

# PRECOBAL (Capsules)

## Pregabalin + Mecobalamin + Alpha Lipoic acid

**Composition:** Each hard gelatin capsule contains:

Pregabalin ..... 75 mg.

Mecobalamin.....0.75 mg.

Alpha-lipoic Acid.....100 mg.

**Excipients:** Lactose monohydrate, Talc, Corn starch.

### Pharmacodynamics:

**Pregabalin:** Pregabalin binds with high affinity to the alpha2-delta site (an auxiliary subunit of voltage-gated calcium channels) in central nervous system tissues.

**Mecobalamin:** Mecobalamin is a cofactor in the enzyme methionine synthase, which functions to transfer methyl groups for theregeneration of methionine from homocysteine.

**Alpha-lipoic acid:** Alpha-lipoic acid scavenges superoxide radicals and hydroxyl radicals and prevents lipid peroxidation. Oxygen-derived free radicals produced during biological activation of drugs damage red blood cells, causing aging and haemolysis. It also improves insulin action of skeletal muscle glucose transport and metabolism in human and animal models of insulin resistance.

### Pharmacokinetics:

#### Absorption:

Pregabalin: Following oral administration of pregabalin under fasting conditions, peak plasma concentrations occur within 1.5 hours. Pregabalin oral bioavailability is  $\geq 90\%$  and is independent of dose. The rate of pregabalin absorption is decreased when given with food, resulting in a decrease in  $C_{max}$  of approximately 25 – 30% and an increase in time at peak concentrations ( $T_{max}$ ) to approximately 3 hours. However, administration of pregabalin with food has no clinically relevant effect on the total absorption of pregabalin. Therefore, pregabalin can be taken with or without food. Mecobalamin: Evidence indicates mecobalamin is utilized more efficiently than cyanocobalamin to increase levels of one of the coenzyme forms of vitamin B12. Experiments have demonstrated similar absorption of mecobalamin following oral administration.

Alpha-lipoic acid: Human pharmacokinetic studies have found that alpha-lipoic acid possesses an extremely short plasma half-life of about 30 minutes after both oral and intravenous administration. Oral lipoic acid is absorbed rapidly and the maximum plasma concentration is reached within 30-60 minutes for doses of up to 600 mg. The absolute bioavailability after a single oral dose of 200 mg is approximately 30%.

#### Distribution:

Pregabalin: Pregabalin does not bind to plasma proteins. The apparent volume of distribution of pregabalin following oral administration is approximately 0.5 L/kg.

Mecobalamin: The quantity of cobalamin detected following a small oral dose of mecobalamin is similar to the amount following administration of cyanocobalamin; but significantly more cobalamin accumulates in liver tissue following administration of mecobalamin.

Alpha-lipoic acid: Even after repeated oral administration of lipoic acid, it appears that accumulation in plasma is not achieved. Presumably, this reflects the short plasma half-life and extensive presystemic elimination, which is thought to be primarily hepatic.

#### Metabolism and Excretion:

Pregabalin: Pregabalin undergoes negligible metabolism in humans. Following a dose of radiolabeled pregabalin, approximately 90% of the administered dose was recovered in the urine as unchanged pregabalin. The N-methylated derivative of pregabalin, the major metabolite of pregabalin found in urine, accounted for 0.9% of the dose. Pregabalin is eliminated from the systemic circulation primarily by renal excretion as unchanged drug, with a mean elimination half-life of 6.3 hours in subjects with normal renal function. Mean renal clearance was estimated to be 67.0 to 80.9 mL/min in young healthy subjects. Because pregabalin is not bound to plasma proteins this clearance rate indicates that renal tubular reabsorption is involved. Pregabalin elimination is nearly proportional to creatinine clearance (CL<sub>Cr</sub>).

Mecobalamin: Human urinary excretion of mecobalamin is about one-third that of a similar dose of cyanocobalamin, indicating substantially greater tissue retention. Approximately, 40–90% of the cumulative amount of total cobalamin is excreted within the first 8 hours in the urine.

Alpha-lipoic acid: Following oral lipoic acid administration, a maximum plasma level is quickly reached, but it falls just as quickly to a level insufficient to impact insulin sensitivity or glucose control. All the metabolites possess anti-oxidant activity.

#### Special Populations:

**Geriatric:** Oral clearance of pregabalin tended to decrease with increasing age. This decrease in pregabalin oral clearance is consistent with age-related decreases in CL<sub>Cr</sub>. Reduction of pregabalin dose may be required in patients who have age-related compromised renal function.

