TERBET Tablet

1.Generic name
Terbutaline Sulphate with Bromhexine Hydrochloride tablet

2.Qualitative or Quantitative composition
Each uncoated tablet contains:
Terbutaline Sulphate IP 2.5 mg
Bromhexine Hydrochloride IP 4 mg

3. Dosage form and strength
Oral solid dosage form (Tablet)
Strength – Terbutaline Sulphate IP 2.5 mg, Bromhexine Hydrochloride IP 4 mg

4.Clinical particulars

a. Therapeutic indications
- Bronchospasm and breathlessness due to asthma
- Reversible bronchospasm associated with bronchitis and emphysema
- Respiratory infection with productive cough

b. Posology and method of administration

Posology
For maintenance therapy or in moderate cases, the dosage schedule is one tablet thrice daily or as advised by the physician. In children the dosages should be determined in accordance with the body weight and severity of symptoms or as suggested by the physician.

Method of administration – Through mouth (Oral). Can be taken with or without food.

c. Contraindications
Hyperthyroidism, liver disease, angina, cardiac arrhythmias.
In addition, terbutaline sulfate is contraindicated in patients known to be hypersensitive to sympathomimetic amines or any component of this drug product.

d. Special warning and precautions
Hypertension, pregnancy, peptic ulceration.

e. Drug interaction
- The concomitant use of terbutaline sulfate with other sympathomimetic agents is not recommended, since the combined effect on the cardiovascular system may be deleterious to the patient.
- Monoamine 0xidase Inhibitors or Tricyclic Antidepressants: Terbutaline should be administered with extreme caution to patients being treated with monoamine oxidase (MAO) inhibitors or tricyclic antidepressants (TCADs), or within 2 weeks of discontinuation of such agents, since the action of terbutaline on the vascular system may be potentiated.
- Beta-Blockers: Beta-adrenergic receptor blocking agents not only block the pulmonary effect of beta-agonists, such as terbutaline sulfate injection, but may produce severe bronchospasm in asthmatic patients. Therefore, patients with asthma should not normally be treated with beta-blockers. However, under certain circumstances, e.g., as prophylaxis after myocardial infarction,

there may be no acceptable alternatives to the use of beta adrenergic blocking agents in patients with asthma. In this setting, cardioselective betablockers could be considered, although they should be administered with caution.

Studies in laboratory animals (rodents and dogs) have demonstrated the occurrence of cardiac arrhythmias and sudden death (with histological evidence of myocardial necrosis) when beta-agonists and methylxanthines are administered concurrently. The clinical significance of these findings is unknown.

f. Uses in special populations (e.g. pregnant women and lactating women)

This drug should be used during pregnancy and in lactating women only if the anticipated benefit outweighs the risk to the fetus or the nursing baby.

Terbutaline can be used in the elderly (> 65 years) population. In general, dosing in an elderly patient should be cautious, starting at the low end of the dosing range.

g. Effects on ability to drive and use machines

No such information available

h. Undesirable effect

Adverse reactions observed with terbutaline sulfate are similar to those commonly seen with other sympathomimetic amines. All of these reactions are generally transient in nature and usually do not require treatment. The frequency of these side effects appears to diminish with continued therapy.

i. Overdose

The expected symptoms with overdosage are those of excessive beta-adrenergic stimulation and/or occurrence or exaggeration of any of the symptoms listed under **ADVERSE REACTIONS**, e.g., seizures, angina, hypertension or hypotension, tachycardia with rates up to 200 beats per minute, arrhythmias, nervousness, headache, tremor, dry mouth, palpitation, nausea, dizziness, fatigue, malaise, and insomnia. Hypokalemia may also occur. There is no specific antidote. Treatment consists of discontinuation of terbutaline sulfate together with appropriate symptomatic therapy. The judicious use of a cardio selective beta-receptor blocker may be considered, bearing in mind that such medication can produce bronchospasm. There is insufficient evidence to determine if dialysis is beneficial for overdosage of terbutaline sulfate.

In the alert patient who has taken excessive oral medication, the stomach should be emptied by induced emesis followed by lavage. In the unconscious patient, the airway should be secured with a cuffed endotracheal tube before lavage, and emesis should not be induced. Instillation of activated charcoal slurry may help reduce absorption of terbutaline. Adequate respiratory exchange should be maintained, and cardiac and respiratory support provided as needed. The patient should be monitored until signs and symptoms of overdosage have subsided.

5. Pharmacological properties

a. Pharmacodynamics

Terbutaline sulphate

It is a direct-acting sympathomimetic with mainly beta-adrenergic activity. Its action is relatively selective for beta2 adrenergic receptors (beta2 agonist). This results in its bronchodilator action being more prominent than its effect on the heart. It contains resorcinol ring and thus is not a substrate for methylation by COMT (catechol-O-methyl transferase). It also improves ciliary function and diaphragmatic contraction, thereby helping in expectoration. The duration of action is 6-8 hours.

Bromhexine hydrochloride
It is a mucolytic expectorant and is often added to terbutaline group and etofylline group for greater therapeutic benefit. Liquefaction and expulsion of viscid tenacious sputum provides added and more effective relief from obstructive airway symptoms.

b. Pharmacokinetics

Terbutaline sulphate
Fasting bioavailability after oral doses is reported to be about 14 to 15% and is reduced by food. Terbutaline undergoes extensive first-pass metabolism by sulfate (and some glucuronide) conjugation in the liver and the gut wall. It is excreted in the urine and feces partly as the inactive sulfate conjugate and partly as unchanged terbutaline, the ratio depending upon the route by which it is given. The terminal half-life after single and multiple dosing is reported to be between 16 and 20 hours. There is some placental transfer. Trace amounts are distributed into breast milk.

