

GLIFOLONG

Film-coated extended release bi layered tablets

Composition:

Each Film-coated extended release bi layered tablet contains:

2.5 mg dapagliflozin (as dapagliflozin propanediol monohydrate) and 1000 mg metformin hydrochloride.

5 mg dapagliflozin (as dapagliflozin propanediol monohydrate) and 500 mg metformin hydrochloride.

5mg dapagliflozin (as dapagliflozin propanediol monohydrate) and 1000 mg metformin hydrochloride.

10 mg dapagliflozin (as dapagliflozin propanediol monohydrate) and 500 mg metformin hydrochloride.

10 mg dapagliflozin (as dapagliflozin propanediol monohydrate) and 1000 mg metformin hydrochloride.

Excipients:

Dapagliflozin layer (immediate-release):

microcrystalline cellulose, lactose anhydrous, Crospovidone, silicon dioxide, magnesium stearate.

Metformin layer (extended-release):

For 500 mg: carboxymethylcellulose sodium, Hypromellose 2208, Hypromellose 2910, microcrystalline cellulose, silicon dioxide, and magnesium stearate.

For 1000 mg: carboxymethylcellulose sodium, Hypromellose 2208, silicon dioxide, magnesium stearate.

Film coating: polyvinyl alcohol, titanium dioxide, polyethylene glycol, talc.

Mechanism of Action:

THIS PRODUCT combines two antihyperglycemic agents with complementary mechanisms of action to improve glycemic control in patients with type 2 diabetes: dapagliflozin, a sodium-glucose cotransporter 2 (SGLT2) inhibitor, and metformin HCl, a biguanide.

Dapagliflozin, expressed in the proximal renal tubules, is responsible for the majority of the reabsorption of filtered glucose from the tubular lumen. Dapagliflozin is an inhibitor of SGLT2. By inhibiting SGLT2, dapagliflozin reduces reabsorption of filtered glucose and lowers the renal threshold for glucose, and thereby increases urinary glucose excretion. Dapagliflozin also reduces sodium reabsorption and increases the delivery of sodium to the distal tubule. This may influence several physiological functions including, but not restricted to, lowering both pre- and afterload of the heart and down regulation of sympathetic activity.

Metformin HCl:

Metformin is an antihyperglycemic agent which improves glucose tolerance in patients with type 2 diabetes mellitus, 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. With metformin therapy, insulin secretion remains unchanged while fasting insulin levels and day-long plasma insulin response may decrease.

Pharmacokinetics:

Absorption:

Dapagliflozin: Following oral administration of dapagliflozin, the maximum plasma concentration (C_{max}) is usually attained within 2 hours under fasting state. The C_{max} and AUC values increase dose proportionally with increase in dapagliflozin dose in the therapeutic dose range. The absolute oral bioavailability of dapagliflozin following the administration of a 10 mg dose is 78%. Administration of dapagliflozin with a high-fat meal decreases its C_{max} by up to 50% and prolongs T_{1/2} by approximately 1 hour, but does not alter AUC as compared with the fasted state. These changes are not considered to be clinically meaningful and dapagliflozin can be administered with or without food.

Metformin HCl: Following a single oral dose of metformin extended-release, C_{max} is achieved with a median value of 7 hours and a range of 4 to 8 hours. The extent of metformin absorption (as measured by AUC) from the metformin extended-release tablet increased by approximately 50% when given with food. There was no effect of food on C_{max} and T_{1/2} of metformin.

Distribution:

Dapagliflozin: Dapagliflozin is approximately 91% protein bound. Protein binding is not altered in patients with renal or hepatic impairment.

Metformin HCl:

Distribution studies with extended-release metformin have not been conducted; however, the apparent volume of distribution (V/F) of metformin following single oral doses of immediate-release metformin 850 mg averaged 654 ± 358 L. Metformin is negligibly bound to plasma proteins, in contrast to sulfonylureas, which are more than 90% protein bound. Metformin partitions into erythrocytes.

Metabolism:

Dapagliflozin: The metabolism of dapagliflozin is primarily mediated by UG-T1A9. Dapagliflozin is extensively metabolized, primarily to yield dapagliflozin 3-O-glucuronide, which is an inactive metabolite. Metformin is excreted unchanged in the urine and does not undergo hepatic metabolism.

Elimination:

Dapagliflozin: Dapagliflozin and related metabolites are primarily eliminated via the renal pathway.

