

Certificate of Analysis -COA

Product Name	: Diexomet – GV 2.2 (Metformin Hydrochloride(SR) Glimepiride and Voglibose Tablets)	A.R. No.	: QCFP/D/T/383A/22
Batch No.	: DT3832A	Mfg. Date	: 06/2022
Batch Size	: 50,000 Tablets	Exp. Date	: 05/2024
Sample Qty.	: 6 X10 Tablets	Date of Receive	: 19/07/2022
Mfg. Lic. No.	: MNB/06/483	Date of Release	: 21/07/2022

RESULT OF ANALYSIS

Sr. No.	Analysis	Specification	Observation
1.	Description	Orange coloured, Oval shaped, biconvex, film coated tablets plain on both sides.	Orange coloured, Oval shaped, biconvex, film coated tablets plain on both sides.
2.	Identification	Positive for Metformin Hydrochloride, Glimepiride & Voglibose (by Assay).	Complies
3.	Average Weight	635.0 mg \pm 5.0 % (603.3 mg to 666.8 mg)	643.1 mg
4.	Uniformity of Wt.	Avg. wt. \pm 5.0 %	- 1.21 % to + 2.95 %
5.	Thickness	6.8 mm \pm 0.2 mm	6.97 mm
6.	Dissolution		
	Metformin HCl Sustained-release (500 mg)	1 st Hour-25.0 % to 50.0 % 3 rd Hour-45.0 % to 75.0 % 10 th Hour-Not less than 80 %	40.3 % 70.8 % 92.5 %
	Glimepiride(2mg)	Not less than 75.0%	97.1 %
7.	Content uniformity Glimepiride(2mg)	NLT 85.0% & NMT 115.0%	94.1 %
	Voglibose (0.2 mg)	NLT 85.0% & NMT 115.0%	Avg: 98.5 %
8.	Assay: Each Film coated tablet contains:		
	Metformin Hydrochloride IP 500 mg (As Sustained-release)	450.0 mg to 550.0mg 90.0 % to 110.0 %	498.88 mg 99.8 %
	Glimepiride IP 2 mg	1.80 mg to 2.20 mg 90.0 % to 110.0 %	1.982 mg 99.1 %
	Voglibose IP 0.2 mg	0.1800 mg to 0.2200 mg 90.0 % to 110.0 %	0.1986 mg 99.3 %

Conclusion: In the opinion of the undersigned above product complies as per IP & IH Specification.

Product Mfg. By : Dagon Pharmaceuticals Pvt. Ltd.

Prepared By 
 Date: 21/07/22

Checked By 
 Date: 21/07/22

Approved By 
 Date: 21/07/22
 (Manager Quality Control)





BIOS LAB PVT. LTD.

8, MILAN COMPLEX, SARKHEJ, AHMEDABAD.

QUALITY CONTROL DEPARTMENT

CERTIFICATE OF ANALYSIS

See Rule 150 E (F) Under The Drugs & Cosmetics Act 1940 and The Rules there under

Report No. :	DT-20/3010	Mfg. Lic. No.:	MNB/06/483
Sample Name :	DIEXOMET™ - GV 2.2		
Generic Name :	Metformin Hydrochloride (SR), Glimepiride and Voglibose Tablets		
Product Name	DIEXOMET™ - GV 2.2	A.R.No.	QCFP/D/T/301/20
Batch No.	DT-3010	Batch Size	0.50 Lacs Tablets
Mfg. Date	JUL. 2020	Sample Qty.	60 Tablets
Exp. Date	JUN. 2022	Test as per	Manufacturer Specification
Date of Receipt	28-09-2020	Date of Release	29-09-2020

S NO.	TEST	SPECIFICATION	RESULT
1.	Description	Orange coloured, Oval Shaped, biconvex, film coated tablets plain on both sides	Orange coloured, Oval Shaped, biconvex, film coated tablets plain on both sides
2.	Identification	Positive for Metformin Hydrochloride, Glimepiride and Voglibose (by Assay)	Complies
3.	Average weight	635.0 mg \pm 5.0% (603.3 mg to 666.8 mg)	626.0 mg
4.	Uniformity of weight	Average weight \pm 5.0%	-1.61% to +2.17%
5.	Thickness	6.8 mm \pm 0.2 mm	6.85 mm
6.	Dissolution		
	Metformin HCl Sustained Release (500 mg)	1st hours - 25.0% to 50.0% 3rd hours - 45.0% to 75.0% 10th hours - Not less than 80.0%	41.30% 70.90% 94.90%
	Glimepiride (2 mg)	Not less than 75.0%	97.00%
7.	Content Uniformity		
	Glimepiride (2 mg)	NLT 85.0% & NMT 115.0%	101.80%
	Voglibose (0.2 mg)	NLT 85.0% & NMT 115.0%	Avg. 99.30%
8.	ASSAY	Each film coated tablet contains:	
	Metformin Hydrochloride IP 500 mg (As Sustained Release)	450.0 mg to 550.0 mg 90.0% to 110.0%	498.32 mg 99.70%
	Glimepiride IP 2 mg	1.80 mg to 2.20 mg 90.0% to 110.0%	1.978 mg 98.90%
	Voglibose IP 0.2 mg	0.1800 mg to 0.2200 mg 90.0% to 110.0%	0.1991 mg 99.60%

Conclusion: The above collected sample is complies as per IP & IH Specification.

