs. We have discussed with endocrinologist That why metformin and Vildagliptin is widely prescribed in Hyperglycemia . The discussion comes with the end that metformin and Vildagliptinare synergistic and have high efficiency in low dose with very few side effectser efficacy and fewer side effects than other medications

III. CONCLUSION

The availability of a new class of agents in our therapeutic toolkit for the treatment of hyperglycemia in T2DM is of great importance to reduce the burden of diabetes. Inthe new group of inhibitors of DPP-4, vildagliptin proves to be a very efficacious drugfor improving glycemic control in a wide range of T2DM patients, ranging from the IGT population to patients with advanced disease on insulin. Its potential for lowering HbA1c is in the range of that of thiazolidinediones and acarbose in monotherapy, and sustained efficacy for up to 2 years has been demonstrated. The effect of improving postprandial glycemia provides a good alternative for the up till now limited therapeutic options of affecting postprandial glycemia excursion. In addition, also fasting glycemia is clearly affected by vildagliptin.www.ijrar.org 906 Conclusion:
Hyperglycemia, usually a consequence of insulin resistance and pancreatic beta cell failure. The term diabetes mellitus includes several different metabolic disorder. The type 1 diabetes mellitus occurs due to the destroyed the beta cell and thus it does not produces the sufficient amount of insulin to control the blood sugar level. Type 2 diabetes is occurs due to the insulin resistance ,life style such as excessive bodyweight and insufficient exercise

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.The main goal of diabetes management is ,as far as possible ,to restore carbohydrate metabolism to normal state .The treatment ofdiabetes is required insulin replacement therapy, which is given through injection or tablets. The most interesting combination in which to use vildagliptin is with metformin. Both treatment regimens were effective in terms of reduced HbA1c to achieve glycemic control.Furthermore, it is well tolerated without an increase in the risk of hypoglycemia or weight gain. Hence, this therapy has favorable outcomes for T2DM management in Indian clinical settings.Vildagliptin in combination with metformin also had good safety with low risk of hypoglycaemia and weight gain.

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