Metformin HCl:

Renal clearance 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 11.6 hours, suggesting that the erythrocyte mass may be a compartment of distribution.

INDICATIONS:

THIS PRODUCT is indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus. Dapagliflozin is indicated to reduce the risk of hospitalization for heart failure in adults with type 2 diabetes mellitus and established cardiovascular disease (CVD) or multiple cardiovascular (CV) risk factors. Limitations of Use: THIS PRODUCT is not recommended for patients with type 1 diabetes mellitus or diabetic ketoacidosis.

CONTRAINDICATION:

THIS PRODUCT is contraindicated in patients with:

• Severe renal impairment (eGFR below 30 mL/min/1.73 m²), end stage renal

disease or patients on dialysis.

• History of a serious hypersensitivity reaction to dapagliflozin, such as anaphylactic reactions or angioedema, or hypersensitivity to metformin HCl

• Acute or chronic metabolic acidosis, including diabetic ketoacidosis, with or without coma. Diabetic ketoacidosis should be treated with insulin.

WARNINGS AND PRECAUTIONS:

Lactic Acidosis:

There have been post-marketing cases of metformin-associated lactic acidosis, including fatal cases. These cases had a subtle onset and were accompanied by nonspecific symptoms such as malaise, myalgias, abdominal pain, respiratory distress, or increased somnolence; however, hyperthermia, hypotension and resistant bradyarrhythmias have occurred with severe acidosis.

If metformin-associated lactic acidosis is suspected, general supportive measures should be instituted promptly in a hospital setting, along with immediate discontinuation of XIGDUO XR. In XIGDUO XR-treated patients with a diagnosis or strong suspicion of lactic acidosis, prompt hemodialysis is recommended to correct the acidosis and remove accumulated metformin (metformin HCl is dialyzable, with a clearance of up to 170 mL/min under good hemodynamic conditions). Hemodialysis has often resulted in reversal of symptoms and recovery.

Renal Impairment: The post marketing metformin-associated lactic acidosis cases primarily occurred in patients with significant renal impairment. The risk of metformin accumulation and metformin-associated lactic acidosis increases with the severity of renal impairment because metformin is substantially excreted by the kidney.

Before initiating THIS PRODUCT, obtain an estimated glomerular filtration rate (eGFR). THIS PRODUCT is contraindicated in patients with an eGFR less than 30 mL/min/1.73 m².

Obtain an eGFR at least annually in all patients taking XIGDUO XR. In patients at increased risk for the development of renal impairment (e.g., the elderly), renal function should be assessed more frequently.

The concomitant use of THIS PRODUCT with specific drugs may increase the risk of metformin-associated lactic acidosis: those that impair renal function, result in significant hemodynamic change, interfere with acid-base balance or increase metformin accumulation (e.g., cationic drugs). Therefore, consider more frequent monitoring of patients.

Age 65 or Greater: The risk of metformin-associated lactic acidosis increases with the patient's age because elderly patients have a greater likelihood of having hepatic, renal, or cardiac impairment than younger patients. Assess renal function more frequently in elderly patients.

Administration of intravascular iodinated contrast agents in metformin-treated patients has led to an acute decrease in renal function and the occurrence of lactic acidosis. Stop THIS PRODUCT at the time of, or prior to, an iodinated contrast imaging procedure in patients with a history of hepatic impairment, alcoholism, or heart failure; or in patients who will be administered intra-arterial iodinated contrast. Re-evaluate eGFR 48 hours after the imaging procedure, and restart THIS PRODUCT if renal function is stable.

Withholding of food and fluids during surgical or other procedures may increase the risk for volume depletion, hypotension and renal impairment. THIS PRODUCT should be temporarily discontinued while patients have restricted food and fluid intake.

Several of the post marketing cases of metformin-associated lactic acidosis occurred in the setting of acute congestive heart failure (particularly when accompanied by hypoperfusion and hypoxemia). Cardiovascular collapse (shock), acute myocardial infarction, sepsis, and other conditions associated with hypoxemia have been associated with lactic acidosis and may also cause pre renal azotemia. When such events occur, discontinue THIS PRODUCT.

Alcohol potentiates the effect of metformin on lactate metabolism and this may increase the risk of metformin-associated lactic acidosis. Warn patients against excessive alcohol intake while receiving THIS PRODUCT.