* Manufactured by: DAGON PHARMACEUTICALS PVT. LTD. (SOLAN)

DIEXOMET™- GV 2.2

PRODUCT DESCRIPTION:

DIEXOMET™- GV 2.2 Tablets

Each uncoated bilayered tablet contains:

Metformin Hydrochloride IP..... 500 mg (As sustained release)

Glimepiride IP..... 2 mg

Voglibose IP..... 0.2 mg

Excipients q.s.

THERAPEUTIC OR PHARMACOLOGICAL CLASS: Antidiabetic

PHARMACEUTICAL FORM(S) : Bilayered Tablet (One layer sustained release)

PHARMACEUTICAL DESCRIPTION:

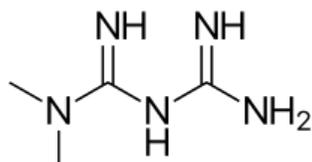
METFORMIN:

Generic name: Metformin HCl

Chemical name: N, N-Dimethyl imidodi carbonimidic diamide

Molecular mass: 129.16364 g/mol

Structural formula:



Empirical formula - C₄H₁₁N₅

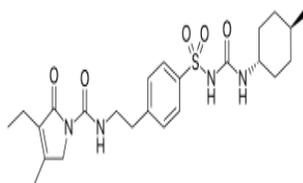
GLIMEPIRIDE:

Generic name: Glimepiride

Chemical name: 3-ethyl-4-methyl-2-oxo-N-(2-{4-[[{[(1r,4r)-4-methylcyclohexyl]-C-hydroxycarbonimidoyl}amino)sulfonyl]phenyl}ethyl)-2,5-dihydro-1H-pyrrole-1-carboximidic acid

Molecular mass: 490.617 g/mol

Structural formula:



Empirical formula - C₂₄H₃₄N₄O₅S

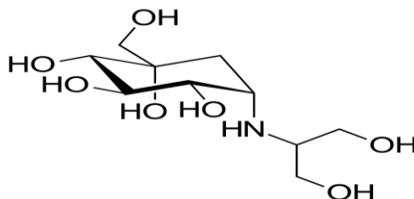
VOGLIBOSE:

Generic name: Voglibose

Chemical name: (1S,2S,3R,4S,5S)-5-[(1,3-dihydroxypropan-2-yl)amino]-1-(hydroxymethyl) cyclohexane-1,2,3,4-tetrol

Molecular mass: 267.28 g/mol

Structural formula:



Empirical formula - C₁₀H₂₁NO₇

PHARMACOLOGIC PROPERTIES: PHARMACODYNAMICS

Metformin

Metformin improves glucose tolerance in patients with type-2 diabetes (NIDDM), lowering both basal and postprandial plasma glucose. Metformin decreases hepatic glucose production, decreases intestinal absorption of glucose, and improves insulin sensitivity by increasing peripheral glucose uptake and utilization.

Glimepiride

Glimepiride is an orally active hypoglycaemic substance belonging to the sulfonylurea group. It may be used in non-insulin dependent diabetes mellitus. Glimepiride acts mainly by stimulating insulin release from pancreatic beta cells. As with other sulfonylureas this effect is based on an increase of responsiveness of the pancreatic beta cells to the physiological glucose stimulus. In addition, glimepiride seems to have pronounced extra pancreatic effects also postulated for other sulfonylureas.

Insulin release

Sulfonylureas regulate insulin secretion by closing the ATP-sensitive potassium channel in the beta cell membrane. Closing the potassium channel induces depolarization of the beta cell and results - by opening of calcium channels - in an increased influx of calcium into the cell. This leads to insulin release through exocytosis. Glimepiride binds with a high exchange rate to a beta cell membrane protein which is associated with the ATP-sensitive potassium channel but which is different from the usual sulfonylurea binding site.

Extrapancreatic activity

The extrapancreatic effects are for example an improvement of the sensitivity of the peripheral tissue for insulin and a decrease of the insulin uptake by the liver. The uptake of glucose from blood into peripheral muscle and fat tissues occurs via special transport proteins, located in the cells membrane. The transport of glucose in these tissues is the rate limiting step in the use of glucose. Glimepiride increases very rapidly the number of active glucose transport molecules in the plasma membranes of muscle and fat cells, resulting in stimulated glucose uptake.