**Renal Impairment and Haemodialysis:** Renal clearance of pregabalin is nearly proportional to CL<sub>Cr</sub>. Dosage reduction in patients with renal dysfunction is necessary. Pregabalin is effectively removed from plasma by haemodialysis. Following a 4-hour haemodialysis treatment, plasma pregabalin concentrations are reduced by approximately 50%. For patients on haemodialysis, dosing must be modified.

**Pediatrics:** Pharmacokinetics of pregabalin and mecobalamin has not been adequately studied in paediatric patients. Also, children and adolescents must not be treated with alpha-lipoic acid as there is insufficient experience with this age group.

**Indication:** It is indicated for management of neuropathic pain associated with diabetic peripheral neuropathy.

**Contraindications:** Patients who are hypersensitive to pregabalin or any of the components of this product. Angio-oedema and hypersensitivity reactions have occurred in patients receiving pregabalin therapy.

#### Warnings and Precautions:

**Angioedema:** There have been reports of angioedema in patients during initial and chronic treatment with pregabalin. Specific symptoms included swelling of the face, mouth (tongue, lips, and gums), and neck (throat and larynx). There were reports of life-threatening angioedema with respiratory compromise requiring emergency treatment, treatment should be discontinued immediately in patients with these symptoms.

Caution should be exercised when prescribing the drug to patients who have had a previous episode of angioedema. In addition, patients who are taking other drugs associated with angioedema (e.g. angiotensin-converting enzyme inhibitors) may be at increased risk of developing angioedema.

**Hypersensitivity:** There have been reports of hypersensitivity in patients shortly after initiation of treatment with pregabalin. Adverse reactions included skin redness, blisters, hives, rash, dyspnea, and wheezing. THE DRUG should be discontinued immediately in patients with these symptoms.

**Withdrawal of Anti-Epileptic Drugs:** As with all anti-epileptic drugs (AEDs), pregabalin should be withdrawn gradually to minimize the potential of increased seizure frequency in patients with seizure disorders. If THE DRUG is discontinued, it should be tapered gradually over a minimum of 1 week.

**Suicidal Behavior and Ideation:** AEDs, including pregabalin, increase the risk of suicidal thoughts or behavior in patients taking these drugs for any indication. Patients treated with any AED for any indication should be monitored for the emergence or worsening of depression, suicidal thoughts or behavior, and/or any unusual changes in mood or behavior.

Anyone considering prescribing pregabalin or any other AED must balance the risk of suicidal thoughts or behavior with the risk of untreated illness. Epilepsy and many other illnesses for which AEDs are prescribed are themselves associated with morbidity and mortality and an increased risk of suicidal thoughts and behavior. Should suicidal thoughts and behavior emerge during treatment, the prescriber needs to consider whether the emergence of these symptoms in any given patient may be related to the illness being treated.

Patients, their caregivers, and families should be informed that AEDs increase the risk of suicidal thoughts and behavior and should be advised of the need to be alert for the emergence or worsening of the signs and symptoms of depression, any unusual changes in mood or behavior, or the emergence of suicidal thoughts, behavior, or thoughts about self-harm. Behaviors of concern should be reported immediately to healthcare providers.

**Peripheral Oedema:** Pregabalin treatment may cause peripheral oedema. In short-term trials of patients without clinically significant heart or peripheral vascular disease, there was no apparent association between peripheral oedema and cardiovascular complications such as hypertension or congestive heart failure. Peripheral oedema was not associated with laboratory changes suggestive of deterioration in renal or hepatic function.

Higher frequencies of weight gain and peripheral oedema were observed in patients taking both pregabalin and a thiazolidinedione antidiabetic agent compared to patients taking either drug alone. As the thiazolidinedione class of antidiabetic drugs can cause weight gain and/or fluid retention, possibly exacerbating or leading to heart failure, care should be taken when co-administering pregabalin and these agents.

Because there are limited data on congestive heart failure patients with New York Heart Association (NYHA) Class III or IV cardiac status, THE DRUG should be used with caution in these patients.

**Dizziness and Somnolence:** Pregabalin may cause dizziness and somnolence. Patients should be informed that pregabalin-related dizziness and somnolence may impair their ability to perform tasks such as driving or operating machinery.

In the pregabalin controlled trials, both dizziness and somnolence was experienced more in the pregabalin group compared to placebo. Dizziness and somnolence generally began shortly after the initiation of pregabalin therapy and occurred more frequently at higher doses. Dizziness and somnolence were the adverse reactions most frequently leading to withdrawal.

