



**National Agency for Food & Drug Administration &
Control (NAFDAC)**

**Registration & Regulatory Affairs (R & R)
Directorate**

**SUMMARY OF PRODUCT CHARACTERISTICS
(SmPC) TEMPLATE**

1. Name of the medicinal product

Avrofed Tablet

2. Qualitative and quantitative composition

Each Tablet contains:

Pseudoephedrine hydrochloride 60.0 mg

Tripolidine hydrochloride 2.5mg

For the full list of excipients, see section 6.1.

3. Pharmaceutical form

Tablet. White, round biconvex tablet with bisecting score on one side. The scoreline is only to facilitate breaking for ease of swallowing and not to divide into equal doses

4. Clinical particulars

4.1 Therapeutic indications

Avrofed Tablets are indicated for the symptomatic relief of upper respiratory tract disorders which are benefited by a combination of a nasal decongestant and H1-receptor antagonist, for example allergic rhinitis, vasomotor rhinitis and the common cold.

4.2 Posology and method of administration

Adults and children 12 years and over:

One tablet to be taken every 4-6 hours, up to four times a day.

Children under 12 years:

This medicine is contraindicated in children under the age of 12 years (see section 4.3).

The Elderly:

There have been no specific studies of Avrofed Tablets in the elderly. Experience has indicated that normal adult dosage is appropriate.

Hepatic Dysfunction:

Caution should be exercised when administering Avrofed Tablets to patients with severe hepatic impairment.

Renal Dysfunction:

Caution should be exercised when administering Avrofed Tablets to patients with mild to moderate renal impairment.

Method of Administration

For oral use.

4.3 Contraindications

Avrofed Tablets are contra-indicated in individuals with known hypersensitivity to pseudoephedrine, tripolidine or to any of the excipients listed in section 6.1.

Avrofed Tablets are contra-indicated in patients with cardiovascular disease including hypertension, and in those who are taking beta-blockers.

Avrofed Tablets are contra-indicated in individuals who have diabetes mellitus, phaeochromocytoma, hyperthyroidism, closed angle glaucoma, or severe renal impairment.

Avrofed Tablets are contra-indicated in patients who are taking, or have taken, monoamine oxidase inhibitors within the preceding two weeks. The concomitant use of pseudoephedrine and this type of product may cause a rise in blood pressure and/or hypertensive crisis. This medicine is contra-indicated in individuals at risk of developing respiratory failure.

Avrofed Tablets are contra-indicated in patients who are currently taking other sympathomimetic decongestants.

Avrofed Tablets are contra-indicated for use in children under 12 years of age

4.4 Special warnings and precautions for use

Avrofed Tablets may cause drowsiness. This product should not be used to sedate a child.

If any of the following occur, this product should be stopped:

- Hallucinations
- Restlessness
- Sleep disturbances

Severe Skin reactions Severe skin reactions such as acute generalized exanthematous pustulosis (AGEP) may occur with pseudoephedrine-containing products. This acute pustular eruption may occur within the first 2 days of treatment, with fever, and numerous, small, mostly non-follicular pustules arising on a widespread oedematous erythema and mainly localized on the skin folds, trunk, and upper extremities. Patients should be carefully monitored. If signs and symptoms such as pyrexia, erythema, or many small pustules are observed, administration of this medicine should be discontinued and appropriate measures taken if needed.

Ischaemic colitis

Some cases of ischaemic colitis have been reported with pseudoephedrine. Pseudoephedrine should be discontinued and medical advice sought if sudden abdominal pain, rectal bleeding or other symptoms of ischaemic colitis develop.

Ischaemic optic neuropathy

Cases of ischaemic optic neuropathy have been reported with pseudoephedrine. Pseudoephedrine should be discontinued if sudden loss of vision or decreased visual acuity such as scotoma occurs.