Glimepiride increases the activity of the glycosyl-phosphatidylinositol-specific phospholipase C which may be correlated with the drug-induced lipogenesis and glycogenesis in isolated fat and muscle cells. Glimepiride inhibits the glucose production

in the liver by increasing the intracellular concentration of fructose-2, 6-bisphosphate, which in its turn inhibits the gluconeogenesis.

Voglibose

Voglibose is an alpha glucosidase inhibitor which inhibits the activity of alpha glucosidases that catalyse the decomposition of disaccharides into monosaccharides in the intestine, thereby delaying the digestion and absorption of carbohydrates, resulting in improvement of postprandial hyperglycaemia.

PHARMACOKINETICS

Absorption

Glimepiride

The bioavailability of glimepiride after oral administration is complete. Food intake has no relevant influence on absorption, only absorption rate is slightly diminished. Maximum serum concentrations (C_{max}) are reached approximately 2.5 hours after oral intake (mean $0.3\mu\text{g/ml}$ during multiple dosing of 4mg daily) and there is a linear relationship between dose and both C_{max} and AUC (area under the time/concentration curve).

Metformin HCl (SR)

The absolute bioavailability of a metformin 500-mg tablet given under fasting conditions is approximately 50-60%. Studies using single oral doses of metformin 500 mg to 1500 mg, and 850 mg to 2550 mg, indicate that there is a lack of dose proportionality with increasing doses, which is due to decreased absorption rather than an alteration in elimination. Food decreases the extent of and slightly delays the absorption of metformin, as shown by approximately a 40% lower mean peak plasma concentration (C_{max}), a 25% lower area under the plasma concentration versus time curve (AUC), and a 35 minute prolongation of time to peak plasma concentration (T_{max}) following administration of a single 850-mg tablet of metformin with food, compared to the same tablet strength administered fasting. The clinical relevance of these decreases is unknown.

Voglibose

Voglibose is poorly absorbed after oral doses. Plasma concentrations after oral doses have usually been undetectable. After an 80 mg dose (substantially higher than recommended dose), peak plasma levels of about 20 ng/mL were observed in 1-1.5 hours.

Distribution

Metformin HCl (SR)

The apparent volume of distribution (V/F) of metformin following single oral doses of metformin immediate-release 850 mg averaged 654 ± 358 L. Metformin is negligibly bound to plasma proteins, in contrast to sulphonylureas, which are more than 90% protein bound. Metformin partitions into erythrocytes, most likely as a function of time. At usual clinical doses and dosing schedules of metformin immediate-release, steady state plasma concentrations of metformin are reached within 24-48 hours and are generally $<1\mu\text{g/mL}$. During controlled clinical trials of immediate-release

metformin, maximum metformin plasma levels did not exceed 5 µg/mL, even at maximum doses.

Glimepiride

Glimepiride has a very low distribution volume (approx. 8.8 liters) which is roughly equal to the albumin distribution space, high protein binding (>99%), and a low clearance (approximately 48 ml/min). In animals, glimepiride is excreted in milk. Glimepiride is transferred to the placenta. Passage of the blood brain barrier is low.

Voglibose: Data Not Available

Metabolism and Elimination

Metformin Hydrochloride

Intravenous single-dose studies in normal subjects demonstrate that metformin is excreted unchanged in the urine and does not undergo hepatic metabolism (no metabolites have been identified in humans) nor biliary excretion. Renal clearance of metformin is approximately 3.5 times greater than creatinine clearance, which indicates that tubular secretion is the major route of metformin elimination. Following oral administration, approximately 90% of the absorbed drug is eliminated via the renal route within the first 24 hours, with a plasma elimination half-life of approximately 6.2 hours. In blood, the elimination half-life is approximately 17.6 hours, suggesting that the erythrocyte mass may be a compartment of distribution.

Glimepiride

Mean dominant serum half-life, which is of relevance for the serum concentrations under multiple-dose conditions, is about 5 to 8 hours. After high doses, slightly longer half-lives were noted. After a single dose of radio labeled glimepiride, 58% of the radioactivity was recovered in the urine, and 35% in the faeces. No unchanged substance was detected in the urine. Two metabolites - most probably resulting from hepatic metabolism (major enzyme is CYP2C9) - were identified both in urine and faeces: the hydroxy derivative and the carboxy derivative. After oral administration of glimepiride, the terminal half-lives of these metabolites were 3 to 6 and 5 to 6 hours respectively. Comparison of single and multiple once-daily dosing revealed no significant differences in pharmacokinetics, and the intra-individual variability was very low. There was no relevant accumulation.

Voglibose

Voglibose is metabolized negligibly and rapidly excreted. When voglibose tablets were repeatedly administered to healthy male adults in a single dose of 0.2 mg, three times a day, for 7 consecutive days, voglibose was not detected in plasma or urine. Also, on administration of voglibose to 10 healthy male subjects in a single dose of 2 mg, voglibose was not detected in plasma or urine.

INDICATIONS

DIEXOMET™- GV tablets are indicated for:

Type 2 diabetes mellitus

- As third line treatment of Type II diabetes mellitus in adult patients when diet,

exercise and the single agents and second line therapy with two drugs do not result in adequate glycemic control.