Patients with hepatic impairment have developed with cases of metformin-associated lactic acidosis. This may be due to impaired lactate clearance resulting in higher lactate blood levels. Therefore, avoid use of THIS PRODUCT in patients with clinical or laboratory evidence of hepatic disease.

Hypotension:

Dapagliflozin causes intravascular volume contraction. Symptomatic hypotension can occur after initiating dapagliflozin, particularly in patients with impaired renal function (eGFR less than 60 mL/min/1.73 m²), elderly patients, or patients on loop diuretics. Before initiating THIS PRODUCT in patients with one or more of these characteristics, volume status should be assessed and corrected. Monitor for signs and symptoms of hypotension after initiating therapy.

Ketoacidosis:

Reports of ketoacidosis, a serious life-threatening condition requiring urgent hospitalization have been identified in patients with type 1 and type 2 diabetes mellitus taking sodium-glucose cotransporter 2 (SGLT2) inhibitors, including dapagliflozin. Fatal cases of ketoacidosis have been reported in patients taking dapagliflozin. THIS PRODUCT is not indicated for the treatment of patients with type 1 diabetes mellitus [see Indications and Usage (1)]. Patients treated with THIS PRODUCT who present with signs and symptoms consistent with severe metabolic acidosis should be assessed for ketoacidosis regardless of blood glucose levels as ketoacidosis associated with THIS PRODUCT may be present even if blood glucose levels are less than 250 mg/dL. If ketoacidosis is suspected, THIS PRODUCT should be discontinued, the patient should be evaluated, and prompt treatment should be instituted. Treatment of ketoacidosis may require insulin, fluid, and carbohydrate replacement.

Before initiating XIGDUO XR, consider factors in the patient history that may predispose to ketoacidosis, including pancreatic insulin deficiency from any cause, caloric restriction and alcohol abuse.

For patients who undergo scheduled surgery, consider temporarily discontinuing THIS PRODUCT for at least 3 days prior to surgery. Consider monitoring for ketoacidosis and temporarily discontinuing THIS PRODUCT in other clinical situations known to predispose to ketoacidosis (e.g., prolonged fasting due to acute illness or post-surgery). Ensure risk factors for ketoacidosis are resolved prior to restarting XIGDUO XR. Educate patients on the signs and symptoms of ketoacidosis

and instruct patients to discontinue THIS PRODUCT and seek medical attention immediately if signs and symptoms occur.

Acute Kidney Injury:

Dapagliflozin causes intravascular volume contraction, and can cause acute kidney injury. There have been postmarketing reports of acute kidney injury, some requiring hospitalization and dialysis, in patients receiving dapagliflozin. Increases in serum creatinine and decreases in estimated GFR may also be observed with initiation of dapagliflozin. Elderly patients and patients with impaired renal function may be more susceptible to these changes. Before initiating dapagliflozin, consider factors that may predispose patients to acute kidney injury including hypovolemia, chronic renal insufficiency, congestive heart failure and concomitant medications (diuretics, ACE inhibitors, ARBs, NSAIDs). Consider temporarily discontinuing dapagliflozin in the setting of reduced oral intake (such as acute illness or fasting) or fluid losses (such as gastrointestinal illness or excessive heat exposure); monitor patients for signs and symptoms of acute kidney injury. If acute kidney injury occurs, discontinue dapagliflozin promptly and institute treatment. Renal function should be evaluated prior to initiation of THIS PRODUCT and monitored periodically thereafter. Use of THIS PRODUCT is not recommended when the eGFR is less than 45 mL/min/1.73 m². THIS PRODUCT is contraindicated in patients with an eGFR below 30 mL/min/1.73 m².

Urosepsis and Pyelonephritis:

There have been postmarketing reports of serious urinary tract infections including urosepsis and pyelonephritis requiring hospitalization in patients receiving SGLT2 inhibitors, including dapagliflozin. Treatment with SGLT2 inhibitors increases the risk for urinary tract infections. Evaluate patients for signs and symptoms of urinary tract infections and treat promptly, if indicated.

Hypoglycemia with Concomitant Use with Insulin and Insulin Secretagogues:

Insulin and insulin secretagogues (e.g., sulfonylurea) are known to cause hypoglycemia. THIS PRODUCT may increase the risk of hypoglycemia when combined with insulin and/or an insulin secretagogue. Therefore, a lower dose of insulin or insulin secretagogue may be required to minimize the risk of hypoglycemia when used in combination with THIS PRODUCT.

