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**DIBETA Gb**

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**1. Generic Name:**

Glibenclamide and Metformin Tablets I.P.

**2. Qualitative and quantitative composition:**

Each uncoated tablet contains:

Glibenclamide I.P..... 5 mg

Metformin Hydrochloride I.P....500 mg

Color: Tartrazine Lake

The excipients used are Starch, Microcrystalline Cellulose, Colour Tartrazine, Isopropyl Alcohol, Methylene Chloride, Polyvinyl Pyrrolidone, Colloidal Silicon Dioxide, Magnesium Stearate, Talcum and Sodium Starch Glycolate.

**3. Dosage form and strength:**

**Dosage form:** Uncoated tablet

**Strength:** Glibenclamide and Metformin: 5 mg and 500 mg

**4. Clinical particulars:**

**4.1 Therapeutic indication:**

It is indicated for treatment of Non-insulin dependent diabetes mellitus patients poorly controlled with sulphonyl urea or biguanide alone.

**4.2 Posology and method of administration:**

DIBETA Gb is recommended to be administered to type 2 diabetes patients whose blood glucose (as indicated by HbA1c and fasting plasma glucose level) is controlled with 5 mg Glibenclamide / 500 mg metformin given twice daily as individual agents.

The recommended dose is one tablet of DIBETA Gb twice daily with the morning and evening meals. The daily dose should be titrated in increments of no more than 5 mg Glibenclamide / 500 mg metformin up to the minimum effective dose to achieve adequate blood glucose control. The dose should not exceed the maximum recommended daily dose of 20 mg Glibenclamide / 2000 mg metformin.

Paediatric use: Safety and effectiveness is not established.

Elderly: The initial and maintenance dose in patients with advanced age should be selected with caution because of potential of decreased renal function in this population. Titration to the maximum dosage should usually be avoided.

**4.3 Contraindications:**

- Hypersensitivity to Glibenclamide and Metformin or to any of the excipients
- Patients known to have sensitivity to other sulphonylureas and related drugs
- Juvenile onset diabetes
- Diabetic ketoacidosis, diabetic pre-coma and diabetic coma.
- Severe infection, stress, trauma, surgical procedures or other severe conditions where the drug is unlikely to control the hyperglycaemia
- Severe impairment of renal function

- Moderate (stage 3b) and severe renal failure or renal dysfunction (CrCl < 45 ml/min or eGFR < 45 ml/min/1.73m<sup>2</sup>)
- Acute conditions with the potential to alter renal function such as: dehydration, severe infection, shock
- Hepatic impairment
- Hepatic insufficiency, acute alcohol intoxication, alcoholism
- Disease which may cause tissue hypoxia (especially acute disease, or worsening of chronic disease) such as: decompensated heart failure, respiratory failure, recent myocardial infarction, shock
- Porphyria
- Pregnancy
- Elderly (> 70 years).

#### **4.4 Special warnings and precautions for use:**

Hypoglycaemia: all sulphonylurea drugs are capable of producing moderate or severe hypoglycaemia, particularly in the following conditions:

- In patients controlled by diet alone.
- In cases of overdose.
- When calorie or glucose intake is insufficient
- In patients with irregular mealtimes and/or missed meals
- During excessive exercise
- In debilitated patients
- In patients with mild to moderate renal impairment. However, in long-term clinical trials patients with renal insufficiency have been treated satisfactorily using Glibenclamide at reduced doses with careful patient monitoring.
- In patients with adrenal or pituitary insufficiency
- In order to reduce the risk of hypoglycaemia it is therefore recommended:
- To initiate treatment for non-insulin dependent diabetics by diet alone, if this is possible.
- To adjust the dose of Glibenclamide according to the blood glucose response and to the 24 hour urinary glucose during the first days of treatment.

### In case of Lactic acidosis

Lactic acidosis is a very rare, but serious (high mortality rate in the absence of prompt treatment), metabolic complication that can occur due to metformin accumulation. Reported cases of lactic acidosis in patients on metformin have occurred primarily in diabetic patients with impaired renal failure or acute worsening of renal function. Special caution should be paid to situations where renal function may become impaired, for example in case of dehydration (severe diarrhoea or vomiting), or when initiating antihypertensive therapy or diuretic therapy and when starting therapy with a non-steroidal anti-inflammatory drug (NSAID). In the acute conditions listed, metformin should be temporarily discontinued.

Other associated risk factors should be considered to avoid lactic acidosis such as poorly controlled diabetes, ketosis, prolonged fasting, excessive alcohol intake, hepatic insufficiency and any condition associated with hypoxia (such as decompensated cardiac failure, acute myocardial infarction)

The risk of lactic acidosis must be considered in the event of non-specific signs such as muscle cramps, digestive disorders as abdominal pain and severe asthenia. Patients should be instructed to notify these signs immediately to their physicians if they occur, notably if patients had a good tolerance to metformin before. Metformin should be discontinued, at least temporarily, until the situation is clarified.

