

SUMMARY OF PRODUCT CHARACTERISTICS (SPC)

1. NAME OF THE MEDICINAL PRODUCT

PHENOCAR TABLETS (Phenobarbital 30 mg Tablet)

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each film coated tablet contains 30 mg phenobarbital BP

Excipient(s) with known effect:

Each tablet contains 71.41 mg lactose.

Colour: Sunset Yellow and Titanium Dioxide

For the full list of excipients, see section 6.

3. PHARMACEUTICAL FORM

Film –coated tablet

Orange coloured round biconvex film coated tablet plain on both the side.

4. CLINICAL PARTICULARS

4.1 THERAPEUTIC INDICATIONS

Phenobarbital is recommended for all forms of epilepsy

4.2 POSOLOGY AND METHOD OF ADMINISTRATION

Adults: 60-180mg at night

Child: 5-8mg/kg daily

Elderly: Phenobarbital clearance diminishes in the elderly. Therefore the dose of phenobarbital is usually lower in elderly patients.

The dose of phenobarbital should be adjusted to meet the needs of individual patients. This usually requires plasma concentration of 15 to 40 micrograms/ml (65 to 170 micromoles/liter)

4.3 CONTRAINDICATION

Phenobarbital should not be given to patients with:

- Known hypersensitivity to phenobarbital, other barbiturates or other ingredients in the tablet
- Acute intermittent porphyria
- Severe respiratory depression
- Severe renal or hepatic impairment.

4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE

Suicidal ideation and behaviour have been reported in patients treated with anti-epileptic agents in several indications. A meta-analysis of randomised placebo controlled trials of anti-epileptic drugs has also

shown a small increased risk of suicidal ideation and behaviour. The mechanism of this risk is not known and the available data do not exclude the possibility of an increased risk for phenobarbital.

Therefore patients should be monitored for signs of suicidal ideation and behaviours and appropriate treatment should be considered. Patients (and caregivers of patients) should be advised to seek medical advice should signs of suicidal ideation or behaviour emerge.

Steven-Johnson syndrome and toxic epidermal necrolysis

Life-threatening cutaneous reactions Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) have been reported with the use of phenobarbital. Patients should be advised of the signs and symptoms and monitored closely for skin reactions. The highest risk for occurrence of SJS or TEN is within the first weeks of treatment.

If symptoms or signs of SJS or TEN (e.g. progressive skin rash often with blisters or mucosal lesions) are present, Phenobarbital treatment should be discontinued. The best results in managing SJS and TEN come from early diagnosis and immediate discontinuation of any suspect drug. Early withdrawal is associated with a better prognosis.

If the patient has developed SJS or TEN with the use of phenobarbital, phenobarbital must not be re-started in this patient at any time.

4.5 INTERACTION WITH OTHER MEDICINAL PRODUCTS AND OTHER FORMS OF INTERACTION

Effects on Phenobarbital	Effects of phenobarbital on other medicines
<ul style="list-style-type: none"> • Alcohol – concurrent administration with alcohol may lead to an additive CNS depressant effect. This is likely with concurrent administration with other CNS depressants. • Antidepressants – including MAOIs, SSRIs and tricyclics may antagonise the antiepileptic activity of phenobarbital by lowering the convulsive threshold • Antiepileptics – Phenobarbital plasma concentrations increased by phenytoin, oxcarbazepine and sodium valproate. Vigabatrin possibly decreases phenobarbital plasma concentrations. • Antipsychotics – concurrent use of chlorpromazine and thioridazine with phenobarbital can reduce the serum levels of either drug. • Folic acid – if folic acid supplements 	<p>Phenobarbital increases the rate of metabolism reducing serum concentrations of the following drugs:</p> <ul style="list-style-type: none"> • Anti-arrhythmics – disopyramide and quinidine loss of arrhythmia control is possible. Plasma levels of anti-arrhythmics should be monitored, if phenobarbital is added or withdrawn. Changes in dosage may be necessary. • Antibacterials – chloramphenicol, doxycycline, metronidazole and rifampicin. Avoid concomitant use of telithromycin during and for 2 weeks after Phenobarbital. • Anticoagulants. • Antidepressants – paroxetine, mianserin and tricyclic antidepressants. • Antiepileptics – carbamazepine, lamotrigine, tiagabine, zonisamide, primidone and possibly ethosuxamide.

