SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE MEDICINAL PRODUCT

Zedex Cough Syrup

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each 10 ml contains :

Bromhexine Hydrochloride BP	:	8 mg
Dextromethorphan Hydrobromide BP	:	10 mg
Ammonium Chloride BP	:	100 mg
Menthol BP	:	5 mg

3. PHARMACEUTICAL FORM

Liquid Oral-Cough Syrup

4. CLINICAL PARTICULARS

4.1 Therapeutic Indications

For the symptomatic treatment of irritating and hacking cough.

Cough associated with URTI, bronchitis, pulmonary congestion where retention of tenacious and viscid mucoid secretions is a problem.

4.2 Posology and method of administration

Adults : 2 teaspoonfuls 3-4 times a day.

Children
(6-12 years) : ½ - teaspoonful 3-4 times a day.

or

As directed by the physician.

4.3 Contra-indications

Dextromethorphan should not be used in patients receiving monoamine oxidase (MAO) inhibitors.

Bromhexine is contraindicated in pregnancy.

4.4 Special warnings and special precautions for use

Dextromethorphan should be used with caution in sedated patients, in the debilitated and in patients confined to the supine position.

Long term animal studies have not been performed to assess the carcinogenic potential of dextromethorphan. There is no animal or human data concerning the carcinogenic and mutagenic effect or impairment of fertility by these drugs.

Bromhexine

Anaphylactic reactions and severe cutaneous adverse reactions (SCARs), including erythema multiforme, Stevens-Johnson syndrome/toxic epidermal necrolysis and acute generalised exanthematous pustulosis, have been reported in patients receiving ambroxol. As ambroxol is a metabolite of bromhexine, the risk of anaphylactic and severe cutaneous reactions is considered to apply also to bromhexine. The risk of anaphylactic reactions and SCARs with ambroxol or bromhexine is low. Frequencies of these side effects are unknown. If symptoms or signs of a progressive skin rash (sometimes associated with blisters or mucosal lesions) are present, bromhexine treatment should be discontinued immediately and medical advice should be sought. Caution is advised when treating patients with haemoptysis because the constituent ingredient bromhexine can lead to rejection of fibrin clots and result in new bleeding

4.5 Pregnancy and lactation

It is not know whether dextromethorphan is excreted in human milk. Caution should be exercised when dextromethorphan is administered to a nursing woman.

4.6 Undesirable effects

Dextromethorphan hydrobromide occasionally causes slight drowsiness, dizziness and gastrointestinal disturbances. The drug is relatively well tolerated with minor and infrequent side effects. Rarely it causes nausea and epigastric discomfort. It is contraindicated in patients with peptic ulceration.

Bromhexine:

Gastrointestinal side effects may occur occasionally with bromhexine and a transient rise in serum aminotransferase values has been reported. Other reported adverse effects include headache, vertigo (dizziness), sweating and allergic reactions including anaphylactic reactions and severe cutaneous adverse reactions (SCARs).

4.7 Overdose

Dextromethorphan may produce central excitement and mental confusion Very high doses may produce respiratory depression. One case of toxic psychosis (hyperactivity, marked visual and auditory hallucination) after ingestion of a single dose of 20 tablets (300 mg of dextromethorphan has been reported.

Bromhexine treatment above 60 mg / day may cause gastric irritation.

Treatment of overdosage with dextromethorphan is essentially symptomatic and supportive. Only in cases of extreme overdosage or individual sensitivity do vital signs including respiration, pulse, blood pressure, temperature and ECG need to be monitored. Activated charcoal orally or by lavage may be given or sodium / magnesium sulfate orally can be used as a cathartic. Attention should be given to the re-establishment of adequate respiratory exchange through provision of a patient airway and institution of assisted or controlled ventilation. Diazepam may be used to control convulsion. Acidosis and electrolyte losses should be corrected.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacology

Dextromethorphan hydrobromide is a nonnarcotic cough suppressant. It acts on cough control in the medulla and raises the threshold of cough. Dextromethorphan has an antitussive activity equivalent to that of codeine. It lacks analgesic and addictive properties and in antitussive doses shows no effects on respiration, the cardiovascular system or the gastrointestinal tract. Dextromethorphan in therapeutic doses does not inhibit ciliary activity and its antitussive effect persists for only 5 to 6 hours.

