SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE MEDICINAL PRODUCT
Albendazole Oral Suspension USP 100mg

2. QUALITATIVE AND QUANTITATIVE COMPOSITION
Each 5 ml contains:
Albendazole USP 100mg

3. PHARMACEUTICAL FORM
Oral Suspension
A white colour uniform suspension.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

Albendazole oral Suspension is a benzimidazole carbamate with anthelmintic and antiprotozoal activity against intestinal and tissue parasites.

Intestinal Infections and Cutaneous Larva Migrans

Albendazole oral Suspension has activity against the following intestinal and tissue parasites: Round-worm (Ascaris lumbricoides), pin-worm (Enterobius vermicularis), hook-worm (Necator 2 americanus, Ancylostoma duodenale), whip-worm (Trichuris trichiura), thread-worm (Strongyloides stercoralis), tape-worm (Taenia spp and Hymenolepis nana only in the case of associated parasitism), Chlonorchiasis (Chlonorchis sinensis), Opisthorchiasis (Opisthorchis viverrini) and cutaneous larva migrans; Giardiasis (G.lamblia, G.duodenalis, G.intestinalis, Lamblia intestinalis) in children.

Systemic Helminth Infections Albendazole is indicated for the treatment of the following systemic helminth infections.

• **Echinococcosis**

Albendazole oral Suspension shows greatest efficacy in the treatment of liver, lung and peritoneal cysts. Experience with bone cysts and those in the heart and central nervous system is limited.

Cystic Echinococcosis (caused by Echinococcus granulosus)

Albendazole oral Suspension is used in patients with cystic echinococcosis:
1. where surgical intervention is not feasible.
2. prior to surgical intervention.
3. post-operatively if pre-operative treatment was too short, if spillage has occurred or if viable material was found at surgery.
4. following percutaneous drainage of cysts for diagnostic or therapeutic reasons.

Alveolar Echinococcosis (caused by Echinococcus multilocularis) Albendazole oral Suspension is used in patients with alveolar echinococcosis:
1. in inoperable disease, particularly in cases of local or distant metastasis.
2. following palliative surgery.
3. following radical surgery or liver transplantation.

• **Neurocysticercosis** (larval Taenia solium infection) Albendazole oral Suspension is used for the treatment of patients with:
1. single or multiple cystic or granulomatous lesions of the brain parenchyma.
2. arachnoidal or intraventricular cysts.
3. racemose cysts.

4.2 Posology and method of administration

Adults and children over 2 years:
Enterobiasis:
1 x 5 ml (1 dosing cup).
It is highly recommended that a second dose is taken after 2 weeks, if reinfection is suspected.
Ascariasis, trichuriasis, ancylostomiasis, necatoriasis and mixed infections:

1 x 5 ml (1 dosing cup) bd for three days.
Children under 2 years:
Albendazole has not been extensively studied in children below the age of 2 years.
Currently available data are described , but no recommendations on a posology can be made.
Because of the lack of sufficient safety data, Albendazole should not be used in children
Below the age of 1 year.
Method of administration.
Oral Use
Albendazole oral suspension should be considered for patients such as young children
who are unable to swallow the tablet.
Dose as recommendation by the physician.

4.3 Contraindications

Albendazole is contraindicated in pregnancy and in patients who have shown hypersensitivity to the product or any components.

4.4 Special warnings and precautions for use

Use in Intestinal Infections and Cutaneous Larva Migrans (shorter duration of treatment at lower doses)

In order to avoid administering Albendazole oral suspension during early pregnancy, women of childbearing age should initiate treatment during the first week of menstruation or after a negative pregnancy test. Treatment with Albendazole oral suspension may uncover pre-existing neurocysticercosis, particularly in areas with high taenosis infection. Patients may experience neurological symptoms e.g. seizures, increased intracranial pressure and focal signs as a result of an inflammatory reaction caused by death of the parasite within the brain. Symptoms may occur soon after treatment, appropriate steroid and anticonvulsant therapy should be started immediately.