The risk of lactic acidosis must be considered in the event of non-specific signs such as muscle cramps, digestive disorders as abdominal pain and severe asthenia. Patients should be instructed to notify these signs immediately to their physicians if they occur, notably if patients had a good tolerance to metformin before. Metformin should be discontinued, at least temporarily, until the situation is clarified. Reintroduction of metformin should then be discussed taking into account the benefit/risk ratio in an individual basis as well as renal function.

### Diagnosis:

Lactic acidosis is characterised by acidotic dyspnoea, abdominal pain and hypothermia followed by coma. Diagnostic laboratory findings are decreased blood pH, plasma lactate levels above 5 mmol/L, and an increased anion gap and lactate/pyruvate ratio. In case of lactic acidosis, the patient should be hospitalised immediately.

Physicians should alert the patients on the risk and on the symptoms of lactic acidosis.

### Renal function

As Glibenclamide and Metformin is excreted by the kidney, creatinine clearance (this can be estimated from serum creatinine levels by using the Cockcroft-Gault formula) or eGFR should be determined before initiating treatment and regularly thereafter:

- At least annually in patients with normal renal function,
- At least two to four times a year in patients with creatinine clearance at the lower limit of

normal and in elderly subjects.

In case CrCl is  $<45$  ml/min (eGFR  $< 45$  ml/min/1.73m<sup>2</sup>), metformin is contraindicated

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 in case of dehydration, or when initiating antihypertensive therapy or diuretic therapy and when starting therapy with a non-steroidal anti-inflammatory drug (NSAID).

In these cases, it is also recommended to check renal function before initiating treatment with Glibenclamide and Metformin.

### Cardiac function

Patients with heart failure are more at risk of hypoxia and renal insufficiency. In patients with stable chronic heart failure, metformin may be used with a regular monitoring of cardiac and renal function.

For patients with acute and unstable heart failure, Glibenclamide and Metformin is contraindicated.

### Administration of iodinated contrast media

The intravascular administration of iodinated contrast media in radiologic studies can lead to renal failure. This may induce metformin accumulation and may increase the risk for lactic acidosis. In patients with eGFR  $> 60$  ml/min/1.73 m<sup>2</sup>, Glibenclamide and Metformin must be discontinued prior to, or at the time of the test and not be reinstated until at least 48 hours afterwards, and only after renal function has been re-evaluated and has not deteriorated further. In patients with moderate renal impairment (eGFR between 45 and 60 ml/min/1.73m<sup>2</sup>), metformin must be discontinued 48 hours before administration of iodinated contrast media and not be reinstated until at least 48 hours afterwards and only after renal function has been reevaluated and has not deteriorated further.

### Surgery

Glibenclamide and Metformin must be discontinued 48 hours before elective surgery under general, spinal or peridural anaesthesia. Therapy may be restarted no earlier than 48 hours following surgery or resumption of oral nutrition and only if normal renal function has been established.

### Paediatric population

The diagnosis of type 2 diabetes mellitus should be confirmed before treatment with Glibenclamide and Metformin is initiated.

No effect of metformin on growth and puberty has been detected during controlled clinical studies of one-year duration but no long-term data on these specific points are available. Therefore, a careful follow-up of the effect of metformin on these parameters in metformin treated children, especially prepubescent children, is recommended.

### **Children aged between 10 and 12 years**

Only 15 subjects aged between 10 and 12 years were included in the reported controlled clinical studies conducted in children and adolescents. Although efficacy and safety of Glibenclamide and Metformin in these children did not differ from efficacy and safety in older children and adolescents, particular caution is recommended when prescribing to children aged between 10 and 12 years.

### 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.

Glibenclamide and Metformin alone does not cause hypoglycaemia, but caution is advised when it is used in combination with insulin or other oral antidiabetics (e.g. sulphonylureas or meglitinides).

#### 4.5 Drug-Interaction:

##### **Glibenclamide**

Concomitant use of Glibenclamide with the following medicine should be avoided:

**Bosentan:** There is the potential for an increased risk of hepatotoxicity when Glibenclamide is given with bosentan and therefore concomitant use should be avoided.

The following medicines affect the use of Glibenclamide:

**Analgesics and anti-inflammatory agents:** Large doses of salicylates and possibly other NSAIDs may lower blood glucose levels and the Glibenclamide dose may need to be reduced. Azapropazone and phenylbutazone may enhance the hypoglycaemic effect of Glibenclamide.

**Antibacterials:** Isoniazid may increase blood sugar levels, so the dose of sulphonylurea may need to be adjusted. Chloramphenicol, ciprofloxacin, co-trimoxazole, sulphonamides and tetracyclines may enhance the hypoglycaemic effect of Glibenclamide. Concomitant use with rifamycins may reduce the hypoglycaemic effect of sulphonylureas.

**Cytotoxic drugs:** Crisantaspase may induce hyperglycaemia and the dose of Glibenclamide may need to be adjusted.

**Anticoagulants:** Anticoagulants and disopyramide may enhance the hypoglycaemic effect of Glibenclamide.

**Antidepressants:** Tricyclic antidepressants and MAOIs may enhance the hypoglycaemic effect of Glibenclamide.

**Antifungals:** Miconazole increases plasma concentrations of sulphonylureas. There is the potential for fluconazole to increase the plasma concentration of Glibenclamide.