Bromhexine hydrochloride is obtained from the plant Adhatoda vasica, Bromhexine creates an environment in the bronchial tree conductive to the removal of sticky mucous from the bronchioles, thus promoting expectoration without excessive straining.

Bromhexine hydrochloride and ammonium chloride maintain the integrity of the mucociliary blanket to bring out the secretion in normal physiological manner.

Ammonium chloride produces mild irritation of the mucus lining of the stomach and this gastro vagal reflex increases the respiratory tract fluid, relieving dryness and soreness of the respiratory passage.

Menthol acts as a demulcent and soothing agent.

5.2 Pharmacodynamics :

Dextromethrophan is an antitussive agent and unlike its isomer levorphanol, it has no analgesic or addictive properties. The drug acts centrally and elevates the threshold for coughing, it is about equal to codeine in depressing the cough reflex. In therapeutic dose dextromethorphan does not inhibit ciliary activity. Bromhexine increases the expectoration of sputum in bronchitis patients, increases the output of water into respiratory tract fluid and depolymerises the mucopolysaccharides in the mucous. It is also claimed to act on bronchial glands, to liberate lysosomal enzymes from the mucous secreting cells which digest the mucopolysaccharide fibers. Thus bromhexine is extremely useful in restoring the mucociliary equilibrium. Besides this, it has been attributed to have mild anti tussive effect. Bromhexine increases sputum volume by stimulating the mucous gland of the respiratory tract and promoting ciliary clearance of sputum. Bromhexine further reduces sputum viscosity by breaking down the tenacious network of mucopolysaccharide fibres in mucoid sputum which are mainly responsible for sputum stickiness.

Bromhexine creates an environment in the bronchial tree conducive to the removal of sticky mucus thus promoting expectoration without excessive straining.

Ammonium chloride produces mild irritation of the mucous lining of the stomach and this gastorvagal reflex increases the respiratory tract fluid, relieving dryness and soreness of the respiratory passage.

5.3 Pharmacokinetics :

Dextromethorphan is rapidly absorbed from the gastrointestinal tract and exerts its effect in 15 to 30 minutes. The duration of action after oral administration is approximately 3-6 hours. Dextromethorphan is metabolized primarily by live enzymes undergoing O-demethylation, N-demethylation and partial conjugation with glucuronic acid and sulfate.

Bromhexine is rapidly absorbed from the gastrointestinal tract and 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 and is highly bound to plasma proteins. About 85 to 90% of a dose is excreted in the urine mainly as metabolites. It has a terminal elimination half-life of up to about 12 hours. Bromhexine crosses the blood brain barrier and small amounts cross the placenta.

Administration of bromhexine hydrochloride by mouth to healthy subjects produced peak plasma concentrations after about 1 hour. Only small amounts were excreted unchanged in the urine with a half life of about 6.5 hours.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Sucrose, Liquid glucose, Benzoic Acid, Sodium Benzoate, Saccharin Sodium, Propylene Glycol, Vanillin, Colour Apple Green (IH-8925), Essence Mixed Fruit (S-2535), Purified Water

6.2 Shelf Life

24 months

6.3 Special precautions for storage

Store below 30°C. Protect from light.

6.4 Nature and contents of container

100 ml packed in an amber PET bottle with R.O.P.P. Cap with logo and measuring cup and pasted with printed label. One bottle is packed in a printed carton with package insert.

7. MARKETING AUTHORISATION HOLDER

Wockhardt Limited

8. MARKETING AUTHORISATION NUMBER(S)

-

9. DATE OF FIRST AUTHORISATION / RENEWAL OF THE AUTHORISATION

-

10. DATE OF REVISION OF THE TEXT

December 2020