

# **DROLEPTAN™**

## **Droperidol 2.5 mg in 1 mL Injection**

### **Presentation**

DROLEPTAN Injection 2.5 mg in 1 mL is a sterile, non-pyrogenic aqueous solution for intravenous or intramuscular injection. Each mL contains droperidol as the tartrate equivalent to 2.5 mg of droperidol base with pH  $3.4 \pm 0.4$

### **Uses**

#### ***Actions***

DROLEPTAN is a butyrophenone neuroleptic agent. Its pharmacological profile is characterised mainly by dopamine-blocking and  $\alpha_1$ -adrenolytic effects. DROLEPTAN is devoid of anticholinergic and antihistaminic activity. It has a marked tranquilising and sedative effect, alleviates apprehension and causes a state of mental detachment and indifference while maintaining a state of reflex alertness.

DROLEPTAN produces an antiemetic effect. It lowers the incidence of nausea and vomiting during surgical procedures and provides antiemetic protection in the postoperative period.

DROLEPTAN potentiates other CNS depressants. It induces mild  $\alpha_1$ -adrenergic blockade and peripheral vascular dilatation and reduces the pressor effect of adrenaline. It can cause hypotension and decreased peripheral vascular resistance and may decrease pulmonary arterial pressure (particularly if it is abnormally high). It may also reduce the incidence of adrenaline-induced arrhythmia, but it does not prevent other forms of cardiac arrhythmia.

#### ***Pharmacokinetics***

The action of a single intramuscular and intravenous dose commences 3 to 10 minutes after administration, although the peak effect may not be apparent for up to 30 minutes. Tranquilising and sedative effects tend to persist for 2 to 4 hours, although alertness may be affected for up to 12 hours.

After intravenous administration, plasma concentrations fall rapidly during the first 15 minutes. Plasma protein binding is in the range of 85 to 90%. The distribution volume is 99 to 168 litres. 75% of the metabolites are eliminated via the kidneys. Only 1% of the agent is excreted unchanged in urine, and 11% in faeces. Plasma clearance is 570mL/min. The elimination half-life ( $t_{1/2}$ ) is  $134 \pm 13$  minutes. The bioavailability of the oral form is 75%, the peak concentration being reached after 1 to 2 hours.

### **Indications**

DROLEPTAN is indicated for the following conditions provided certain precautions are taken (see **Contraindications, Warnings and Precautions**):

## ***Anaesthesia***

DROLEPTAN may be used to produce tranquilisation and to reduce the incidence of nausea and vomiting in surgical and diagnostic procedures. It can also be used for premedication, induction, and as an adjunct in the maintenance of general and regional anaesthesia

In neuroleptanalgesia, DROLEPTAN can be given concurrently with a narcotic analgesic, such as fentanyl injection, to aid in producing tranquillity and in decreasing anxiety and pain.

Provided that certain precautions are taken, DROLEPTAN may be administered as a neuroleptic in all types of surgical interventions.

The indications of choice for neuroleptanalgesia with DROLEPTAN are major and prolonged surgery, interventions involving high risk for the patient or in aged persons, surgery in patients with a poor overall condition, and in individuals who are in shock.

## ***Psychiatry***

DROLEPTAN may be used in the management of severe agitation, hyperactivity, or aggressiveness in psychotic disorders, including schizophrenic reaction and the manic type of manic depressive disorder, or in disturbed states, such as some types of acute brain syndrome and in non-psychotic acute excitation states.

## **Dosage and Administration**

Volume	2.5 mg / 1 mL equivalent
1 mL	2.5 mg
2 mL	5 mg
3 mL	7.5 mg

The dosage should be adapted to each individual case. The factors to be considered here include age, body weight, the use of other medications, the type of anaesthesia to be used and the surgical procedure involved.

Vital signs should be monitored routinely. To minimise the risk of ventricular arrhythmia, an electrocardiograph (ECG) should be performed and examined for evidence of QT prolongation before any operation commences. ECG monitoring should continue during the surgical procedure and subsequently for a period of time consistent with best medical judgement. This should be at least 7 hours after the end of the procedure. (See Contraindications, Warnings and Precautions).

