Met®

Metformin

Description
Metformin Hydrochloride (**Met®**) is an oral biguanide antidiabetic. Metformin reduces elevated blood glucose concentration in patients with diabetes, but it does not increase insulin secretion. It exerts blood glucose lowering effects through the augmentation of muscular glucose uptake and utilization and reduction of increased hepatic glucose production. Metformin potentiates insulin action mainly by a post-receptor mechanism. In this way, metformin ameliorates insulin resistance.

Mode of action
Metformin Hydrochloride (**Met®**) decreases hepatic glucose production, decreases intestinal absorption of glucose and improves insulin sensitivity by increasing peripheral glucose uptake and utilization.

Pharmacokinetics
The absolute bioavailability given under fasting condition is approximately 50-60%. Food decreases the extent and slightly delays the absorption of metformin. Metformin is negligibly bound to plasma proteins in contrast to sulfonylureas. The elimination half-life is approximately 17.6 hours.

Composition
Met® 500 mg Tablet: Each film-coated tablet contains Metformin Hydrochloride BP 500 mg.
Met® 850 mg Tablet: Each film-coated tablet contains Metformin Hydrochloride BP 850 mg.

Indications
Type 2 diabetes (non-insulin dependent diabetes); type 1 diabetes (insulin dependent diabetes) as adjuvant therapy in combination with insulin; obesity and insulin resistance; hyperlipoproteinemia.

Dosage & administration
Treatment is usually initiated with 500-1000 mg daily, followed by a gradual increase if necessary. No further effect on blood glucose can be expected from doses above 3 gm daily. When good control has been achieved, the dose may be gradually reduced. An adequate blood glucose control may not be apparent until after 1-2 weeks. In order to minimize gastrointestinal side effects, metformin should be taken together with meals. Metformin is usually given in two or three daily doses.

Contraindications
Impaired renal function, acute complications (severe infections, major operations and trauma), before X-ray examinations with iodinated contrast materials, liver damage, alcoholism, deficiencies of vitamin B_{12}, folic acid and iron, ketosis prone diabetes, severe cardiovascular or respiratory disease, general ill health (malnutrition, dehydration, etc), diabetes with significant late complications (nephropathy, retinopathy).

Side effects
Lactic acidosis, vitamin B_{12} and folate malabsorption, hypoglycemia, diarrhoea, skin reactions and other hypersensitivity reactions.

Use in pregnancy & lactation
Metformin may enter into the breast milk and is best to avoid in nursing mothers. Pregnancy is generally regarded as a contraindication, and insulin should be used in all pregnant diabetic women.

Precautions
Metformin should be used with caution to patients with hepatic and renal disease, elderly patients and cardiac failure.

Drug interactions
Phenprocoumon (increases elimination of phenprocoumon); Cimetidine (increases the availability of metformin and reduces its renal clearance, therefore, the dose of metformin should be reduced); Hyperglycemic agents (thiazides, corticosteroids may partly offset the antihyperglycemic action of metformin); Alcohol (alcohol potentiates the action of metformin)

Overdosage
Hypoglycemia has not been seen with metformin doses of upto 85 gm, 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.

Storage
Keep out of reach of children. Store in a dry place, below 25˚C temperature and protected from light.

Packaging
Met® 500 mg Tablet: Each carton contains 10X6 tablets in blister pack.
Met® 850 mg Tablet: Each carton contains 10X6 tablets in blister pack.