CONTRAINDICATIONS:

For Metformin:

- Hypersensitivity to metformin or any of the excipients.
- Any type of acute metabolic acidosis (such as lactic acidosis, diabetic ketoacidosis, diabetic pre-coma).
- Severe renal failure (GFR<30ml/min)
- Acute conditions with the potential to alter renal function such as:
 - Dehydration
 - Severe infection
 - Shock
- Intravascular administration of iodinated contrast agents (see Precautions)
- Acute or chronic disease which may cause tissue hypoxia such as:
 - Cardiac or respiratory failure
 - Recent myocardial infarction
 - Shock
- Hepatic insufficiency.
- Acute alcohol intoxication, alcoholism.
- Lactation.

For Glimepiride:

- In patients hypersensitive to glimepiride, other sulfonylureas, other sulfonamides, or any of the excipients
- In pregnant women.
- In breast-feeding women.

No experience has been gained concerning the use of glimepiride in patients with severe impairment of liver function and in dialysis patients. In patients with severe impairment of hepatic function, change-over to insulin is indicated, not least to achieve optimal metabolic control.

For Voglibose:

- History of hypersensitivity to voglibose or to any other ingredient of this product.
- Patients with severe ketosis or in a state of diabetic coma or pre-coma.
- Severe infections, before or after operation or with severe trauma.
- Gastrointestinal obstruction or predisposed to it.

WARNINGS:

For Metformin:

Lactic acidosis

Metformin accumulation occurs at acute worsening of renal function and increases the risk of lactic acidosis.

In case of dehydration (severe diarrhoea or vomiting, fever or reduced fluid intake), metformin should be temporarily discontinued and contact with a health care professional is recommended.

Medicinal products that can acutely impair renal function (such as antihypertensives, diuretics and NSAIDs) should be initiated with caution in metformin-treated patients. Other risk factors associated to lactic acidosis are excessive alcohol intake; hepatic insufficiency, inadequately controlled diabetes, ketosis, prolonged fasting and any conditions associated with hypoxia as well as concomitant use of medicinal products that may cause lactic acidosis (see Section Contraindications and section Interaction)

Diagnosis:

Patients and/or care-givers should be informed of the risk of lactic acidosis. In case of suspected symptoms, the patient should stop taking metformin and seek immediate medical attention. Diagnostic laboratory findings are decreased blood pH (<7.35), plasma lactate levels (>5 mmol/L), and an increased anion gap and lactate/pyruvate ratio.

Renal function:

GFR should be assessed before treatment initiation and regularly thereafter (see Section Dosage and Administration)

Metformin is contraindicated in patients with GFR<30 ml/min and should be temporarily discontinued in the presence of conditions that alter renal function, (see Section Contraindications)

Decreased renal function in elderly subjects is frequent and asymptomatic. Special caution should be exercised in situations where renal function may become impaired, for example when initiating antihypertensive therapy or diuretic therapy and when starting therapy with an NSAID.

Administration of iodinated contrast agent:

Intravascular administration of iodinated contrast agents may lead to contrast induced nephropathy, resulting in metformin accumulation and an increased risk of lactic acidosis. Metformin should be discontinued prior to, or at the time of the imaging procedure and not restarted until 48 hours after, provided that renal function has been re-evaluated and found to be stable (see Section Dosage and Administration and Section Interactions).

Surgery:

Metformin must be discontinued at the time of surgery under general, spinal or epidural anaesthesia. Therapy may be restarted no earlier than 48 hours following surgery or resumption of oral nutrition and provided that renal function has been re-evaluated and found to be stable

For Glimepiride:

In exceptional stress situations (e.g. trauma, surgery, febrile infections) blood glucose regulation may deteriorate, and a temporary change to insulin may be necessary to maintain good metabolic control.

PRECAUTIONS:

DIEXOMET™- GV should be administered carefully in patients who are receiving other antidiabetic drugs because hypoglycemia may occur.

For Metformin:

Regular monitoring of thyroid-stimulating hormone (TSH) levels is recommended in patients with hypothyroidism (see Adverse Reactions)

Long-term treatment with metformin has been associated with a decrease in vitamin B12 serum levels which may cause peripheral neuropathy. Monitoring of the vitamin B12 level is recommended (see Adverse Reactions).

Other Precautions:

- All patients should continue their diet with a regular distribution of carbohydrate intake during the day. Overweight patients should continue their energy-restricted diet.
- The usual laboratory tests for diabetes monitoring should be performed regularly.
- Metformin alone never causes hypoglycaemia, although caution is advised when it is used in combination with insulin or sulfonylureas.