There have been rare cases of posterior reversible encephalopathy syndrome (PRES) / reversible cerebral vasoconstriction syndrome (RCVS) reported with sympathomimetic drugs, including pseudoephedrine. Symptoms reported include sudden onset of severe headache, nausea, vomiting, and visual disturbances. Most cases improved or resolved within a few days following appropriate treatment. Pseudoephedrine should be discontinued, and medical advice sought immediately if signs or symptoms of PRES/RCVS develop.

There have been no specific studies of Avrofed Tablets in patients with hepatic and/or renal dysfunction. Caution should be exercised when administering to patients with severe hepatic impairment or mild to moderate renal impairment.

Although pseudoephedrine has virtually no pressor effects in patients with normal blood pressure, Avrofed Tablets should be used with caution in patients taking antihypertensive agents and tricyclic antidepressants or other sympathomimetic agents, such as decongestants, appetite suppressants and amphetamine-like psychostimulants. The effects of a single dose on the blood pressure of these patients should be observed before recommending repeated or unsupervised treatment.

The physician or pharmacist should check that sympathomimetic containing preparations are not simultaneously administered by several routes i.e. orally and topically (nasal, aural and eye preparations).

Patients with the following conditions should be advised to consult a physician before using Avrofed Tablets: difficulty in urination and/or enlargement of the prostate; or susceptibility to angle-closure.

Patients with the following conditions should not use Avrofed Tablets unless directed by a physician: acute or chronic bronchial asthma chronic bronchitis or emphysema.

Patients with thyroid disease who are receiving thyroid hormones should not take pseudoephedrine unless directed by a physician.

Triprolidine may enhance the sedative effects of central nervous system depressants including alcohol,

sedatives and tranquilizers. While taking Avrofed tablets, patients should be advised to avoid alcoholic beverages and consult a healthcare professional prior to taking with central nervous system depressants. T

his product may act as a cerebral stimulant giving rise to insomnia, nervousness, hyperpyrexia, tremors and epileptiform convulsions. Care should be taken when used in epileptic patients

Use with caution in occlusive vascular disease.

Pseudoephedrine may induce positive results in certain anti-doping tests.

4.5 Interaction with other medicinal products and other forms of interaction

MAOIs and/or RIMAs: Pseudoephedrine exerts its vasoconstricting properties by stimulating α -adrenergic receptors and displacing noradrenaline from neuronal storage sites. Since MAOIs impede the metabolism of sympathomimetic amines and increase the store of releasable norepinephrine in adrenergic nerve endings, MAOIs may potentiate the pressor effect of pseudoephedrine. This medicine should not be used in patients treated with MAOIs or within 14 days of stopping treatment as there is an increased risk of hypertensive crisis.

Moclobemide: risk of hypertensive crisis.

Oxytocin: risk of hypertension.

Cardiac glycosides: increased risk of dysrhythmias.

Ergot alkaloids (ergotamine & methysergide): increased risk of ergotism.

Anticholinergic drugs: The effects of anti-cholinergics e.g., some psychotropic drugs (such as tricyclic antidepressants) and atropine, may be potentiated by this product, giving rise to tachycardia, mouth dryness, gastrointestinal disturbances, e.g., colic, urinary retention and headache.

Sympathomimetic agents: Concomitant use of Avrofed Tablets with tricyclic antidepressants, other sympathomimetic agents (such as decongestants, appetite suppressants and amphetamine-like psychostimulants) may cause a rise in blood pressure.

Antihypertensives: The effect of antihypertensive agents which interfere with sympathetic activity may be partially reversed by the pseudoephedrine in Avrofed Tablets, e.g. bretylium, betanidine, guanethidine, reserpine, debrisoquine, methyl dopa, adrenergic neurone blockers and beta-blockers.

Anaesthetic agents: Concurrent use with halogenated anaesthetic agents such as chloroform, cyclopropane, halothane, enflurane or isoflurane may provoke or worsen ventricular arrhythmias.

CNS depressants: Triprolidine may enhance the sedative effects of alcohol and other central nervous system depressants including barbiturates, hypnotics, opioid analgesics, anxiolytic sedatives and antipsychotics.