Necrotizing Fasciitis of the Perineum (Fournier's Gangrene):

Reports of necrotizing fasciitis of the perineum (Fournier's Gangrene), a rare but serious and life-threatening necrotizing infection requiring urgent surgical intervention, have been identified in post marketing surveillance in patients with diabetes mellitus receiving SGLT2 inhibitors, including dapagliflozin. Cases have been reported in both females and males. Serious outcomes have included hospitalization, multiple surgeries, and death. Patients treated with THIS PRODUCT presenting with pain or tenderness, erythema, or swelling in the genital or perineal area, along with fever or malaise, should be assessed for necrotizing fasciitis. If suspected, start treatment immediately with broad-spectrum antibiotics and, if necessary, surgical debridement. Discontinue THIS PRODUCT, closely monitor blood glucose levels, and provide appropriate alternative therapy for glycemic control.

Vitamin B Concentrations:

In controlled clinical trials of metformin of 29-week duration, a decrease to subnormal levels of previously normal serum vitamin B levels, without clinical manifestations, was observed in approximately 7% of patients. Such decrease, possibly due to interference with B absorption from the B-intrinsic factor complex, may be associated with anemia but appears to be rapidly reversible with discontinuation of metformin or vitamin B supplementation. Certain individuals (those with inadequate vitamin B or calcium intake or absorption) appear to be predisposed to developing subnormal vitamin B levels. Measure hematologic parameters on an annual basis and vitamin B at 2- to 3-year intervals in patients on THIS PRODUCT and manage any abnormalities.

Genital Mycotic Infections:

Dapagliflozin increases the risk of genital mycotic infections. Patients with a history of genital mycotic infections were more likely to develop genital mycotic infections. Monitor and treat appropriately.

ADVERSE REACTIONS:

Lactic Acidosis

Hypotension

Ketoacidosis

Acute Kidney Injury

Urosepsis and Pyelonephritis

Necrotizing Fasciitis of the Perineum (Fournier's Gangrene)

Genital Mycotic Infections

Adverse Reactions in ≥2% of Patients Treated with Dapagliflozin and Metformin:

Common:

Nasopharyngitis, Urinary tract infections, Diarrhea, Headache, Influenza, Nausea, Back pain, Dizziness, Cough, Constipation, Dyslipidemia, Pharyngitis, Increased urination, Discomfort with urination.

DRUG INTERACTIONS:

Positive Urine Glucose Test:

Dapagliflozin: Monitoring glycemic control with urine glucose tests is not recommended in patients taking SGLT2 inhibitors as SGLT2 inhibitors increase urinary glucose excretion and will lead to positive urine glucose tests. Use alternative methods to monitor glycemic control.

Interference with 1,5-anhydroglucitol (1,5-AG) Assay:

Dapagliflozin: Monitoring glycemic control with 1,5-AG assay is not recommended as measurements of 1,5-AG are unreliable in assessing glycemic control in patients taking SGLT2 inhibitors. Use alternative methods to monitor glycemic control.

Carbonic Anhydrase Inhibitors:

Topiramate or other carbonic anhydrase inhibitors (e.g., zonisamide, acetazolamide or dichlorophenamide) frequently causes a decrease in serum bicarbonate and induce non-anion gap, hyperchloremic metabolic acidosis. Concomitant use of these drugs with THIS PRODUCT may increase the risk for lactic acidosis. Consider more frequent monitoring of these patients.

Drugs that Reduce Metformin Clearance:

Concomitant use of drugs that interfere with common renal tubular transport



systems involved in the renal elimination of metformin (e.g., organic cationic transporter-2 [OCT2]/multidrug and toxin extrusion [MATE] inhibitors, such as ranolazine, vandetanib, dolutegravir, and cimetidine) could increase systemic exposure to metformin and may increase the risk for lactic acidosis. Consider the benefits and risks of concomitant use.

Alcohol: Alcohol is known to potentiate the effect of metformin on lactate metabolism. Warn patients against excessive alcohol intake while receiving THIS PRODUCT.

Drugs Affecting Glycemic Control:

Metformin HCl: Certain drugs tend to produce hyperglycemia and may lead to loss of glycemic control. These medications include thiazides and other diuretics, corticosteroids, phenothiazines, thyroid products, estrogens, oral contraceptives, phenytoin, nicotinic acid, sympathomimetics, calcium channel blocking drugs, and isoniazid. When such drugs are administered to a patient receiving THIS PRODUCT, observe the patient closely for loss of blood glucose control. When such drugs are withdrawn from a patient receiving THIS PRODUCT, observe the patient closely for hypoglycemia.