For Glimepiride:

In the initial weeks of treatment, the risk of hypoglycaemia may be increased and necessitates especially careful monitoring. Factors favouring hypoglycaemia include:

- Unwillingness or (more commonly in older patients) incapacity of the patient to cooperate.
- Undernourishment, irregular mealtimes or skipped meals.
- Imbalance between physical exertion and carbohydrate intake.
- Alterations of diet.
- Consumption of alcohol, especially in combination with skipped meals.
- Impaired renal function.
- Severe impairment of liver function.
- Overdosage with glimepiride.
- Certain uncompensated disorders of the endocrine system affecting carbohydrate metabolism or counter-regulation of hypoglycaemia (as for example in certain disorders of thyroid function and in anterior pituitary or corticoadrenal insufficiency).
- Concurrent administration of certain other medicines (see Interactions).
- Treatment with glimepiride in the absence of any indication.

If such risk factors for hypoglycaemia are present, it may be necessary to adjust the dosage of glimepiride or the entire therapy. This also applies whenever illness occurs during therapy or the patient's life-style changes. Those symptoms of hypoglycaemia which reflect the body's adrenergic counter regulation (see Adverse Reactions) may be milder or absent where hypoglycaemia develops gradually, in the elderly, and where there is autonomic neuropathy or where the patient is receiving concurrent treatment with beta-blockers, clonidine, reserpine, guanethidine or other sympatholytic drugs.

Hypoglycaemia can almost always be promptly controlled by immediate intake of carbohydrates (glucose or sugar).

It is known from other sulfonylureas that, despite initially successful countermeasures, hypoglycaemia may recur. Patients must, therefore, remain under close observation.

Severe hypoglycaemia further requires immediate treatment and follow-up by a physician and, in some circumstances, in-patient hospital care.

Treatment of patients with G6PD-deficiency with sulfonylurea agents can lead to hemolytic anaemia. Since glimepiride belongs to the class of sulfonylurea agents, caution should be used in patients with G6PD-deficiency and a non-sulfonylurea alternative should be considered.

For Voglibose:

Voglibose tablets should be administered with caution to the following patients: patients with history of laparotomy or ileus; patients with chronic intestinal disease accompanied by disturbance in digestion and absorption; patients with aggravating symptoms due to increased generation of intestinal gas (E.g., Roemheld syndrome, severe hernia, and stenosis and ulcer of the large intestine) and patients with serious hepatic or renal disorders.

Other precautions

- All patients should continue their dietary restriction with a regular distribution of carbohydrate intake during the day. Overweight patients should continue their energy restricted diet.
- The usual laboratory tests for diabetes monitoring should be performed regularly.
- Patients should be instructed and explained to recognize hypoglycemic symptoms and its management.
- When patients with diabetes are exposed to unusual stress such as fever, trauma, infection, or surgery, a temporary loss of control of blood glucose may occur. At such times insulin therapy may be necessary for some time.

INTERACTIONS:

For Metformin:

Concomitant use not recommended:

Alcohol: Alcohol intoxication, particularly in case of fasting, malnutrition or hepatic insufficiency. Avoid consumption of alcohol and alcohol-containing medications.

Iodinated contrast agents

Metformin must be discontinued prior to, or at the time of the imaging procedure and restarted until at least 48 hours after, provided that renal function has been re-evaluated and found to be stable (See Dosage and Administration and Warnings).

Combinations requiring precautions for use:

Some medicinal products can adversely affect renal function which may increase the risk of lactic acidosis, e.g. NSAIDs, including selective cyclo-oxygenase (COX) II inhibitors, ACE inhibitors, angiotensin II receptor antagonists and diuretics, especially loop diuretics. When starting or using such products in combination with metformin, close monitoring of renal function is necessary.

Glucocorticoids (systemic and local routes), beta-2-agonists and diuretics have intrinsic hyperglycaemic activity. Inform the patient and perform more frequent blood glucose monitoring, especially at the beginning of treatment. If necessary, adjust the dosage of the antidiabetic drug during therapy with the other drug and upon its

discontinuation. ACE-inhibitors may decrease the blood glucose levels. If necessary, adjust the dosage of the antidiabetic drug during therapy with the other drug and upon its discontinuation.

Metformin may decrease the anticoagulant effect of phenprocoumon. Therefore, a close monitoring of the INR is recommended.

Levothyroxine can reduce the hypoglycemic effect of metformin. Monitoring of blood glucose levels is recommended, especially when thyroid hormone therapy is initiated or stopped, and the dosage of metformin must be adjusted if necessary.

Organic Cation Transporters (OCT)

Metformin is a substrate of both transporters OCT1 and OCT2. Co-administration of metformin with

- Inhibitors of OCT1 (such as verapamil) may reduce efficacy of metformin.
- Inducers of OCT1 (such as rifampicin) may increase gastrointestinal absorption and efficacy of metformin.
- Inhibitors of OCT2 (such as cimetidine, dolutegravir, ranolazine, trimethoprim, vandetanib, isavuconazole) may decrease the renal elimination of metformin and thus lead to an increase in metformin plasma concentration.
- Inhibitors of both OCT1 and OCT2 (such as crizotinib, olaparib) may alter efficacy and renal elimination of metformin.