Elderly or debilitated patients or individuals with previously reported adverse reactions to neuroleptic agents may require less DROLEPTAN, and half the normal starting dose may be sufficient for a therapeutic response.

## ***Anaesthesia***

**Usual adult dosage:****Premedication and diagnostic use:**

2.5mg to 5mg may be administered intramuscularly or slowly intravenously 30 to 60 minutes before the diagnostic procedure. This (or a lower) dose will reduce the incidence of post-operative nausea and vomiting. The dosage should be reduced as appropriate in the elderly.

**Adjuvant to general anaesthesia:**

Induction: 2.5 mg per 10 kg may be administered (usually intravenously). Smaller doses may be adequate. (See Warnings and Precautions section).

Maintenance (if required): 1.25 to 2.5 mg usually intravenously. An adequate circulation volume should be ensured in view of the alpha-blocking properties of droperidol.

**Adjuvant to regional anaesthesia:**

2.5 to 5 mg may be administered intramuscularly or slowly intravenously when additional sedation is required.

Usual paediatric dosage: For children, a reduced dose as low as 1.0 mg per 10 kg is recommended for premedication or anaesthesia induction.

***Psychiatry***

In psychiatry, the dosage should be determined on an individual basis and is best initiated and titrated under close clinical supervision. To determine the initial dose, the patient's age, the symptom severity, and the previous response to other neuroleptic agents should be taken into account.

**Adults:**

5 to 15 mg intravenously or up to 10 mg intramuscularly. The dosage may be repeated at intervals of 4 to 8 hours (intravenous or intramuscular).

**Children:**

0.5 to 1 mg/day intramuscularly adjusted according to their response.

**Elderly:**

Elderly or debilitated patients or individuals with a history of adverse reactions to neuroleptic agents may require less DROLEPTAN and half the normal starting dose in psychiatry may be sufficient for a therapeutic response. The optimal response in such patients is usually obtained with more gradual titration and at lower doses. In adolescents, a lower starting dose may be recommended.

**Contraindications**

DROLEPTAN is contraindicated in patients with known hypersensitivity to the agent or its metabolites, in patients with severe depression, in comatose individuals or in patients with Parkinson's disease.

DROLEPTAN should not be used in patients with a QTc of greater than 450 msec, (see Warnings and Precautions).

DROLEPTAN is contraindicated in patients with acquired long QT interval, such as that associated with concomitant use of medicines known to prolong the QT interval (see Interactions ), known hypokalaemia or hypomagnesaemia or clinically significant bradycardia. DROLEPTAN is also contraindicated in patients with known congenital long QT interval or family history of congenital long QT syndrome.

## Warnings and Precautions

The benefits of using DROLEPTAN should be weighed against the potential risk. DROLEPTAN should only be used under appropriate medical supervision.

Any patient subjected to anaesthesia and receiving potent CNS depressant agents or showing CNS depression should be monitored closely. Mild to moderate hypotension and occasionally (reflex) tachycardia have been observed following the administration of DROLEPTAN. This reaction usually subsides spontaneously. However, should hypotension persist, the possibility of hypovolaemia should be considered and appropriate fluid replacement administered.

Patients with, or suspected of having, the following risk factors for cardiac arrhythmia should be carefully evaluated prior to the administration of DROLEPTAN:

- a history of significant cardiac disease, including serious ventricular arrhythmia, second or third degree atrioventricular block, sinus node dysfunction, congestive heart failure or ischaemic heart disease,
- a family history of sudden death,
- renal failure (particularly with chronic dialysis),
- significant chronic obstructive pulmonary disease and respiratory failure,
- risk factors for electrolyte disturbances as seen in patients taking potassium-wasting diuretics, in association with the administration of insulin in acute settings or in patients with persistent vomiting and/or diarrhoea.