**Anti-gout agents:** Enhanced hypoglycaemic effect with allopurinol, sulphinpyrazone and probenecid.

**Antihypertensives:** ACE inhibitors, such as captopril and enalapril, may enhance the hypoglycaemic effect of Glibenclamide and Metformin. Beta blockers may increase the hypoglycaemic effects of sulphonylureas and mask the symptoms of hypoglycaemia. Concomitant use with diazoxide may reduce the hypoglycaemic effect of sulphonylureas.

**Antimalarials:** Possible increase in hypoglycaemia with quinine and quinidine.

**Antipsychotics:** Chlorpromazine in daily doses of 100mg or more can reduce the hypoglycaemic effect of sulphonylureas.

**Antiulcer drugs:** Cimetidine and ranitidine may enhance the hypoglycaemic effect of Glibenclamide.

**Diuretics:** Loop and thiazide diuretics may reduce the hypoglycaemic effect of Glibenclamide.

**Lipid-lowering drugs:** Clofibrate group drugs may improve glucose tolerance and have an additive effect.

**Lithium:** May occasionally impair glucose tolerance.

**Sex hormones, hormone antagonists and steroids:** Testosterone, and anabolic steroids may enhance the hypoglycaemic effect of Glibenclamide. Octreotide may cause hypoglycaemia or hyperglycaemia. Concomitant use with oestrogens, progesterones, oral contraceptives, and corticosteroids may reduce the hypoglycaemic effect of sulphonylureas.

**Thyroid hormones:** May reduce the effect of sulphonylureas.

**Anti-coagulants:** The anticoagulant effects of warfarin and other coumarins may be changed.

**Immunosuppressants:** There is the potential for Glibenclamide to raise plasma levels of ciclosporin, which would necessitate a dose reduction of ciclosporin.

### **Metformin**

#### **Concomitant use of the following are not recommended**

##### *Alcohol*

Acute alcohol intoxication is associated with an increased risk of lactic acidosis, particularly in case of fasting or malnutrition, hepatic insufficiency.

Avoid consumption of alcohol and alcohol-containing medicinal product.

##### *Iodinated contrast media*

Intravascular administration of iodinated contrast media may lead to renal failure, resulting in metformin accumulation and an increased risk of lactic acidosis.

In patients with eGFR > 60 ml/min/1.73m<sup>2</sup>, metformin must be discontinued prior to, or at the time of the test and not be reinstated until at least 48 hours afterwards, and only after renal function has been re-evaluated and has not deteriorated further.

In patients with moderate renal impairment (eGFR between 45 and 60 ml/min/1.73m<sup>2</sup>), Glibenclamide and Metformin must be discontinued 48 hours before administration of iodinated contrast media and not be reinstated until at least 48 hours afterwards and only after renal function has been reevaluated and has not deteriorated further.

#### **Combinations requiring precautions for use**

Medicinal products with intrinsic hyperglycaemic activity (*e.g. glucocorticoids (systemic and local routes) and sympathomimetics*)

More frequent blood glucose monitoring may be required, especially at the beginning of treatment. If necessary, adjust the metformin dosage during therapy with the respective medicinal product and upon its discontinuation.

##### *Diuretics, especially loop diuretics*

They may increase the risk of lactic acidosis due to their potential to decrease renal function.

## **4.6 Use in special populations**

### **Pregnancy**

Glibenclamide and Metformin is contraindicated in pregnancy.

Uncontrolled diabetes during pregnancy (gestational or permanent) is associated with increased risk of congenital abnormalities and perinatal mortality.

A limited amount of data from the use of Glibenclamide and Metformin in pregnant women does not indicate an increased risk of congenital abnormalities. Animal studies do not indicate harmful effects with respect to pregnancy, embryonic or foetal development, parturition or postnatal development.

When the patient plans to become pregnant and during pregnancy, it is recommended that diabetes is not treated with Glibenclamide and Metformin but insulin be used to maintain blood glucose levels as close to normal as possible, to reduce the risk of malformations of the foetus.

### **Breast-feeding**

Glibenclamide and Metformin is excreted into human breast milk. No adverse effects were observed in breastfed newborns/infants. However, as only limited data are available, breast-feeding is not recommended during metformin treatment. A decision on whether to discontinue breast-feeding should be made, taking into account the benefit of breast-feeding to the infant, the benefit of the drug to the mother and the potential risk to adverse effects on the child.

### **Fertility**

Fertility of male or female rats was unaffected by Glibenclamide and Metformin when administered at doses as high as approximately three times the maximum recommended human daily dose based on body surface area comparisons.

#### **4.7 Effects on ability to drive and use machines:**

It has no effect on the ability to drive or to use machines.

However, patients should be alerted to the risk of hypoglycaemia when metformin is used in combination with other antidiabetic agents (e.g. sulfonylureas, insulin or meglitinides).

#### **4.8 Undesirable effects:**

During treatment initiation, the most common adverse reactions are nausea, vomiting, diarrhoea, abdominal pain and loss of appetite, which resolve spontaneously in most cases. To prevent them, it is recommended to take Glibenclamide and Metformin in 2 or 3 daily doses and to increase slowly the doses. The following adverse reactions may occur under treatment with Glibenclamide and Metformin.