Caution is therefore advised, especially in patients with renal impairment, when these drugs are co-administered with metformin, as metformin plasma concentration may increase. If needed, dose adjustment of metformin may be considered as OCT inhibitors/inducers may alter the efficacy of metformin

For Glimepiride:

Based on experience with glimepiride and on what is known of other sulfonylureas, the following interactions must be considered:

Glimepiride is metabolized by cytochrome P450 2C9 (CYP2C9). This should be taken into account when glimepiride is co-administered with inducers (e.g. rifampicin) or inhibitors (e.g. fluconazole) of CYP2C9.

Potential of the blood-glucose-lowering effect and, thus, in some instances hypoglycaemia may occur when one of the following drugs is taken, for example: insulin and other oral antidiabetics; ACE inhibitors; anabolic steroids and male sex hormones; chloramphenicol; coumarin derivatives; cyclophosphamide; disopyramide; fenfluramine; fenyramidol; fibrates; fluoxetine; guanethidine; ifosfamide; MAO inhibitors; miconazole; fluconazole; para-amino salicylic acid; pentoxifylline (high dose parenteral); phenylbutazone; azapropazone; oxyphenbutazone; probenecid; quinolones; salicylates; sulfinpyrazone; clarithromycin; sulfonamide antibiotics; tetracyclines; tritoqualine; trofosfamide.

Weakening of the blood-glucose-lowering effect and, thus raised blood glucose levels may occur when one of the following drugs is taken, for example: acetazolamide; barbiturates; corticosteroids; diazoxide; diuretics; epinephrine (adrenaline) and other sympathomimetic agents; glucagon; laxatives (after protracted use); nicotinic acid (in high doses); oestrogens and progestogens; phenothiazines; phenytoin; rifampicin; thyroid hormones.

H2 receptor antagonists, beta-blockers, clonidine and reserpine may lead to either potentiation or weakening of the blood glucose-lowering effect.

Under the influence of sympatholytic drugs such as beta-blockers, clonidine, guanethidine and reserpine, the signs of adrenergic counter-regulation to hypoglycaemia may be reduced or absent. Both acute and chronic alcohol intake may potentiate or weaken the blood glucose-lowering action of glimepiride in an unpredictable fashion. The effect of coumarin derivatives may be potentiated or weakened.

Bile acid sequestrant: Colesevelam binds to glimepiride and reduces glimepiride absorption from the gastro-intestinal tract. No interaction was observed when glimepiride was taken at least 4 hours before colesevelam. Therefore glimepiride should be administered at least 4 hours prior to colesevelam.

For Voglibose

When voglibose is used in combination with derivative(s) of sulfonamide, sulfonurea or biguanide, or with insulin, hypoglycemic symptoms may occur. Therefore, when used in combination with any of these drugs, care should be taken, such as starting the administration at a low dose.

When voglibose is administered concomitantly with drugs that enhance or diminish the hypoglycemic action of antidiabetic drugs, caution should be taken as this might additionally delay the action of voglibose on the absorption of carbohydrates. Examples of drugs enhancing the hypoglycemic action of antidiabetic drugs: alpha blockers, salicylic acid preparations, monoamine oxidase inhibitors and fibrate derivatives. Examples of drugs diminishing the hypoglycemic action of antidiabetic drugs: epinephrine, adrenocortical hormone, and thyroid hormone.

Voglibose does not affect the pharmacokinetics of warfarin; hence it can be safely administered along with warfarin.

PREGNANCY:

DIEXOMET™- GV must not be taken during pregnancy. Otherwise there is risk of harm to the. The patient must change over to insulin during pregnancy.

LACTATION:

To prevent possible ingestion with the breast milk and possible harm to the child, DIEXOMET™- GV must not be taken by breast-feeding women. If necessary the patient must change over to insulin, or must stop breast-feeding.

DRIVING A VEHICLE OR PERFORMING OTHER HAZARDOUS TASKS

Alertness and reactions may be impaired due to hypo- or hyperglycemia, especially when beginning or after altering treatment or when DIEXOMET™- GV is not taken regularly. This may, for example, affect the ability to drive or to operate machinery.

ADVERSE EFFECTS:

DIEXOMET™- GV should be administered carefully in patients who are receiving other antidiabetic drugs because hypoglycemia may occur.

The following CIOMS frequency rating is used, when applicable:

Very common $\geq 10\%$; Common ≥ 1 and $< 10\%$; Uncommon ≥ 0.1 and $< 1\%$;
Rare ≥ 0.01 and $< 0.1\%$; Very rare $< 0.01\%$,
Unknown (cannot be estimated from available data).