4.6 Pregnancy and lactation

There are no adequate and well-controlled studies for pseudoephedrine, triprolidine in pregnant or breast-feeding women.

Pregnancy

This product should not be used during pregnancy unless the potential benefit of treatment to the mother outweighs the possible risks to the developing foetus.

Lactation

Pseudoephedrine distributes into and is concentrated in breast milk. Triprolidine is excreted in breast milk, it has been estimated that approximately 0.06 to 0.2% of a single 2.5 mg dose of triprolidine ingested by a nursing mother will be excreted in the breast-milk over 24 hours. This product should not be used during

lactation unless the potential benefit of treatment to the mother outweighs the possible risks to the nursing infant.

4.7 Effects on ability to drive and use machines

Avrofed Tablets may have a moderate influence on the ability to drive and use machines. Avrofed Tablets may cause dizziness or drowsiness and impair performance in tests of auditory vigilance. Patients should be cautioned about engaging in activities requiring mental alertness, such as driving a car or operating machinery, until they have established their own response to the drug.

It is recommended that patients are advised not to undertake tasks requiring mental alertness whilst under the influence of alcohol or other CNS depressants. Concomitant administration of Avrofed Tablets may, in some patients, produce additional impairment.

4.8 Undesirable effects

Central nervous system depression or excitation may occur, drowsiness being reported most frequently. Sleep disturbance and, rarely, hallucinations have been reported.

Skin rashes, with or without irritation, tachycardia, dryness of mouth, nose and throat, have occasionally been reported.

Urinary retention has been reported occasionally in men receiving pseudoephedrine; prostatic enlargement could have been an important predisposing factor.

4.9 Overdose

The effects of acute toxicity from Avrofed may include drowsiness, lethargy, dizziness, ataxia, weakness, hypotonicity, respiratory depression, dryness of the skin and mucous membranes, tachycardia, hypertension, hyperpyrexia, hyperactivity, irritability, convulsions, and difficulty with micturition. Necessary measures should be taken to maintain and support respiration and control convulsions. Gastric lavage should be performed up to 3 hours after ingestion if indicated. Catheterisation of the bladder may be necessary. If desired, the elimination of pseudoephedrine can be accelerated by acid diuresis or by dialysis.

Pseudoephedrine

Overdose may result in:

Metabolism and nutrition disorders: hyperglycaemia, hypokalaemia

Psychiatric disorders: CNS stimulation, insomnia; irritability, restlessness, anxiety, agitation; confusion, delirium, hallucinations, psychoses

Nervous system disorders: seizures, tremor, intracranial haemorrhage including intracerebral haemorrhage, drowsiness in children

Eye disorders: mydriasis

Cardiac disorders: palpitations, tachycardia, reflex bradycardia, supraventricular and ventricular arrhythmias, dysrhythmias, myocardial infarction

Vascular disorders: hypertension, hypertensive crisis Gastrointestinal disorders: nausea, vomiting, ischaemic bowel infarction

Musculoskeletal and connective tissue disorders: rhabdomyolysis Renal and urinary disorders: acute renal failure, difficulty in micturition

Tripolidine

Overdosage of an H1 receptor antagonist may result in CNS depression, hyperthermia, anticholinergic syndrome (mydriasis, flushing, fever, dry mouth, urinary retention, decreased bowel sounds), tachycardia, hypotension, hypertension, nausea, vomiting, agitation, confusion, hallucinations, psychosis, seizures, or dysrhythmias. Rhabdomyolysis and renal failure may rarely develop in patients with prolonged agitation, coma or seizures.

Management

The treatment of overdosage is likely to be symptomatic and supportive. Necessary measures should be taken to maintain and support respiration and control convulsions. Catheterisation of the bladder may be necessary. If desired, the elimination of pseudoephedrine can be accelerated by acid diuresis or by dialysis.