#### **Metabolism and nutrition disorders**

*Very rare*

- Lactic acidosis
- Decrease of vitamin B12 absorption with decrease of serum levels during long-term use of metformin. Consideration of such aetiology is recommended if a patient presents with megaloblastic anaemia.
- Hypoglycaemia.
- Syndrome of inappropriate secretion of antidiuretic hormone, characterised by water retention and hyponatraemia.

#### **Nervous system disorders**

*Common*

- Taste disturbance

#### **Gastrointestinal disorders**

*Very common*

- Gastrointestinal disorders such as nausea, vomiting, diarrhoea, abdominal pain, heartburn, anorexia and loss of appetite. These undesirable effects occur most frequently during initiation of therapy and resolve spontaneously in most cases. To prevent them, it is recommended that Glibenclamide and Metformin be taken in 2 or 3 daily doses during or after meals. A slow increase of the dose may also improve gastrointestinal tolerability.

### Hepatobiliary disorders

*Very rare*

- Isolated reports of liver function tests abnormalities or hepatitis resolving upon Glibenclamide and Metformin discontinuation.

### Skin and subcutaneous tissue disorders

*Very rare*

- Skin reactions such as erythema, pruritus, urticaria

### Immune system disorders

- Hypersensitivity reactions:
- Rash, urticaria, erythema multiforme, erythema nodosum, bullous eruptions, pruritus, exfoliative dermatitis, photosensitivity
- Altered liver enzymes values, hepatitis and cholestatic jaundice.
- Blood dyscrasias including agranulocytosis, aplastic and haemolytic anaemia, pancytopenia, leucopenia, thrombocytopenia and neutropenia
- Fever
- Stevens-Johnson syndrome

Hypersensitivity reactions affecting the skin usually occur within the first six weeks of treatment with a sulphonylurea.

### **Paediatric population**

In published and post marketing data and in reported controlled clinical studies in a limited paediatric population aged 10-16 years treated during 1 year, adverse event reporting was similar in nature and severity to that reported in adults.

#### **Reporting of side effects:**

If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via any point of contact of Torrent Pharma available at:

[http://www.torrentpharma.com/Index.php/site/info/adverse\\_event\\_reporting](http://www.torrentpharma.com/Index.php/site/info/adverse_event_reporting).

## **4.9 Overdose:**

### **Symptoms:**

High overdose of Glibenclamide and Metformin or concomitant risks may lead to hypoglycaemia and lactic acidosis.

### **Treatment:**

Treatment for hypoglycaemia:

- Patient should be transferred to hospital
- Activated charcoal to be administered
- Hypoglycaemia should be treated with urgency by appropriate means
- Vital signs should be monitored and appropriate supportive measures used, including the treatment of cerebral oedema should this occur

Observation should continue for several days in case hypoglycaemia is prolonged or recurs.

Treatment for lactic acidosis:

- Lactic acidosis is a medical emergency and must be treated in hospital. The most effective method to remove lactate and Glibenclamide and Metformin is haemodialysis.



## **5. Pharmacological properties:**

### **5.1 Mechanism of Action:**

#### **Glibenclamide**

Glibenclamide is an orally active hypoglycaemic agent, which acts by stimulating insulin secretion.

#### **Metformin**

Metformin is a biguanide with antihyperglycaemic effects, lowering both basal and postprandial plasma glucose. It does not stimulate insulin secretion and therefore does not produce hypoglycaemia.

Metformin may act via 3 mechanisms:

- Reduction of hepatic glucose production by inhibiting gluconeogenesis and glycogenolysis.
- In muscle, by increasing insulin sensitivity, improving peripheral glucose uptake and utilization.
- And delay of intestinal glucose absorption.

Metformin stimulates intracellular glycogen synthesis by acting on glycogen synthase.

Metformin increases the transport capacity of all types of membrane glucose transporters (GLUTs) known to date.

### **5.2 Pharmacodynamic properties:**

#### **Glibenclamide**

Glibenclamide appears to lower blood glucose acutely by stimulating the release of insulin from the pancreas, an effect dependent upon functioning beta cells in the pancreatic islets. The mechanism by which Glibenclamide lowers blood glucose during long-term administration has not been clearly established. With chronic administration in patients with type 2 diabetes, the blood glucose lowering effect persists despite a gradual decline in the insulin secretory response to the drug. Extrapancreatic effects may be involved in the mechanism of action of oral sulfonylurea hypoglycemic drugs.

#### **Metformin**

In reported clinical studies, use of metformin was associated with either a stable body weight or modest weight loss.

In humans, independently of its action on glycaemia, metformin has favourable effects on lipid metabolism. This has been shown at therapeutic doses in controlled, medium-term or long-term clinical studies: metformin reduces total cholesterol, LDL cholesterol and triglyceride levels.

#### Clinical efficacy

The reported prospective randomised study (UKPDS) has established the long-term benefit of intensive blood glucose control in adult patients with type 2 diabetes.