Bromhexine hydrochloride
Bromhexine hydrochloride is rapidly absorbed from the gastrointestinal tract; peak plasma concentrations occur after about 1 hour. Bromhexine undergoes extensive first-pass metabolism in the liver: its oral bioavailability is stated to be only about 20%. It is widely distributed to body tissues. About 85 to 90% of a dose is excreted in the urine, mainly as inactive metabolites. The terminal elimination half-life is 13 to 40 hours. Bromhexine crosses the blood-brain barrier and small amounts cross the placenta.

c. Mechanism of action

Terbutaline Sulphate – It is a direct-acting sympathomimetic with mainly beta-adrenergic activity. Its action is relatively selective for beta2 adrenergic receptors (beta2 agonist) on the bronchial smooth muscle cells rather than beta1 adrenergic receptors in the myocardium. This results in its bronchodilation action being more prominent than its effect on the heart.

Bromhexine Hydrochloride – As a specific mucolytic expectorant, it is often added to terbutaline like drugs. Liquefaction and expulsion of viscid tenacious sputum provides added and more effective relief from obstructive airway symptoms

6. Product description: White flat circular tablet with STRASSENBURG engraved on upper face.

7. Pharmaceutical particulars

a. Incompatibility: Not reported

b. Shelf life: 36 months from the month of manufacturing.

c. Packaging information: 10 x 10's pack of amber color blister packs.

d. Storage: Store protected from light and moisture.

8. Patient counselling information

WARNING
TOCOLYSIS
Oral Terbutaline Sulphate has not been approved and should not be used for acute or maintenance tocolysis. In particular, Terbutaline sulphate should not be used for maintenance tocolysis in the outpatient or home setting. Serious adverse reactions, including death, have been reported after administration of terbutaline sulfate to pregnant women. In the mother, these adverse reactions include increased heart rate, transient hyperglycemia, hypokalemia, cardiac arrhythmias, pulmonary edema and myocardial ischemia. Increased fetal heart rate and neonatal hypoglycemia may occur as a result of maternal administration.

Deterioration of asthma
Asthma may deteriorate acutely over a period of hours or chronically over several days or longer. If the patient needs more doses of terbutaline sulfate than usual, this may be a marker of destabilization of asthma and requires re-evaluation of the patient and the treatment regimen, giving special consideration to the possible need for anti-inflammatory treatment, e.g., corticosteroids.

Use of anti-inflammatory agents
The use of beta-adrenergic agonist bronchodilators alone may not be adequate to control asthma in many patients. Early consideration should be given to adding steroidal anti-inflammatory agents, e.g., corticosteroids.

Cardiovascular effects
Terbutaline sulphate, like all other beta-adrenergic agonists, can produce a clinically significant cardiovascular effect in some patients as indicated by rising pulse rate, blood pressure, and/or other symptoms. Although such effects are uncommon after administration of Terbutaline sulphate at recommended doses, if they occur, the drug may need to be discontinued. In addition, beta-agonists have been reported to produce electrocardiogram (ECG) changes, such as flattening of the T wave, prolongation of the QTc interval, and ST segment depression. The clinical significance of these findings is unknown. Therefore, Terbutaline sulphate, like all sympathomimetic amines, should be used with caution in patients with cardiovascular disorders, especially coronary insufficiency, cardiac arrhythmias, and hypertension.

Seizures
There have been rare reports of seizures in patients receiving Terbutaline; seizures did not recur in these patients after the drug was discontinued.

9. Details of manufacturer: **Strassenburg Pharmaceuticals Ltd.**
D. H. Road, 24 Parganas (S), West Bengal - 743503

10. Details of license no.: **DL-1387-M**

TERBET FORTE Tablet

1.Generic name
Terbutaline Sulphate with Bromhexine hydrochloride tablet

2.Qualitative or Quantitative composition
Each uncoated tablet contains:
Terbutaline Sulphate IP 5 mg
Bromhexine Hydrochloride IP 8 mg
Color: Ponceau-4R

3. Dosage form and strength
Oral solid dosage form (Tablet)
Strength – Terbutaline Sulphate IP 5 mg, Bromhexine Hydrochloride IP 8 mg

4.Clinical particulars

a. Therapeutic indications
- Bronchospasm and breathlessness due to asthma
- Reversible bronchospasm associated with bronchitis and emphysema
- Respiratory infection with productive cough

b. Posology and method of administration

Posology
In acute case therapy should be initiated with TERBET FORTE tablets, with the dosage schedule of one tablet thrice daily or as advised by the physician. In children the dosages should be determined in accordance with the body weight and severity of symptoms or as suggested by the physician.

Method of administration – Through mouth (Oral). Can be taken with or without food.

c. Contraindications
Hyperthyroidism, liver disease, angina, cardiac arrhythmias.
In addition, terbutaline sulfate is contraindicated in patients known to be hypersensitive to sympathomimetic amines or any component of this drug product.

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Hypertension, pregnancy, peptic ulceration.

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Bromhexine Hydrochloride – As a specific mucolytic expectorant, it is often added to terbutaline like drugs. Liquefaction and expulsion of viscid tenacious sputum provides added and more effective relief from obstructive airway symptoms

6. Product description: Light pink flat circular tablet with STRASSENBURG engraved on upper face.

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