In these patients, an ECG and an assessment of serum electrolytes (potassium and magnesium) and renal function should be performed as part of this evaluation. In a hospital setting, ECG monitoring should be started, when possible, before the administration of DROLEPTAN for anaesthesia (see Contraindications). For patients with acute mania or agitation, it is recognised that performing an ECG prior to the initial dose(s) may be difficult. However, an ECG should be performed as soon as the patient's acute symptoms have subsided. Although the possibility of developing QT prolongation and torsade de pointes with the use of DROLEPTAN is low, ECG monitoring and full cardiac resuscitation facilities should be available.

Outside the hospital setting, DROLEPTAN should only be used for the management of the psychiatric crisis (e.g. acute mania or severe agitation). A single injection should be administered, either intravenously (not greater than 2.5 mg) or intramuscularly (not greater than 5 mg) and the patient should then be transferred immediately to a hospital facility by an ambulance equipped for cardiac resuscitation.

If additional sedation is required, a suitable acting sedative (such as a benzodiazepine) should be considered.

In patients with diagnosed or suspected pheochromocytoma, severe hyper-tension and tachycardia have been observed after administration of DROLEPTAN. Therefore, the use of DROLEPTAN should be avoided in such patients. Since DROLEPTAN is metabolised extensively in the liver, the agent should be used with caution in patients with impaired hepatic function. DROLEPTAN should also be used with care in patients suffering from severe depression or Parkinson's disease.

In the long-term treatment of psychiatric patients, the neuroleptic malignant syndrome may occur in very rare cases.

### ***Elderly patients with Dementia-related Psychosis***

Observational studies suggest that elderly patients with dementia-related psychosis treated with antipsychotic drugs are at an increased risk of death. Risk factors that may predispose this patient population to increased risk of death when treated with antipsychotics include age > 80 years, sedation, concomitant use of benzodiazepines, or presence of pulmonary conditions (e.g. pneumonia, with or without aspiration).

### ***Cerebrovascular Adverse Events (CVAE), including Stroke, in Elderly Patients with Dementia***

An approximately 3-fold increase of cerebrovascular adverse events has been seen in randomised placebo-controlled clinical trials in the dementia population with some atypical antipsychotics. The mechanism for this increased risk is not known. An increased risk cannot be excluded for other antipsychotics or other patient populations. Droperidol should be used with caution in patients with risk factors for stroke.

### ***Pregnancy and Lactation (Category C)***

Droperidol is not teratogenic in animals and has been used in a few isolated instances in pregnant women; as with all other pharmacological agents, the benefits of using DROLEPTAN in these situations should be carefully weighed against the possible hazards.

Butyrophenones are excreted in breast milk. If the use of DROLEPTAN is essential, breast-feeding should be avoided.

### ***Effects on Vigilance***

Patients should only drive or operate a machine if sufficient time has elapsed after the administration of DROLEPTAN, i.e. about 10 hours after a dose of up to 5 mg and 24 hours after higher doses.

### ***Use in Children***

The safety of DROLEPTAN in children younger than two years of age has not been established. Therefore, this agent is not recommended in this age group.

### ***Use in the Elderly***

The initial dose of DROLEPTAN should be appropriately reduced in elderly, debilitated and other poor-risk patients. The effect of the initial dose should be considered in determining incremental doses.

## **Adverse Effects**

### ***CNS Effects***

DROLEPTAN may produce Parkinsonian or dyskinetic extrapyramidal side effects. These are readily and completely reversible by treatment with an anti-Parkinsonian agent of the anticholinergic type. In rare cases, paradoxical reactions, including hallucinations, restlessness and isolated cases of anxiety have been observed.

### ***Neuroleptic Malignant Syndrome***

Like other neuroleptic agents, DROLEPTAN has been associated with rare cases of the neuroleptic malignant syndrome, a rarely occurring idiosyncratic response characterised by hyperthermia, generalised muscle rigidity, autonomic instability, and altered consciousness. Hyperthermia is often an early warning sign of this syndrome. In such cases, DROLEPTAN treatment should be discontinued immediately and appropriate supportive therapy and careful monitoring should be initiated.

### ***Tardive Dyskinesia***

As with other neuroleptic agents, tardive dyskinesia may appear in some patients on long-term therapy or after discontinuation of treatment. The syndrome is mainly characterised by involuntary rhythmical movements of the tongue, face, mouth or jaw. The symptoms may persist in some patients. The syndrome may be masked when treatment is reinstated, when the dosage is increased or when a switch is made to a different antipsychotic agent. Treatment should be discontinued as soon as possible.