Analysis of the results for overweight patients treated with metformin after failure of diet alone showed:

- a significant reduction of the absolute risk of any diabetes-related complication in the metformin group (29.8 events/1000 patient-years) versus diet alone (43.3 events/1000 patient-years),  $p=0.0023$ , and versus the combined sulfonylurea and insulin monotherapy groups (40.1 events/1000 patient-years),  $p=0.0034$ ;
- a significant reduction of the absolute risk of diabetes-related mortality: metformin 7.5 events/1000 patient-years, diet alone 12.7 events/1000 patient-years,  $p=0.017$ ;

- a significant reduction of the absolute risk of overall mortality: metformin 13.5 events/1000 patient-years versus diet alone 20.6 events/1000 patient-years ( $p=0.011$ ), and versus the combined sulfonylurea and insulin monotherapy groups 18.9 events/1000 patient-years ( $p=0.021$ );
- a significant reduction in the absolute risk of myocardial infarction: metformin 11 events/1000 patient-years, diet alone 18 events/1000 patient-years ( $p=0.01$ ).

Benefit regarding clinical outcome has not been shown for metformin used as second-line therapy, in combination with a sulfonylurea.

In type 1 diabetes, the combination of metformin and insulin has been used in selected patients, but the clinical benefit of this combination has not been formally established.

#### Paediatric population

Reported controlled clinical studies in a limited paediatric population aged 10-16 years treated during 1 year demonstrated a similar response in glycaemic control to that seen in adults.

### **5.3 Pharmacokinetic properties:**

#### **Glibenclamide**

Glibenclamide is rapidly absorbed and is extensively bound to plasma proteins, but is not readily displaced by acidic drugs. It is excreted as metabolites in the urine and bile.

#### **Metformin**

##### Absorption

After an oral dose of metformin hydrochloride tablet, maximum plasma concentration ( $C_{max}$ ) is reached in approximately 2.5 hours ( $t_{max}$ ). Absolute bioavailability of a 500 mg or 850 mg metformin hydrochloride tablet is approximately 50-60% in healthy subjects. After an oral dose, the non-absorbed fraction recovered in faeces was 20-30%.

After oral administration, metformin absorption is saturable and incomplete. It is assumed that the pharmacokinetics of metformin absorption is non-linear.

At the recommended metformin doses and dosing schedules, steady state plasma concentrations are reached within 24 to 48 hours and are generally less than 1 microgram/ml. In controlled clinical trials, maximum metformin plasma levels ( $C_{max}$ ) did not exceed 5 microgram/ml, even at maximum doses.

Food decreases the extent and slightly delays the absorption of metformin. Following oral administration of a 850 mg tablet, a 40% lower plasma peak concentration, a 25% decrease in AUC (area under the curve) and a 35 minute prolongation of the time to peak plasma concentration were observed. The clinical relevance of these findings is unknown.

##### Distribution

Plasma protein binding is negligible. Metformin partitions into erythrocytes. The blood peak is lower than the plasma peak and appears at approximately the same time. The red blood cells most likely represent a secondary compartment of distribution. The mean volume of distribution ( $V_d$ ) ranged between 63-276 l.

##### Metabolism

Metformin is excreted unchanged in the urine. No metabolites have been identified in humans.

##### Elimination

Renal clearance of metformin is  $> 400$  ml/min, indicating that metformin is eliminated by

glomerular filtration and tubular secretion. Following an oral dose, the apparent terminal elimination half-life is approximately 6.5 hours.

When renal function is impaired, renal clearance is decreased in proportion to that of creatinine and thus the elimination half-life is prolonged, leading to increased levels of metformin in plasma.

### Characteristics in specific groups of patients

#### Renal impairment

The available data in subjects with moderate renal insufficiency are scarce and no reliable estimation of the systemic exposure to metformin in this subgroup as compared to subjects with normal renal function could be made. Therefore, the dose adaptation should be made upon clinical efficacy/tolerability considerations.

#### Paediatric population

Single dose study: After single doses of metformin hydrochloride 500 mg paediatric patients have shown similar pharmacokinetic profile to that observed in healthy adults.

Multiple dose study: Data are restricted to one study. After repeated doses of 500 mg twice daily for 7 days in paediatric patients the peak plasma concentration (C<sub>max</sub>) and systemic exposure (AUC<sub>0-t</sub>) were reduced by approximately 33% and 40%, respectively compared to diabetic adults who received repeated doses of 500 mg twice daily for 14 days. As the dose is individually titrated based on glycaemic control, this is of limited clinical relevance

## **6. Nonclinical properties:**

### **6.1 Animal Toxicology or Pharmacology**

#### **Glibenclamide**

There are no pre-clinical data of any relevance to the prescriber, which are additional to those already included in other sections.

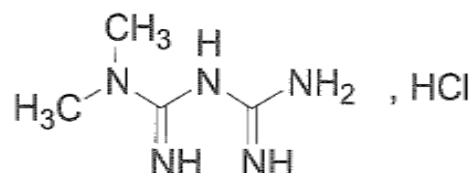
#### **Metformin**

Preclinical data reveal no special hazard for humans based on conventional studies on safety, pharmacology, repeated dose toxicity, genotoxicity, carcinogenic potential and reproductive toxicity.