5. Pharmacological properties

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Sympathomimetics, pseudoephedrine, combinations ATC code: R01BA52

Triprolidine provides symptomatic relief in conditions believed to depend wholly, or partly, upon the triggered release of histamine. Triprolidine is a potent, competitive H₁-receptor antagonist of the pyrrolidine class with mild central nervous system depressant properties which may cause drowsiness.

Pseudoephedrine has direct and indirect sympathomimetic activity and is an effective upper respiratory decongestant. Pseudoephedrine is less potent than ephedrine in producing both tachycardia and elevation of systolic blood pressure and is less potent in causing stimulation of the central nervous system.

After oral administration of a single dose of 2.5 mg triprolidine to adults the onset of action, as determined by the ability to antagonise histamine-induced weals and flares in the skin, is within 1 to 2 hours. Peak effects occur at about 3 hours, and although activity declines thereafter, significant inhibition of histamine-induced weals and flares still occurs 8 hours after dose. Pseudoephedrine produces its decongestant effect within 30 minutes persisting for at least 4 hours.

5.2 Pharmacokinetic properties

After the administration of one Avrofed Tablet in healthy adult volunteers, the peak plasma concentration (C_{max}) of triprolidine is approximately 5.5 - 6.0 ng/ml, occurring at about 2.0 hours (T_{max}) after drug administration. The plasma half-life of triprolidine is approximately 3.2 hours. The peak plasma concentration (C_{max}) of pseudoephedrine is approximately 180 ng/ml, with T_{max} approximately 2 hours after drug administration. The plasma half-life is approximately 5.5 hours (urine pH maintained between 5.0 - 7.0). The plasma half-life of pseudoephedrine is markedly decreased by acidification of urine and increased by alkalination.

In a limited study, three mothers nursing healthy infants were given an antihistamine-decongestant preparation containing 60 mg of pseudoephedrine and 2.5 mg of triprolidine. Milk concentrations of pseudoephedrine were higher than plasma levels in all three patients, with peak milk concentrations occurring at 1.0–1.5 hours. The investigators calculated that 1000 ml of milk produced during 24 hours would contain approximately 0.5%–0.7% of the maternal dose. However, following a single-blind, crossover study of a single dose of pseudoephedrine 60 mg vs. placebo conducted in 8 lactating mothers, and assuming maternal intake of 60 mg pseudoephedrine hydrochloride four times daily, the estimated infant dose of pseudoephedrine based on AUC and an estimated milk production rate of 150 ml/kg/day was 4.3% (95% CI, 3.2, 5.4%; range 2.2 to 6.7%) of the weight-adjusted maternal dose.

5.3 Preclinical safety data

Mutagenicity

There is insufficient information available to determine whether triprolidine or pseudoephedrine has mutagenic potential.

Carcinogenicity

There is insufficient information available to determine whether triprolidine or pseudoephedrine has carcinogenic potential.

Teratogenicity

In rats and rabbits systemic administration of triprolidine up to 75 times the human daily dosage did not produce teratogenic effects. Systemic administration of pseudoephedrine up to 50 times the human daily

dosage in rats, and up to 35 times the human daily dosage in rabbits, did not produce teratogenic effects.

Fertility

No studies have been conducted in animals to determine whether triprolidine or pseudoephedrine have potential to impair fertility. There is no information on the effect of Avrofed Tablets on human fertility.

6. Pharmaceutical particulars

6.1 List of excipients

Lactose

Maize Starch

Magnesium Stearate

6.2 Incompatibilities

Not applicable

6.3 Shelf life

3 Years

6.4 Special precautions for storage

Store below 30°C

Store in original package to protect from light and moisture

6.5 Nature and contents of container

10 x 10 tablets in PVDC/Aluminium foil blister packs

6.6 Special precautions for disposal and other handling

No special requirements. Any unused product or waste material should be disposed of in accordance with local requirements.

7. Marketing authorisation holder

Avro Pharma Limited

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