**Weight Gain:** Pregabalin treatment may cause weight gain. In pregabalin controlled clinical trials, pregabalin-associated weight gain was related to dose and duration of exposure, but did not appear to be associated with baseline body mass index, gender, or age. Weight gain was not limited to patients with oedema.

Although weight gain was not associated with clinically important changes in blood pressure in short-term controlled studies, the long-term cardiovascular effects of pregabalin-associated weight gain are unknown.

Among diabetes patients, pregabalin was associated with higher weight gain as compared to placebo treated patients. However, the effects of this pregabalin-associated weight gain on glycaemic control have not been systematically assessed. In controlled and longer-term open label clinical trials with diabetes patients, pregabalin treatment did not appear to be associated with loss of glycaemic control (as measured by HbA1c).

**Ophthalmological Effects:** In controlled studies, a higher proportion of patients treated with pregabalin reported blurred vision than did patient-treated with placebo, which resolved in a majority of cases with continued dosing. Few patients experienced reduction in visual acuity and changes in visual field and funduscopy. Less than 1% of patients discontinued pregabalin treatment due to vision-related events (primarily, blurred vision).

Although the clinical significance of the ophthalmologic findings is unknown, patients should be informed that if changes in vision occur, they should notify their physician. If visual disturbance persists, further assessment should be considered.

#### Creatine Kinase Elevations:

Pregabalin treatment was associated with creatine kinase elevations. The relationship between the myopathy events and pregabalin is not completely understood because the cases had documented factors that may have caused or contributed to these events. Patients should be instructed to promptly report unexplained muscle pain, tenderness, or weakness, particularly if these muscle symptoms are accompanied by malaise or fever. THE DRUG treatment should be discontinued if myopathy is diagnosed or suspected or if markedly elevated creatine kinase levels occur.

**Decreased Platelet Count:** Pregabalin treatment was associated with a decrease in platelet count. Pregabalin was not associated with an increase in bleeding-related adverse reactions.

**Diabetes Patients:** In accordance with current clinical practice, some diabetes patients who gain weight on pregabalin treatment may need to adjust hypoglycemic medicinal products.

**Congestive Heart Failure:** There have been reports of congestive heart failure in some patients receiving pregabalin. These reactions are mostly seen in elderly cardiovascular compromised patients during pregabalin treatment for a neuropathic indication. THE DRUG should be used with caution in these patients. Discontinuation may resolve the reaction.

**Reduced Lower Gastrointestinal Tract Function:** There are reports of events related to reduced lower gastrointestinal tract function (e.g., intestinal obstruction, paralytic ileus, constipation) when pregabalin was co-administered with medications that have the potential to produce constipation, such as opioid analgesics. When THE DRUG and opioids will be used in combination, measures to prevent constipation may be considered (especially in female patients and the elderly).

**Encephalopathy:** Cases of encephalopathy have been reported with the use of pregabalin, mostly in patients with underlying conditions that may precipitate encephalopathy.

**Abrupt or Rapid Discontinuation:** Following abrupt or rapid discontinuation of pregabalin, some patients reported symptoms including insomnia, nausea, headache, anxiety, hyperhidrosis, and diarrhea. THE DRUG should be tapered gradually over a minimum of 1 week rather than discontinued abruptly.

**Effects on Ability to Drive and Use Machines:** Pregabalin may have minor or moderate influence on the ability to drive and use machines. Pregabalin may cause dizziness and somnolence and, therefore, may influence the ability to drive or use machines. Patients are advised not to drive, operate complex machinery or engage in other potentially hazardous activities until it is known whether this medicinal product affects their ability to perform these activities.

**Drug Interactions:** Since pregabalin is predominantly excreted unchanged in the urine, undergoes negligible metabolism in humans (< 2% of a dose recovered in urine as metabolites), and does not bind to plasma proteins, its pharmacokinetics are unlikely to be affected by other agents through metabolic interactions or protein binding displacement. In vitro and in vivo studies showed that pregabalin is unlikely to be involved in significant pharmacokinetic drug interactions.

**Antidiabetic Agents:** Additive hypoglycemic effects may occur with concomitant use of anti diabetic agents and alpha-lipoic acid. Close monitoring of blood sugar is recommended when starting with therapy with alpha-lipoic acid.

**Cisplatin:** Alpha-lipoic acid antagonizes the action of cisplatin and may result in decreased cisplatin effectiveness.

**Metal-containing Products:** Alpha-lipoic acid readily chemically reacts with metals (metal chelator) and should, therefore, not be administered together with metal containing products (e.g. iron preparations, magnesium preparations and milk products due to their calcium content) because it may neutralize their effect. Some difference in time should be kept while administering this combination with iron and/or magnesium preparations.