## **7. Description:**

### **Metformin Hydrochloride**

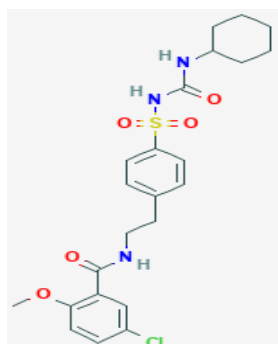
Metformin Hydrochloride is 1, 1-dimethylbiguanide hydrochloride. Having molecular formula C<sub>4</sub>H<sub>11</sub>N<sub>5</sub>HCl and molecular weight 165.6. The chemical structure is:



#### **Glibenclamide**

Glibenclamide is chemically 5-chloro-N-[2-[4-(cyclohexylcarbamoylsulfamoyl)phenyl]ethyl]-2-methoxybenzamide having molecular formula of C<sub>23</sub>H<sub>28</sub>ClN<sub>3</sub>O<sub>5</sub>S and molecular weight of 494

g/mol. The chemical structure is:



Glibenclamide and Metformin Tablets are white to off-white, round, flat, scored on one side, plain on other side & uncoated tablets. The excipients used are Starch, Microcrystalline Cellulose, Colour Tartrazine, Isopropyl Alcohol, Methylene Chloride, Polyvinyl Pyrrolidone, Colloidal Silicon Dioxide, Magnesium Stearate, Talcum and Sodium Starch Glycolate.

## 8. Pharmaceutical particulars:

### 8.1 Incompatibilities:

Not applicable.

### 8.2 Shelf-life:

Do not use later than the date of expiry.

### 8.3 Packaging information:

DIBETA Gb is available in blister strip of 10 tablets.

### 8.4 Storage and handing instructions:

Store at a temperature not exceeding 30°C. Protect from light and moisture.

Keep out of reach of children.

## 9. Patient Counselling Information

### Package leaflet: Information for the user

#### DIBETA Gb

Glibenclamide and Metformin Tablets I.P.

**Read all of this leaflet carefully before you start taking this medicine because it contains important information for you.**

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor or pharmacist.
- This medicine has been prescribed for you only. Do not pass it on to others. It may harm them, even if their signs of illness are the same as yours.
- If you get any side effects, talk to your doctor or pharmacist. This includes any possible side effects not listed in this leaflet. See section 4.

### What is in this leaflet?

9.1 What DIBETA Gb is and what it is used for

9.2 What you need to know before you take DIBETA Gb

9.3 How to take DIBETA Gb

9.4 Possible side effects

9.5 How to store DIBETA Gb

## 9.6 Contents of the pack and other information

### 9.1. What DIBETA Gb is and what it is used for

DIBETA Gb contains the active substance Glibenclamide and Metformin.

As an adjunct to diet and exercise in type 2 diabetes, as initial therapy or second line therapy when response to a sulphonylurea or metformin is inadequate.

### 9.2. What you need to know before you take DIBETA Gb

#### **Do not take DIBETA Gb if:**

- you have known hypersensitivity to Glibenclamide and metformin or to any of the excipients.
- you have known hypersensitivity to other sulphonylureas and related drugs.
- you have juvenile onset diabetes.
- you have diabetic ketoacidosis.
- you have severe infection, stress, trauma, surgical procedures or other severe conditions where the drug is unlikely to control the hyperglycaemia.
- you have severe impairment of renal function.
- you have acute conditions with the potential to alter renal function such as: dehydration, severe infection, shock.
- you have disease which may cause tissue hypoxia (especially acute disease, or worsening of chronic disease) such as: decompensated heart failure, respiratory failure, recent myocardial infarction, shock.
- you have hepatic impairment.
- you have hepatic insufficiency, acute alcohol intoxication, alcoholism.
- you have diabetic coma and pre-coma.
- you have porphyria.
- you are elderly (> 70 years).
- you are pregnant.

#### **Warnings and precautions**

#### **Talk to your doctor before taking DIBETA Gb:**

Hypoglycaemia: all sulphonylurea drugs are capable of producing moderate or severe hypoglycaemia, particularly in the following conditions:

- in patients controlled by diet alone.
- in cases of overdose.
- when calorie or glucose intake is insufficient
- in patients with irregular mealtimes and/or missed meals
- during excessive exercise
- in debilitated patients
- in patients with mild to moderate renal impairment. However, in long-term clinical trials patients with renal insufficiency have been treated satisfactorily using Glibenclamide at reduced doses with careful patient monitoring.
- In patients with adrenal or pituitary insufficiency
- In order to reduce the risk of hypoglycaemia it is therefore recommended:
- To initiate treatment for non-insulin dependent diabetics by diet alone, if this is possible.

- To adjust the dose of Glibenclamide according to the blood glucose response and to the 24 hour urinary glucose during the first days of treatment.