For Metformin:

Gastrointestinal symptoms such as nausea, vomiting, diarrhoea, abdominal pain and loss of appetite ($>10\%$) are very common: these occur most frequently during initiation of therapy and resolve spontaneously in most cases. To prevent these gastrointestinal symptoms, it is recommended that metformin be taken in 2 or 3 daily doses during or after meals. A slow increase of the dose may also improve gastrointestinal tolerability.

- Metallic taste (3%) is common.
- Mild erythema has been reported in some hypersensitive individuals. The incidence of such effects is regarded as very rare ($< 0.01\%$).
- A decrease of vitamin B12 absorption with decrease of serum levels has been observed in patients treated long-term with metformin and appears generally to be without clinical significance ($< 0.01\%$).

However, cases of peripheral neuropathy in patients with vitamin B12 deficiency have been reported in post-marketing experience (frequency not known) (see Precautions)

- Lactic acidosis (0.03 cases/1000 patient-years) is very rare (see Warnings).
- Hemolytic anemia (frequency unknown)
- Reduction of thyrotropin level in patients with hypothyroidism (see Precautions) (frequency unknown)
- Hypomagnesemia in the context of diarrhea (frequency unknown)
- Encephalopathy (frequency unknown)
- Photosensitivity (frequency unknown)
- Hepatobiliary disorders: Reports of liver function tests abnormalities and hepatitis resolving upon metformin discontinuation

For Glimepiride:

- *Metabolism and nutrition disorders*

As a result of the blood-glucose-lowering action of glimepiride, hypoglycaemia may occur, which may also be prolonged.

Possible symptoms of hypoglycaemia include headache, ravenous hunger, nausea, vomiting, lassitude, sleepiness, disordered sleep, restlessness, aggressiveness, impaired concentration, impaired alertness and reactions, depression, confusion, speech disorders, aphasia, visual disorders, tremor, pareses, sensory disturbances, dizziness, helplessness, loss of self-control, delirium, cerebral convulsions, somnolence and loss of consciousness up to and including coma, shallow respiration and bradycardia.

In addition, signs of adrenergic counter-regulation may be present such as sweating, clammy skin, anxiety, tachycardia, hypertension, palpitations, angina pectoris, and cardiac arrhythmias.

The clinical picture of a severe hypoglycaemic attack may resemble that of a stroke.

The symptoms nearly always subside when hypoglycaemia is corrected.

- *Eye disorders*

As a result of the blood-glucose-lowering action of glimepiride, hypoglycaemia may occur, which may also be prolonged.

Especially at the start of treatment, there may be temporary visual impairment due to the change in blood glucose levels. The cause is a temporary alteration in the turgidity and hence the refractive index of the lens, this being dependent on blood glucose level.

- *Gastrointestinal disorders*

Occasionally, gastrointestinal symptoms such as nausea, vomiting, sensations of pressure or fullness in the epigastrium, abdominal pain and diarrhoea may occur.

In isolated cases, there may be hepatitis, elevation of liver enzyme levels and/or cholestasis and jaundice, which may progress to life-threatening liver failure but can regress after withdrawal of glimepiride.

- *Dysgeusia (frequency not known)*

- *Blood and lymphatic system disorders*

Changes in the blood picture may occur: Rarely, thrombocytopenia and, in isolated cases, leucopenia, haemolytic anaemia, erythrocytopenia, granulocytopenia, agranulocytosis or pancytopenia may develop. Cases of severe thrombocytopenia with platelet count less than 10,000/ μ l and thrombocytopenic purpura have been reported in post-marketing experience (frequency not known).

- *Skin and subcutaneous tissue disorders - Alopecia (frequency not known)*

- *General disorders*

Occasionally, allergic or pseudo allergic reactions may occur, e.g. in the form of itching, urticaria or rashes. Such mild reactions may develop into serious reactions with dyspnoea and a fall in blood pressure, sometimes progressing to shock. In the event of urticaria a physician must therefore be notified immediately.

In isolated cases, a decrease in serum sodium concentration and allergic vasculitis or hypersensitivity of the skin to light may occur.

- *Investigations*

Glimepiride, like all sulfonylureas, can cause weight gain (frequency not known).

For Voglibose:

Gastrointestinal adverse effects such as diarrhoea, loose stools, abdominal pain, constipation, anorexia, nausea, vomiting, or heartburn may occur with the use of Voglibose.

Also abdominal distention, increased flatus, and intestinal obstruction like symptoms due to an increase in intestinal gas, may occur with use of Voglibose.

When Voglibose is administered to patients with serious liver cirrhosis, hyperammonia may worsen with the development of constipation followed by disturbance of consciousness.

Elevation of GOT (glutamate oxaloacetate), GPT (glutamatepyruvate transaminase), LDH (lactate dehydrogenase), alpha GPT (alpha glutamate pyruvate) or alkaline phosphatase may infrequently occur.

When Voglibose is used in combination with other antidiabetic drugs, hypoglycemia may occur (0.1% to <5%).

Hypersensitivity: Rash and pruritus may rarely occur. In such a case, Voglibose tablets should be discontinued.