Pregnancy:

Based on animal data showing adverse renal effects, THIS PRODUCT is not recommended during the second and third trimesters of pregnancy.

Lactation:

Because of the potential for serious adverse reactions in breastfed infants, advise women that use of THIS PRODUCT is not recommended while breastfeeding.

Pediatric Use:

Safety and effectiveness of THIS PRODUCT in pediatric patients under 18 years of age have not been established.

Geriatric Use:

No dosage change is recommended based on age. More frequent assessment of renal function is recommended in elderly patients.

DOSE AND ADMINISTRATION:

Prior to Initiation of XIGDUO XR:

Assess renal function before initiating THIS PRODUCT therapy and periodically thereafter.

In patients with volume depletion, correct this condition prior to initiation of XIGDUO XR.

Recommended Dosage:

Take THIS PRODUCT once daily in the morning with food. Swallow THIS PRODUCT tablets whole and never crush, cut, or chew. Occasionally, the inactive ingredients of THIS PRODUCT will be eliminated in the feces as a soft, hydrated mass that may resemble the original tablet. Individualize the starting dose of THIS PRODUCT based upon the patient's current regimen. To improve glycemic control for patients not already taking dapagliflozin, the recommended starting dose for dapagliflozin is 5 mg once daily.

To reduce the risk of hospitalization for heart failure, the recommended dose for dapagliflozin is 10 mg once daily. For patients requiring a dose of 5 mg dapagliflozin and 2000 mg metformin HCl extended-release, use two of the 2.5 mg dapagliflozin/1000 mg metformin HCl extended-release tablets. Dosing may be adjusted based on effectiveness and tolerability while not exceeding the maximum recommended daily dose of 10 mg dapagliflozin and 2000 mg metformin HCl. Patients taking an evening dose of metformin XR should skip their last dose before starting THIS PRODUCT.

Patients with Renal Impairment:

THIS PRODUCT is contraindicated in patients with an estimated glomerular filtration rate (eGFR) below 30 mL/min/1.73 m².

No dose adjustment for THIS PRODUCT is needed in patients with an eGFR greater than or equal to 45 mL/min/1.73 m².

THIS PRODUCT is not recommended in patients with an eGFR below 45 mL/min/1.73 m².

Discontinuation for Iodinated Contrast Imaging Procedures:

Discontinue THIS PRODUCT at the time of, or prior to, an iodinated contrast imaging procedure in patients with a history of liver disease, alcoholism or heart failure; or in patients who will be administered intra-arterial iodinated contrast. Re-evaluate eGFR 48 hours after the imaging procedure; restart THIS PRODUCT if renal function is stable.

OVERDOSAGE:

Dapagliflozin:

There were no reports of overdose during the clinical development program for dapagliflozin. In the event of an overdose, contact the Poison Control Center. It is also reasonable to employ supportive measures as dictated by the patient's clinical status. The removal of dapagliflozin by hemodialysis has not been studied.

Metformin HCl:

Overdose of metformin HCl has occurred, including ingestion of amounts >50 grams. Lactic acidosis has been reported in approximately 32% of metformin overdose cases. Metformin is dialyzable with a clearance of up to 170 mL/min under good hemodynamic conditions. Therefore, hemodialysis may be useful for removal of accumulated drug from patients in whom metformin overdosage is suspected.

Storage conditions: store at 15-30 °C.

Packaging: 3 or 6 blisters, each contains 10 Film-coated extended release bi layered tablets.

TPP220	THIS IS A MEDICAMENT
	<ul style="list-style-type: none">- A medicament is a product but unlike any other products.- A medicament is a product which affects your health, and its consumption contrary to instructions is dangerous for you.- Follow strictly the doctor's prescription, the method of use and the instructions of the pharmacist who sold the medicament. The doctor and the pharmacist are experts in medicine, its benefits and risks.- Do not by yourself interrupt the period of treatment prescribed for you.- Do not repeat the same prescription without consulting your doctor.
	KEEP MEDICAMENTS OUT OF REACH OF CHILDREN (Council of Arab Health Ministers) (Arab Pharmacists Association)

Manufactured by:

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