#### In case of Lactic acidosis

Lactic acidosis is a very rare, but serious (high mortality rate in the absence of prompt treatment), metabolic complication that can occur due to metformin accumulation. Reported cases of lactic acidosis in patients on metformin have occurred primarily in diabetic patients with impaired renal failure or acute worsening of renal function. Special caution should be paid to situations where renal function may become impaired, for example in case of dehydration (severe diarrhoea or vomiting), or when initiating antihypertensive therapy or diuretic therapy and when starting therapy with a non-steroidal anti-inflammatory drug (NSAID). In the acute conditions listed, metformin should be temporarily discontinued.

Other associated risk factors should be considered to avoid lactic acidosis such as poorly controlled diabetes, ketosis, prolonged fasting, excessive alcohol intake, hepatic insufficiency and any condition associated with hypoxia (such as decompensated cardiac failure, acute myocardial infarction)

The risk of lactic acidosis must be considered in the event of non-specific signs such as muscle cramps, digestive disorders as abdominal pain and severe asthenia. Patients should be instructed to notify these signs immediately to their physicians if they occur, notably if patients had a good tolerance to metformin before. Metformin should be discontinued, at least temporarily, until the situation is clarified.

The risk of lactic acidosis must be considered in the event of non-specific signs such as muscle cramps, digestive disorders as abdominal pain and severe asthenia. Patients should be instructed to notify these signs immediately to their physicians if they occur, notably if patients had a good tolerance to metformin before. Metformin should be discontinued, at least temporarily, until the situation is clarified. Reintroduction of metformin should then be discussed taking into account the benefit/risk ratio in an individual basis as well as renal function.

#### Diagnosis:

Lactic acidosis is characterised by acidotic dyspnoea, abdominal pain and hypothermia followed by coma. Diagnostic laboratory findings are decreased blood pH, plasma lactate levels above 5 mmol/L, and an increased anion gap and lactate/pyruvate ratio. In case of lactic acidosis, the patient should be hospitalised immediately.

Physicians should alert the patients on the risk and on the symptoms of lactic acidosis.

#### Renal function

As Glibenclamide and Metformin is excreted by the kidney, creatinine clearance (this can be estimated from serum creatinine levels by using the Cockcroft-Gault formula) or eGFR should be determined before initiating treatment and regularly thereafter:

- At least annually in patients with normal renal function,
- At least two to four times a year in patients with creatinine clearance at the lower limit of

normal and in elderly subjects.

In case CrCl is  $<45$  ml/min (eGFR  $< 45$  ml/min/1.73m<sup>2</sup>), metformin is contraindicated. 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 in case of dehydration, or when initiating antihypertensive therapy or diuretic therapy and when starting therapy with a non-steroidal anti-inflammatory drug (NSAID).

In these cases, it is also recommended to check renal function before initiating treatment with Glibenclamide and Metformin.

### Cardiac function

Patients with heart failure are more at risk of hypoxia and renal insufficiency. In patients with stable chronic heart failure, metformin may be used with a regular monitoring of cardiac and renal function.

For patients with acute and unstable heart failure, Glibenclamide and Metformin is contraindicated.

### Administration of iodinated contrast media

The intravascular administration of iodinated contrast media in radiologic studies can lead to renal failure. This may induce metformin accumulation and may increase the risk for lactic acidosis. In patients with eGFR  $> 60$  ml/min/1.73 m<sup>2</sup>, Glibenclamide and Metformin must be discontinued prior to, or at the time of the test and not be reinstated until at least 48 hours afterwards, and only after renal function has been re-evaluated and has not deteriorated further.

In patients with moderate renal impairment (eGFR between 45 and 60 ml/min/1.73m<sup>2</sup>), metformin must be discontinued 48 hours before administration of iodinated contrast media and not be reinstated until at least 48 hours afterwards and only after renal function has been reevaluated and has not deteriorated further.

### Surgery

Glibenclamide and Metformin must be discontinued 48 hours before elective surgery under general, spinal or peridural anaesthesia. Therapy may be restarted no earlier than 48 hours following surgery or resumption of oral nutrition and only if normal renal function has been established.

### Paediatric population

The diagnosis of type 2 diabetes mellitus should be confirmed before treatment with Glibenclamide and Metformin is initiated.

No effect of metformin on growth and puberty has been detected during controlled clinical studies of one-year duration but no long-term data on these specific points are available. Therefore, a careful follow-up of the effect of metformin on these parameters in metformin treated children, especially prepubescent children, is recommended.

### **Children aged between 10 and 12 years**

Only 15 subjects aged between 10 and 12 years were included in the reported controlled clinical studies conducted in children and adolescents. Although efficacy and safety of Glibenclamide and Metformin in these children did not differ from efficacy and safety in older children and adolescents, particular caution is recommended when prescribing to children aged between 10

and 12 years.

#### 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.

Glibenclamide and Metformin alone does not cause hypoglycaemia, but caution is advised when it is used in combination with insulin or other oral antidiabetics (e.g. sulfonylureas or meglitinides).

### **Pregnancy and breast-feeding**

#### Pregnancy

Glibenclamide and Metformin is contraindicated in pregnancy.

Uncontrolled diabetes during pregnancy (gestational or permanent) is associated with increased risk of congenital abnormalities and perinatal mortality.

A limited amount of data from the use of Glibenclamide and Metformin in pregnant women does not indicate an increased risk of congenital abnormalities. Animal studies do not indicate harmful effects with respect to pregnancy, embryonic or foetal development, parturition or postnatal development.