<p>are given to treat folate deficiency, which can be caused by the use of phenobarbital, the serum phenobarbital levels may fall, leading to decreased seizure control in some patients (see section 4.6).</p> <ul style="list-style-type: none"> • Memantine – the effect of Phenobarbital is possibly reduced. • Methylphenidate – plasma concentration of Phenobarbital is possibly increased. • St John's wort (<i>Hypericum perforatum</i>) – the effect of phenobarbital can be reduced by concomitant use of the herbal remedy St John's wort. 	<ul style="list-style-type: none"> • Antifungals – the antifungal effects of griseofulvin can be reduced or even abolished by concurrent use. Phenobarbital possibly reduces plasma concentrations of itraconazole or posaconazole. Avoid concomitant use of voriconazole. • Antipsychotics – phenobarbital possibly reduces concentration of aripiprazole. • Antivirals – phenobarbital possibly reduces plasma levels of abacavir, amprenavir, darunavir, lopinavir, indinavir, nelfinavir, saquinavir. • Anxiolytics and Hypnotics – clonazepam. • Aprepitant – phenobarbital possibly reduces plasma concentration of aprepitant. • Beta-blockers – metoprolol, timolol and possibly propranolol. • Calcium channel blockers – phenobarbital causes reduced levels of felodipine, isradipine, diltiazem verapamil, nimodipine and nifedipine and an increase in dosage may be required. • Cardiac Glycosides – blood levels of digitoxin can be halved by concurrent use. • Ciclosporin or tacrolimus • Corticosteroids • Cytotoxics – phenobarbital possibly reduces the plasma levels of etoposide or irinotecan. • Diuretics – concomitant use with eplerenone should be avoided. • Haloperidol- serum levels are approximately halved by concurrent use with phenobarbital. • Hormone Antagonists – gestrinone and possibly toremifene. • Methadone – levels can be reduced by concurrent use of phenobarbital and withdrawal symptoms have been reported in patients maintained on methadone when phenobarbital has been added. Increases in the methadone dosage may be necessary.
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Phenobarbital may interfere with some laboratory tests including metyrapone test, phenolamine tests and serum bilirubin estimation

4.6 Fertility, pregnancy and lactation

Pregnancy

Phenobarbital therapy in epileptic pregnant women presents a risk to the fetus in terms of major and minor congenital defects such as congenital craniofacial, digital abnormalities and, less commonly, cleft lip and palate. The risk of teratogenic effects developing appears to be greater if more than one antiepileptic drug is administered. The risk to the mother, however is greater if phenobarbital is withheld and seizure control is lost. The risk: benefit balance, in this case, favours continued use of the drug during pregnancy at the lowest possible level to control seizures. Patients taking Phenobarbital should be adequately supplemented with folic acid before conception and during pregnancy (see section 4.5). Folic acid supplementation during pregnancy can help to reduce the risk of neural defects to the infant. Phenobarbital readily crosses the placenta following oral administration and is distributed throughout fetal tissue, the highest concentrations being found in the placenta, fetal liver and brain. Adverse effects on neurobehavioral development have also been reported. Haemorrhage at birth and addiction are also a risk. Prophylactic treatment with vitamin K1 for the mother before delivery (as well as the neonate) is recommended, the neonate should be monitored for signs of bleeding.

Breast-feeding

Phenobarbitone is excreted in breast milk and there is a small risk of neonatal sedation. Breast feeding is therefore not advisable.

4.7 Effects on ability to drive and use machines .

Phenobarbital may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. Patients should be advised to make sure they are not affected before undertaking any potentially hazardous tasks.

4.8 Undesirable effects

“For this product there is no modern clinical documentation which can be used as support for determining the frequency of adverse reactions”.

Blood & lymphatic system disorders	Frequency Unknown	megaloblastic anaemia (due to folate deficiency), agranulocytosis, thrombocytopenia
Metabolism & Nutrition disorders	Frequency Unknown	osteomalacia, rickets There have been reports of decreased bone mineral density, osteopenia, osteoporosis and fractures in patients on long-term therapy with phenobarbital. The mechanism by which phenobarbital affects bone metabolism has not been identified.
Psychiatric disorders	Frequency Unknown	Paradoxical reaction (unusual excitement), hallucinations, restlessness and confusion in the elderly, mental depression, memory and cognitive impairment, drowsiness, lethargy,
Nervous system disorders	Frequency Unknown	Hyperactivity, ataxia, nystagmus, behavioural disturbances in children
Cardiac disorders	Frequency Unknown	Hypotension
Respiratory, thoracic & mediastinal disorders	Frequency Unknown	Respiratory depression
Hepatobiliary disorders	Frequency Unknown	Hepatitis, cholestasis
Skin and subcutaneous tissue disorders	Frequency Unknown	Allergic skin reactions (maculopapular, morbilliform or scarlatiniform rashes), other skin reactions such as exfoliative dermatitis, erythema multiforme
	Very Rare	Serious cutaneous adverse reaction (SCARs): Toxic epidermal necrosis

		(TEN) or Stevens-Johnson syndrome (SJS) have been reported (see section 4.4)
General & administration site disorders	Frequency Unknown	Antiepileptic hypersensitivity syndrome (features include fever, rash, lymphadenopathy, lymphocytosis, eosinophilia, haematological abnormalities, hepatic and other organ involvement including renal and pulmonary systems which may become life threatening).