Psychoneurologic: Headache may rarely occur.

Hematologic: Anemia; thrombocytopenia, and leucopenia may rarely occur.

Others: Numbness, edema of face, blurred vision, hot flushes, malaise, weakness, hyperkalemia, increased serum amylase, decreased HDL cholesterol, diaphoresis or alopecia, and perspiration.

DOSAGE AND ADMINISTRATION:

General

The usual recommended dose for adults is one tablet of DIEXOMET™- GV twice a day before meals. Additionally, voglibose tablets may be taken before the remaining meal, as prescribed by the physician. DIEXOMET™- GV must be swallowed whole and not crushed or chewed.

Children: Data insufficient to recommend pediatric use of DIEXOMET™- GV.

SPECIAL POPULATIONS:

Children

Data are insufficient to recommend pediatric use of DIEXOMET™- GV.

Renal impairment

A GFR should be assessed before initiation of treatment with metformin containing products and at least annually thereafter. In patients at increased risk of further progression of renal impairment and in the elderly, renal function should be assessed more frequently, e.g. every 3-6 months.

The maximum daily dose of metformin should preferably be divided into 2-3 daily doses. Factors that may increase the risk of lactic acidosis (see Section Warnings) should be reviewed before considering initiation of metformin in patients with GFR<60 mL/min.

If no adequate strength of DIEXOMET™- GV is available, individual monocomponents should be used instead of the fixed dose combination.

GFR ml/min	Metformin	Glimepiride
60-89	Maximum daily dose is 3000 mg Dose reduction may be considered in relation to declining renal function.	The highest recommended dose per day should be 8 mg of glimepiride
45-59	Maximum daily dose is 2000 mg The starting dose is at most half of the maximum dose.	

30-44	Maximum daily dose is 1000 mg. The starting dose is at most half of the maximum dose.	
<30	Metformin is contraindicated	Change-over to insulin is indicated, not least to achieve optimal metabolic control

ADMINISTRATION:

Due to sustained release formulation, DIEXOMET™- GV must be swallowed whole and not crushed or chewed.

OVERDOSAGE:

For Metformin:

Hypoglycaemia has not been seen with metformin doses of up to 85 g, although lactic acidosis has occurred in such circumstances. High overdose or concomitant risks of metformin may lead to lactic acidosis. Lactic acidosis is a medical emergency and must be treated in hospital. The most effective method to remove lactate and metformin is haemodialysis.

Pancreatitis may occur in the context of a metformin overdose

For Glimpiride:

Signs and Symptoms:

Acute overdosage as well as long-term treatment with too high a dose of glimepiride may lead to severe life-threatening hypoglycaemia.

Management:

As soon as an overdose of glimepiride has been discovered, a physician must be notified without delay. The patient must immediately take sugar, if possible in the form of glucose, unless a physician has already undertaken responsibility for treating the overdose.

Careful monitoring is essential until the physician is confident that the patient is out of danger. It must be remembered that hypoglycaemia may recur after initial recovery.

Admission to hospital may sometimes be necessary - even as a precautionary measure.

In particular, significant overdoses and severe reactions with signs such as loss of consciousness or other serious neurological disorders are medical emergencies and require immediate treatment and admission to hospital.

If, for example, the patient is unconscious, an intravenous injection of concentrated glucose solution is indicated (for adults starting with 40 ml of 20% solution, for example). Alternatively in adults, administration of glucagon, e.g. in doses of 0.5 to 1 mg i.v., s.c. or i.m. may be considered.

In particular when treating hypoglycaemia due to accidental intake of glimepiride in infants and young children, the dose of glucose given must be very carefully adjusted in view of the possibility of producing dangerous hyperglycaemia, and must be controlled by close monitoring of blood glucose.

Patients who have ingested life-threatening amounts of glimepiride require detoxification (e.g. by gastric lavage and medicinal charcoal).

After acute glucose replacement has been completed it is usually necessary to give an intravenous glucose infusion in lower concentration so as to ensure that the hypoglycaemia does not recur. The patient's blood glucose level should be carefully monitored for at least 24 hours. In severe cases with a protracted course, hypoglycaemia, or the danger of slipping back into hypoglycaemia, may persist for several days.

For Voglibose:

Voglibose competitively and reversibly inhibits the alpha glucosidase enzymes (glucoamylase, sucrase, maltase and isomaltase) in the brush border in the small intestine, which delays the hydrolysis of complex carbohydrates. It is unlikely to produce hypoglycemia in overdose, but abdominal discomfort and diarrhea may occur.

STORAGE CONDITION: Store protected from moisture at a temperature not exceeding 25°C
Keep out of reach of children.

PRESENTATION: Metformin Hydrochloride IP 500mg SR + Glimepiride IP 2mg + Voglibose IP 0.2mg Tablets

PACKING: 1*10 TAB

For the use only of a Registered Medical Practitioner or Hospital or a Laboratory



BIOS LAB PVT. LTD.

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