**Renal Impairment:** Cases of renal failure have been reported and in some cases discontinuation of pregabalin did show reversibility of this adverse reaction. Pregabalin dosage adjustment should be considered in cases of renal impairment.

**Pregnancy (Category C):** Increased incidences of foetal structural abnormalities and other manifestations of developmental toxicity, including lethality, growth retardation and nervous and reproductive system functional impairment, were observed in the offspring of rats and rabbits given pregabalin during pregnancy at doses that produced plasma pregabalin exposures (AUC)  $\geq 5$  times human exposure at the maximum recommended dose of 600 mg/day.

There are no adequate and well-controlled studies for the use of pregabalin in pregnant women. No USFDA rating is available for alpha-lipoic acid and mecobalamin. Pregabalin should be used during pregnancy only if the potential benefit justifies the potential risk to the foetus.

**Lactation:** It is not known if pregabalin is excreted in human milk; it is, however, present in the milk of rats.

Because many drugs are excreted in human milk, and because of the potential for tumorigenicity shown for pregabalin in animal studies, a decision should be made whether to discontinue nursing or to discontinue the combination, taking into account the importance of the drug to the mother.

**Pediatric Use:** Safety and effectiveness of any of the components of this product in paediatric patients have not been established.

**Geriatric Use:** No overall differences in safety and efficacy were observed between patients  $\geq 75$  years of age and younger patients. Because pregabalin is eliminated primarily by renal excretion, the dose should be adjusted for elderly patients with renal impairment.

**Drug Abuse and Dependence:** Pregabalin is a Schedule V controlled substance. Pregabalin is not known to be active at receptor sites associated with drugs of abuse.

As with any CNS active drug, physicians should carefully evaluate patients for history of drug abuse and observe them for signs of pregabalin misuse or abuse (e.g. development of tolerance, dose escalation, and drug-seeking behaviour).

**Dependence:** In clinical studies, following abrupt or rapid discontinuation of pregabalin, some patients reported symptoms including insomnia, nausea, headache or diarrhea, consistent with physical dependence. In addition to these reported symptoms there have also been reported cases of anxiety and hyperhidrosis.

**Undesirable Effects:** The adverse reactions most frequently leading to discontinuation were dizziness and somnolence. Other adverse reactions that led to discontinuation from controlled trials more frequently in the pregabalin group compared to the placebo group were ataxia, confusion, asthenia, thinking abnormal, blurred vision, incoordination, and peripheral oedema.

**Body as a Whole:** Asthenia, Accidental injury, Back pain, Chest pain, Face oedema, Dry mouth, Constipation, Flatulence, Metabolic and Nutritional Disorders, Peripheral oedema, Weight gain, Oedema, Hypoglycaemia, Neuropathy, Ataxia, Tremor, Abnormal gait, Amnesia, Dyspnoea, Blurry vision, Abnormal vision, Nervousness.

#### Pregabalin:

##### Body as a Whole:

Frequent: Abdominal pain, allergic reaction, fever, increase in weight.

##### Digestive System:

Frequent: Gastroenteritis, increased appetite, vomiting, nausea, constipation, diarrhea, flatulence, abdominal distension, dry mouth.

##### Haemic and Lymphatic System:

Frequent: Echymosis.

##### Musculoskeletal and Connective Tissue Disorders:

Frequent: Arthralgia, leg cramps, myalgia, myasthenia, back pain, pain in limb, cervical spasm.

##### Nervous System and Psychiatric Disorders:

Frequent: Anxiety, depersonalisation, hypertonia, hypoesthesia, libido decreased, nystagmus, paraesthesia, sedation, stupor, twitching, dizziness, somnolence, headache, ataxia, coordination abnormal, tremor, dysarthria, amnesia, memory impairment, disturbance in attention, lethargy, euphoric mood, confusion, irritability, disorientation, insomnia, balance disorder.

##### Skin and Appendages:

Frequent: Pruritus

##### Special Senses:

Frequent: Conjunctivitis, diplopia, otitis media, tinnitus, vision blurred.

##### Urogenital System and Breast Disorders:

Frequent: Anorgasmia, impotence, urinary frequency, urinary incontinence.

##### Infections and Infestations:

Frequent: Nasopharyngitis.



General Disorders:

Frequent: Oedema, peripheral oedema, gait abnormal, fall, feeling drunk, feeling abnormal, fatigue.