Use in Systemic Helminth Infections (longer duration of treatment at higher doses)

Albendazole treatment has been associated with mild to moderate elevations of hepatic enzymes. Hepatic enzymes generally normalise on discontinuation of treatment. Case reports of hepatitis have also been received. Liver function tests should be obtained before the start of each treatment cycle and at least every two weeks during treatment. If hepatic enzymes are significantly increased (greater than twice the upper limit of normal), Albendazole should be discontinued. Albendazole treatment may be restarted when hepatic enzymes have returned to normal limits, but patients should be carefully monitored for a recurrence. Albendazole has been shown to cause bone marrow suppression and therefore blood counts should be performed at the start and every two weeks during each 28 day cycle. Patients with liver disease, including hepatic echinococcosis, appear to be more susceptible to bone marrow suppression leading to pancytopenia, aplastic anaemia, agranulocytosis and leukopenia and therefore warrant closer monitoring of blood counts.
Albendazole should be discontinued if clinically significant decreases in blood cell counts occur.
In order to avoid administering Albendazole oral suspension during early pregnancy, women of childbearing age should:
• initiate treatment only after a negative pregnancy test. These tests should be repeated at least once before initiating the next cycle.
• be advised to take effective precautions against conception during and within one month of completion of treatment with Albendazole oral suspension for a systemic infection.
Symptoms associated with an inflammatory reaction following death of the parasite may occur in patients receiving Albendazole oral suspension treatment for neurocysticercosis (e.g. seizures, raised intracranial pressure, focal signs). These should be treated with appropriate steroid and anticonvulsant therapy. Oral or intravenous corticosteroids are recommended to

prevent cerebral hypertensive episodes during the first week of treatment.

4.5 Interaction with other medicinal products and other forms of interaction

Cimetidine, praziquantel and dexamethasone have been reported to increase the plasma levels of the albendazole active metabolite responsible for the systemic efficacy of the product. Ritonavir, phenytoin, carbamazepine and phenobarbital may have the potential to reduce plasma concentrations of the active metabolite of albendazole; albendazole sulfoxide. The clinical relevance of this is unknown, but may result in decreased efficacy, especially in the treatment of systemic helminth infections. Patients should be monitored for efficacy and may require alternative dose regimens or therapies.

4.6 Fertility, pregnancy and lactation

Fertility

Adequate human or animal data on use during lactation are not available.

Pregnancy

Albendazole should not be administered during pregnancy or in women thought to be pregnant.

Lactation

Adequate human or animal data on use during lactation are not available.

4.7 Effects on ability to drive and use machines

None known

4.8 Undesirable effects

Data from large clinical studies were used to determine the frequency of very common to rare undesirable reactions. The frequencies assigned to all other undesirable reactions (i.e. those occurring at < 1/1000) were mainly determined using post-marketing data and refer to a reporting rate rather than a true frequency.

The following convention has been used for the classification of frequency:

Very common	≥1/10
Common	≥1/100 to <1/10
Uncommon	≥ 1/1000 to < 1/100
Rare	≥ 1/10,000 to < 1/1000
Very rare	< 1/10,000

Use in intestinal infections and Cutaneous Larva Migrans (short duration treatment at lower dose)

Immune system disorders	
Rare:	Hypersensitivity reactions including rash, pruritus and urticaria
Nervous system disorders	
Uncommon:	Headache and dizziness
Gastrointestinal disorders	
Uncommon:	Upper gastrointestinal symptoms (e.g. epigastric or abdominal pain, nausea, vomiting) and diarrhoea.
Hepatobiliary disorders	
Rare:	Elevations of hepatic enzymes
Skin and subcutaneous tissue disorders	
Very rare:	Erythema multiforme, Stevens-Johnson syndrome

Use in systemic helminth infections (longer duration of treatment at higher doses)

Blood and the lymphatic system disorders	
Uncommon:	Leukopenia
Very rare:	Pancytopenia, aplastic anaemia, agranulocytosis

Patients with liver disease, including hepatic echinococcosis, appear to be more susceptible to bone marrow suppression.

Immune system disorders	
Uncommon:	Hypersensitivity reactions including rash, pruritus and urticaria
Nervous system disorders	
Very common:	Headache
Common:	Dizziness
Gastrointestinal disorders	
Common:	Gastrointestinal disturbances (abdominal pain, nausea, vomiting)

Gastrointestinal disturbances have been associated with albendazole when treating patients with echinococcosis.

Hepato-biliary disorders	
Very common:	Mild to moderate elevations of hepatic enzymes
Uncommon:	Hepatitis
Skin and subcutaneous tissue disorders	
Common:	Reversible alopecia (thinning of hair, and moderate hair loss)
Very rare:	Erythema multiforme, Stevens-Johnson syndrome
General disorders and administrative site conditions	
Common:	Fever

4.9 Overdose

Signs and symptoms

In the event of accidental overdosage, abdominal cramps, nausea, vomiting and diarrhoea may occur.