4.9 Overdose

Toxicity varies between patients; tolerance will develop with chronic use. Features of poisoning are to be expected after ingestion of 1g in adults.

Features:

Drowsiness, dysarthria, ataxia, nystagmus and disinhibition. There may also be coma, cardiovascular collapse, cardiac arrest, hypotension, hypotonia, hyporeflexia, hypothermia, hypotension and respiratory depression. Barbiturates decrease gut motility, which may lead to slow onset and worsening of symptoms or cyclical improvement and worsening of symptoms.

Management: Consider activated charcoal (50g for an adult, 10-15g for a child under 5 years) if more than 10mg/kg body weight of phenobarbital has been ingested within 1 hour, provided the airway can be protected. Repeat dose activated charcoal is the best method of enhancing elimination of phenobarbital in symptomatic patients. In severe hypotension dopamine or dobutamine can be used. Treat rhabdomyolysis with urinary alkalinisation. Haemodialysis or haemofiltration may be required for cases of acute renal or severe hyperkalaemia. Charcoal haemoperfusion is the treatment of choice for the majority of patients with severe barbiturate poisoning who fail to improve, or who deteriorate despite good supportive care.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic classification :Antiepileptics; Barbiturates and Derivatives – phenobarbital

ATC code : N03A A02

Phenobarbital is a long-acting barbiturate, which because of its depressant effect on the motor cortex, is used in the treatment of epilepsy. Phenobarbital has a widespread depressant action on cerebral function. It has sedative effects and has some protective action against all varieties of human partial and generalised epilepsy, with the exception of absence seizures. Phenobarbital is also effective in preventing seizures in the corresponding experimental animal models of epilepsy. In different studies phenobarbital appears to have had inconsistent effects in suppressing experimental epileptic foci, and epileptic after-discharges, but it inhibits synaptic transmission, at least in the spinal cord. The drug's probable biochemical mechanism of action is through prolonging the opening time of Cl⁻ ion channels in postsynaptic neuronal membranes. This effect causes membrane hyperpolarisation and thus impairs nerve impulse propagation. Phenobarbital also decreases intraneuronal Na⁺ concentrations, and inhibits Ca²⁺ influx into depolarised synaptosomes. It raises brain serotonin levels, and inhibits noradrenaline (norepinephrine) reuptake into synaptosomes. These additional biochemical actions may contribute towards the anticonvulsant effects of the drug.

5.2 Pharmacokinetic properties

Absorption - Phenobarbital is readily absorbed from the gastro-intestinal tract, although it is relatively lipid – insoluble; peak concentrations are reached in about 2 hours after oral administration.

Distribution – Phenobarbital is about 45 to 60% bound to plasma proteins. Phenobarbital crosses the placental barrier and is distributed into breast milk.

Metabolism – The plasma half life is about 75 to 120 hours in adults but is greatly prolonged in neonates, and shorter (about 21 to 75 hours) in children.

There is considerable interindividual variation in phenobarbital kinetics.

Phenobarbital is only partly metabolised in the liver.

Elimination - About 25% of a dose is excreted in the urine unchanged at normal urinary pH.

5.3 Preclinical safety data

There are no pre-clinical safety data of relevance to the prescriber which are additional to that already included in other sections of the SPC

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Lactose
Microcrystalline Cellulose
Maize Starch
Povidone K-30
Sodium Methyl
Hydroxybenzoate
Sodium Propyl
Hydroxybenzoate
Magnesium Stearate
Purified Talc
Hypromellose 15 cps
Titanium Dioxide
Sunset Yellow Lake
Macrogol – 400
Isopropyl Alcohol
Dichloromethane

6.2 Incompatibilities

None stated.

6.3 Shelf life

36 Months

6.4 Special precautions for storage

Keep out of the reach of children.

Store in a cool, dry place.

6.5 Nature and contents of container

10 tablets to be packed in aluminum strip such 10 strip in one carton with Pack insert .

6.6 Special precautions for disposal

None.

7 MARKETING AUTHORISATION HOLDER

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22/05/2018

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03/07/2023

11REFERENCES