**Withdrawal Symptoms:** After discontinuation of short-term and long-term treatment with pregabalin withdrawal symptoms have been observed in some patients. The following reactions have been mentioned: insomnia, headache, nausea, anxiety, diarrhea, flu syndrome, convulsions, nervousness, depression, pain, hyperhidrosis and dizziness, suggestive of physical dependence. The patient should be informed about this at the start of the treatment. Concerning discontinuation of long-term treatment of pregabalin, data suggest that the incidence and severity of withdrawal symptoms may be dose related.

#### Mecobalamin:

Gastrointestinal: Anorexia, nausea, vomiting and diarrhea were observed with a frequency of < 5%.

Anaphylactoid Reaction: Anaphylactoid reaction such as decrease in blood pressure or dyspnea, may occur with mecobalamin. Patients should be carefully observed. In the event of such symptoms, treatment should be discontinued immediately and appropriate measures taken.

#### Alpha-lipoic Acid:

Common: Vertigo, Dizziness.

**Dosage and Administration:** It is given orally with or without food.

Dosing should begin at 2 capsules per day divided in two doses and may be increased within 1 week based on efficacy and tolerability to a total of 4 capsules per day given in divided doses (2-3 times/day). Because pregabalin is eliminated primarily by renal excretion, the dose should be adjusted for patients with reduced renal function.

Although pregabalin was also studied at 600 mg/day, there is no evidence that this dose confers additional significant benefit and this dose was less well tolerated. In view of the dose-dependent adverse effects, treatment with doses above 300 mg/day of pregabalin are not recommended. The maximum recommended dose is 4 capsules per day in patients with CL<sub>Cr</sub> of at least 60 mL/min. When discontinuing the drug, taper gradually over a minimum of one week.

**Patients with Renal Impairment:** In view of dose-dependent adverse reactions and since pregabalin is eliminated primarily by renal excretion, the dose should be adjusted in patients with reduced renal function. Dosage adjustment in patients with renal impairment should be based on CL<sub>Cr</sub>, as indicated in Table 1 below. Creatinine clearance in mL/min may be estimated from serum creatinine (mg/dL) determination using the Cockcroft and Gault equation:

Table 1: Pregabalin Dosage Adjustment Based on Renal Function:

Creatinine Clearance (CL <sub>Cr</sub> ) (mL/min)	Total Pregabalin Daily Dose (mg/day)				Dose Regimen
$\geq 60$	600	450	300	150	b.i.d. or t.i.d.
30 – 60	300	225	150	75	b.i.d. or t.i.d.
15 – 30	150	100 – 150	75	25 – 50	q.d. or b.i.d.
< 15	75	50 – 75	25 – 50	25	q.d.

In addition to the daily dose adjustment, a supplemental dose should be given immediately following every 4-hour haemodialysis treatment as mentioned below: Supplementary Dosage Following Haemodialysis (mg):

Patients on the 25 mg q.d. regimen	Take one supplemental dose of 25 mg or 50 mg
Patients on the 25 – 50 mg q.d. regimen	Take one supplemental dose of 50 mg or 75 mg
Patients on the 50 – 75 mg q.d. regimen	Take one supplemental dose of 75 mg or 100 mg
Patients on the 75 mg q.d. regimen	Take one supplemental dose of 100 mg or 150 mg

**Overdose:** There is limited experience with overdose of pregabalin. The highest reported accidental overdose of pregabalin during the clinical development program was 8,000 mg and there were no notable clinical consequences.

**Treatment or Management of Overdose:** There is no specific antidote for overdose with pregabalin. If indicated, elimination of unabsorbed drug may be attempted by emesis or gastric lavage; usual precautions should be observed to maintain the airway. General supportive care of the patient is indicated including monitoring of vital signs and observation of the clinical status of the patient.

Although haemodialysis has not been performed in the few known cases of overdose, it may be indicated by the patient's clinical state or in patients with significant renal impairment. Standard haemodialysis procedures result in significant clearance of pregabalin (approximately 50% in 4 hours).

Mecobalamin has excellent tolerability and no known toxicity.

With high doses of alpha-lipoic acid, gastrointestinal symptoms, including abdominal pain, nausea, and vomiting, as well as diarrhea, and anaphylactic reactions, including laryngospasm, were reported. Also, allergic reactions affecting the skin, including rashes, hives and itching, have been reported.

**Packaging:** 2 blisters, each contains 10 capsules/carton box.

**Storage Conditions:** Store at room temperature, below 25° C, away from light and moisture.

TPP190000	THIS IS A MEDICAMENT
- 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.	
<b>KEEP MEDICAMENTS OUT OF REACH OF CHILDREN</b> (Council of Arab Health Ministers) (Arab Pharmacists Association)	

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