Treatment

There is no specific antidote. Activated charcoal may be given if considered appropriate.

5. PHARMACOLOGICAL PROPERTIES

Mechanism of Action

Albendazole is a benzimidazole carbamate with antiprotozoal and anthelmintic effects against intestinal and tissue parasites. Albendazole exhibits larvicidal, ovicidal and vermicidal activity, and it is thought to exert its anthelmintic effect by inhibiting tubulin polymerisation. This causes the disruption of the helminth metabolism, including energy depletion, which immobilises and then kills the susceptible helminth.

5.1 Pharmacodynamic properties

ATC code: P02CA03

Intestinal Infections and Cutaneous Larva Migrans

Albendazole oral suspension is active against intestinal parasites, including:

– Nematodes Ascaris lumbricoides (roundworm)

Trichuris trichiura (whipworm)

Enterobius vermicularis (pinworm/threadworm)

Ancylostoma duodenale (hookworm)

Necator americanus (hookworm)

Strongyloides stercoralis (threadworm)

Hookworms that cause cutaneous larva migrans.

– Cestodes

Hymenolepsis nana (dwarf tapeworm).

Taenia solium (pork tapeworm).

Taenia saginata (beef tapeworm).

– Trematodes
Opisthorchis viverrini and Clonorchis sinensis.
– Protozoa
Giardia lamblia (intestinalis or duodenalis).
Systemic Helminth Infections
Albendazole is effective in the treatment of tissue parasites, including cystic echinococcosis and alveolar echinococcosis caused by infestation of Echinococcus granulosus and Echinococcus multilocularis, respectively. Albendazole is also effective in the treatment of neurocysticercosis caused by larval infestation of Taenia solium.
Albendazole has been shown (in clinical trials) to eradicate cysts or significantly reduce cyst size in up to 80% of patients with Echinococcus granulosus cysts who were treated. Where cysts have been investigated for viability following treatment with albendazole, 90% have been non-viable in laboratory or animal studies compared to only 10% of untreated cysts.
In the treatment of cysts due to Echinococcus multilocularis, a minority of patients were considered to be cured and a majority had an improvement or stabilisation of disease due to albendazole therapy.

5.2 Pharmacokinetic properties

Absorption
In man, albendazole is poorly absorbed (less than 5%) following oral administration.
The systemic pharmacological effect of albendazole is augmented if the dose is administered with a fatty meal, which enhances the absorption by approximately five-fold.
Distribution
Following oral administration of a single dose of 400 mg albendazole, the pharmacologically active metabolite, albendazole sulfoxide, has been reported to achieve plasma concentrations from 1.6 to 6.0 micromol/L when taken with breakfast.
Metabolism
Albendazole rapidly undergoes extensive first-pass metabolism in the liver, and is generally not detected in plasma. Albendazole sulfoxide is the primary metabolite, which is thought to be the active moiety in effectiveness against systemic tissue infections.
Elimination The plasma half-life of albendazole sulfoxide is 8.5 hours.
Albendazole sulfoxide and its metabolites appear to be principally eliminated in bile, with only a small proportion appearing in the urine.Elimination from cysts has been shown to occur over several weeks following high and prolonged dosing.

5.3 Preclinical safety data
No relevant information.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients
Propyl Paraben, Sucralose, Sorbic acid, Sodium Metabisulphite, Polysorbate 80, Citric acid Monohydrate, Disodium Edetate, Croscarmellos Sodium, Xanthan gum, Sodium hydroxide pellets, Flavour banana, Methyl Paraben, Flavour peppermint, Falvour Rose white.

6.2 Incompatibilities
Not known

6.3 Shelf life
36 Months

6.4 Special precautions for storage
Store below 30°C. Protect from light.

6.5 Nature and contents of container <and special equipment for use, administration or implantation>
20ml Amber coloured PET bottle with 22mm white ROPP closure.

6.6 Special precautions for disposal and other handling

None.

7. MARKETING AUTHORISATION HOLDER

Ciron Drugs & Pharmaceuticals Pvt. Ltd.
C- 1101 /1102, Lotus Corporate Park, Graham Firth Steel Compound,
Jay Coach Junction, Western Express Highway, Goregaon (East)
Mumbai- 400 063, India.

8. MARKETING AUTHORISATION NUMBER(S)

07833/09654/NMR/2022

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorization : 30.09.2022

10. DATE OF REVISION OF THE TEXT

14/07/2023

11. Reference

https://india-pharma.gsk.com/media/6419/zentel.pdf