### ***Cardiovascular Effects***

Mild to moderate hypotension and occasionally (reflex) tachycardia have been observed following administration of droperidol (see WARNINGS AND PRECAUTIONS). Cases of QT interval prolongation, ventricular arrhythmias and sudden death have been reported rarely. They may occur more frequently with high doses and in predisposed patients.

## ***Endocrine Effects***

Hormonal effects of antipsychotic neuroleptic agents include hyperprolactinaemia which may cause galactorrhoea, gynaecomastia and oligo- or amenorrhoea. Very rare cases of Syndrome of Inappropriate ADH Secretion have been reported.

## ***Miscellaneous***

In rare cases, body temperature dysregulation and hypersensitivity reactions such as rash or angio-oedema have been reported. Other side effects include cardiac arrest, torsades de pointes and hyperglycaemia.

## **Interactions**

Medicines known to prolong the QT interval are contraindicated with DROLEPTAN. Examples include certain antiarrhythmics, such as those of Class IA (such as quinidine, disopyramide and procainamide) and Class III (such as amiodarone and sotalol); tricyclic antidepressants (such as amitriptyline); certain tetracyclic antidepressants (such as maprotiline); certain antipsychotic medications (such as phenothiazines, pimozide and sertindole); certain antihistamines (such as astemizole and terfenadine); cisapride, bepridil, halofantrine and sparfloxacin.

DROLEPTAN may potentiate the action of sedative agents (including barbiturates, benzodiazepines, morphinomimetics); the same applies to antihypertensive agents, whereby orthostatic hypotension may ensue. Like other sedative agents, DROLEPTAN may potentiate respiratory depression caused by opioids.

Since DROLEPTAN blocks dopamine receptors, it may inhibit the action of dopamine agonists, such as bromocriptine, lisuride and levodopa.

Theoretically, certain agents (e.g. phenobarbitone, carbamazepine, phenytoin), as well as smoking and alcohol consumption, which stimulate metabolising enzymes in the liver, may enhance the metabolic breakdown of neuroleptic agents, possibly necessitating adjustment of the dose.

## **Overdosage**

### ***Symptoms***

The manifestations of DROLEPTAN overdosage are an extension of its pharmacological actions. Symptoms of accidental overdosage are psychic indifference with a transition to sleep, sometimes in association with lowered blood pressure. At higher doses or in sensitive patients, extrapyramidal disorders may occur (salivation, abnormal movements, sometimes muscle rigidity). Convulsions may occur at toxic doses. Cases of QT-interval prolongation, ventricular arrhythmias and sudden death have been reported rarely.

### ***Treatment***

No specific antidote is known. However, when extrapyramidal reactions occur, an anticholinergic agent should be administered.

Immediate cardiac monitoring by ECG is recommended for any patient who has received an overdose of DROLEPTAN. The ECG should be evaluated for possible QT-prolongation and the patient should be evaluated for factors that could predispose to the occurrence of torsade de pointes, such as electrolyte disturbances (especially hypokalaemia or hypomagnesaemia) and bradycardia.

Cases of profound hypotension should be treated by boosting circulation volume and taking other appropriate measures. In the event of hypoventilation or apnoea, oxygen should be administered and respiration should be assisted or controlled as indicated. A patent airway must be maintained; an oropharyngeal airway or endotracheal tube might be indicated. If required, the patient should be observed carefully for 24 hours or longer; body warmth and adequate fluid intake should be maintained.

## **Pharmaceutical Precautions**

Store below 25°C.

### ***Package Quantities***

DROLEPTAN droperidol injection - 2.5 mg in 1 mL brown glass ampoules in cartons of 10.

### ***Other Ingredients***

DROLEPTAN droperidol injection 2.5 mg in 1 mL also contains mannitol, tartaric acid and water for injections.

## **Medicine Classification**

Prescription Medicine

## **Name and Address**

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## **Date of Preparation**

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