When the patient plans to become pregnant and during pregnancy, it is recommended that diabetes is not treated with Glibenclamide and Metformin but insulin be used to maintain blood glucose levels as close to normal as possible, to reduce the risk of malformations of the foetus.

#### Breast-feeding

Glibenclamide and Metformin is excreted into human breast milk. No adverse effects were observed in breastfed newborns/infants. However, as only limited data are available, breast-feeding is not recommended during metformin treatment. A decision on whether to discontinue breast-feeding should be made, taking into account the benefit of breast-feeding to the infant, the benefit of the drug to the mother and the potential risk to adverse effects on the child.

#### Fertility

Fertility of male or female rats was unaffected by Glibenclamide and Metformin when administered at doses as high as approximately three times the maximum recommended human daily dose based on body surface area comparisons.

### **9.3. How to take DIBETA Gb**

The recommended dose is one tablet of DIBETA Gb twice daily with the morning and evening meals. The daily dose should be titrated in increments of no more than 5 mg Glibenclamide / 500 mg metformin up to the minimum effective dose to achieve adequate blood glucose control. The dose should not exceed the maximum recommended daily dose of 20 mg Glibenclamide /2000 mg metformin.

### **9.4. Possible side effects**

During treatment initiation, the most common adverse reactions are nausea, vomiting, diarrhoea, abdominal pain and loss of appetite, which resolve spontaneously in most cases. To prevent them, it is recommended to take Glibenclamide and Metformin in 2 or 3 daily doses and to increase slowly the doses. The following adverse reactions may occur under treatment with Glibenclamide and Metformin.



### Metabolism and nutrition disorders

*Very rare*

- Lactic acidosis
- Decrease of vitamin B12 absorption with decrease of serum levels during long-term use of metformin. Consideration of such aetiology is recommended if a patient presents with megaloblastic anaemia.
- Hypoglycaemia.
- Syndrome of inappropriate secretion of antidiuretic hormone, characterised by water retention and hyponatraemia.

### Nervous system disorders

*Common*

- Taste disturbance

### Gastrointestinal disorders

*Very common*

- Gastrointestinal disorders such as nausea, vomiting, diarrhoea, abdominal pain, heartburn, anorexia and loss of appetite. These undesirable effects occur most frequently during initiation of therapy and resolve spontaneously in most cases. To prevent them, it is recommended that Glibenclamide and Metformin be taken in 2 or 3 daily doses during or after meals. A slow increase of the dose may also improve gastrointestinal tolerability.

### Hepatobiliary disorders

*Very rare*

- Isolated reports of liver function tests abnormalities or hepatitis resolving upon Glibenclamide and Metformin discontinuation.

### Skin and subcutaneous tissue disorders

*Very rare*

- Skin reactions such as erythema, pruritus, urticaria

### Immune system disorders

- Hypersensitivity reactions:
- Rash, urticaria, erythema multiforme, erythema nodosum, bullous eruptions, pruritus, exfoliative dermatitis, photosensitivity
- Altered liver enzymes values, hepatitis and cholestatic jaundice.
- Blood dyscrasias including agranulocytosis, aplastic and haemolytic anaemia, pancytopenia, leucopenia, thrombocytopenia and neutropenia
- Fever
- Stevens-Johnson syndrome

Hypersensitivity reactions affecting the skin usually occur within the first six weeks of treatment with a sulphonylurea.

### **Paediatric population**

In published and post marketing data and in reported controlled clinical studies in a limited paediatric population aged 10-16 years treated during 1 year, adverse event reporting was similar

in nature and severity to that reported in adults.

### **Reporting of side effects:**

If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via any point of contact of Torrent Pharma available at:

[http://www.torrentpharma.com/Index.php/site/info/adverse\\_event\\_reporting](http://www.torrentpharma.com/Index.php/site/info/adverse_event_reporting)

### **9.5. How to store DIBETA Gb**

Store at a temperature not exceeding 30°C. Protect from light and moisture.  
Keep out of reach of children.

### **9.6. Contents of the pack and other information**

#### **What DIBETA Gb contains**

The active substance is Glibenclamide and Metformin.

**The other ingredients are** Starch, Microcrystalline Cellulose, Colour Tartrazine, Isopropyl Alcohol, Methylene Chloride, Polyvinyl Pyrrolidone, Colloidal Silicon Dioxide, Magnesium Stearate, Talcum and Sodium Starch Glycolate.

### **10. Details of manufacturer**

Manufactured by:  
Pure & Cure Healthcare Pvt. Ltd.  
(A subsidiary of Akums Drugs & Pharmaceuticals Ltd.)  
Plot No. 26A, 27-30, Sector-8A, I.I.E.,  
SIDCUL, Haridwar-249 403, Uttarakhand

### **11. Details of permission or licence number with date**

Mfg Lic. No. 31/UA/2013 issued on 30.05.2020

### **12. Date of revision**

November 2020

MARKETED BY



TORRENT PHARMACEUTICALS LTD.

**IN/DIBETA Gb 5,500 mg/NOV-20/02/PI**