SUMMARY OF PRODUCT CHARACTERISTICS

1 NAME OF THE MEDICINAL PRODUCT
Maxolon Injection

2 QUALITATIVE AND QUANTITATIVE COMPOSITION
Each 2ml ampoule contains Metoclopramide Hydrochloride BP equivalent to 10mg of the anhydrous substance.
Excipient(s) with known effect
Sodium Metabisulphite- 1.48mg (0.148 % w/v)
For the full list of excipients, see section 6.1

3 PHARMACEUTICAL FORM
Clear colourless solution for intramuscular or intravenous administration.

4 CLINICAL PARTICULARS
4.1 Therapeutic indications

Adult population
Maxolon is indicated in adults for:
- Prevention of post-operative nausea and vomiting (PONV)
- Symptomatic treatment of nausea and vomiting, including acute migraine induced nausea and Vomiting
- Prevention of radiotherapy induced nausea and vomiting (RINV).

Diagnostic procedures:
Radiology
Duodenal intubation
'Maxolon' speeds up the passage of a barium meal by increasing the rate of gastric emptying, co-ordinating peristalsis and dilating the duodenal bulb.
'Maxolon' also facilitates duodenal intubation procedures.

Paediatric population
Maxolon is indicated in children (aged 1-18 years) for:
- Prevention of delayed chemotherapy induced nausea and vomiting (CINV) as a second line option
- Treatment of established post-operative nausea and vomiting (PONV) as a second line option
Metoclopramide should not be used in children younger than 1 year as there are insufficient data regarding efficacy and safety of the product in this population.

4.2 Posology and method of administration

Posology:

**Route of administration:**
The solution can be administered intravenously or intramuscularly.
Intravenous doses should be administered as a slow bolus (at least over 3 minutes).

**All indications (adult population)**
For prevention of PONV a single dose of 10mg is recommended.
For the symptomatic treatment of nausea and vomiting, including acute migraine induced nausea and vomiting and for the prevention of radiotherapy induced nausea and vomiting (RINV): the recommended single dose is 10mg, repeated up to three times daily.
The maximum recommended daily dose is 30mg or 0.5mg/kg body weight.
The injectable treatment duration should be as short as possible and transfer to oral or rectal treatment should be made as soon as possible.

**All indications (paediatric patients aged 1-18 years)**
The recommended dose is 0.1 to 0.15mg/kg body weight, repeated up to three times daily by intravenous route. The maximum dose in 24 hours is 0.5mg/kg body weight.

**Dosing table**

<table>
<thead>
<tr>
<th>Age</th>
<th>Body Weight</th>
<th>Dose</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3 years</td>
<td>10-14 kg</td>
<td>1 mg</td>
<td>Up to 3 times daily</td>
</tr>
<tr>
<td>3-5 years</td>
<td>15-19 kg</td>
<td>2 mg</td>
<td>Up to 3 times daily</td>
</tr>
<tr>
<td>5-9 years</td>
<td>20-29 kg</td>
<td>2.5 mg</td>
<td>Up to 3 times daily</td>
</tr>
<tr>
<td>9-18 years</td>
<td>30-60 kg</td>
<td>5 mg</td>
<td>Up to 3 times daily</td>
</tr>
<tr>
<td>15-18 years</td>
<td>Over 60kg</td>
<td>10 mg</td>
<td>Up to 3 times daily</td>
</tr>
</tbody>
</table>

The maximum treatment duration is 48 hours for treatment of established post operative nausea and vomiting (PONV).
The maximum treatment duration is 5 days for prevention of delayed chemotherapy induced nausea and vomiting (CINV).

**Method of administration:**
A minimal interval of 6 hours between two administrations is to be respected, even in case of vomiting or rejection of the dose (see section 4.4).

**Diagnostic indications:**
A single dose of 'Maxolon' may be given 5-10 minutes before the examination.
Subject to body weight consideration, (see above)

**Special population**
Elderly
In elderly patients a dose reduction should be considered, based on renal and hepatic function and overall frailty.

**Renal impairment:**
In patients with end stage renal disease (Creatinine clearance ≤15 ml/min), the daily dose should be reduced by 75%.
In patients with moderate to severe renal impairment (Creatinine clearance 15-60ml/min), the dose should be reduced by 50% (see section 5.2).

**Hepatic impairment:**
In patients with severe hepatic impairment, the dose should be reduced by 50% (see section 5.2).

**Paediatric population**
Metoclopramide is contraindicated in children aged less than 1 year (see section 4.3).

4.3 Contraindications
- Hypersensitivity to the active substance or to any of the excipients listed in section 6.1
- Gastrointestinal haemorrhage, mechanical obstruction or gastro-intestinal perforation for which the stimulation of gastrointestinal motility constitutes a risk
- Confirmed or suspected pheochromocytoma, due to the risk of severe hypertension episodes
- History of neuroleptic or metoclopramide-induced tardive dyskinesia
- Epilepsy (increased crises frequency and intensity)
- Parkinson’s disease
- Combination with levodopa or dopaminergic agonists (see section 4.5)
- Known history of methaemoglobinaemia with metoclopramide or of NADH cytochrome-b5 deficiency.
- Use in children less than 1 year of age due to an increased risk of extrapyramidal disorders (see section 4.4)

‘Maxolon’ should not be used during the first three to four days following operations such as pyloroplasty or gut anastomosis as vigorous muscular contractions may not help healing.

4.4 Special warnings and precautions for use

**Neurological Disorders**
Extrapyramidal disorders may occur, particularly in children and young adults, and/or when high doses are used. These reactions occur usually at the beginning of the treatment and can occur after a single administration. Metoclopramide should be discontinued immediately in the event of extrapyramidal symptoms. These effects are generally completely reversible after treatment discontinuation, but may require a symptomatic treatment (benzodiazepines in children and/or anticholinergic anti-Parkinsonian medicinal products in adults).
The time interval of at least 6 hours specified in the section 4.2 should be respected between each metoclopramide administration, even in case of vomiting and rejection of the dose, in order to avoid overdose.

Prolonged treatment with metoclopramide may cause tardive dyskinesia, potentially irreversible, especially in the elderly. Treatment should not exceed 3 months because of the risk of tardive dyskinesia (see section 4.8). Treatment must be discontinued if clinical signs of tardive dyskinesia appear.

Neuroleptic malignant syndrome has been reported with metoclopramide in combination with neuroleptics as well as with metoclopramide monotherapy (see section 4.8). Metoclopramide should be discontinued immediately in the event of symptoms of neuroleptic malignant syndrome and appropriate treatment should be initiated.

Special care should be exercised in patients with underlying neurological conditions and in patients being treated with other centrally-acting drugs (see section 4.3)

**Symptoms of Parkinson’s disease may also be exacerbated by metoclopramide.**

**Methemoglobinemia**
Methemoglobinemia which could be related to NADH cytochrome b5 reductase deficiency has been reported. In such cases, metoclopramide should be immediately and permanently discontinued and appropriate measures initiated (such as treatment with methylene blue).

**Cardiac Disorders**
There have been reports of serious cardiovascular undesirable effects including cases of circulatory collapse, severe bradycardia, cardiac arrest and QT prolongation following administration of metoclopramide by injection, particularly via the intravenous route (see section 4.8).

Special care should be taken when administering metoclopramide, particularly via the intravenous route to the elderly population, to patients with cardiac conduction disturbances (including QT prolongation), patients with uncorrected electrolyte imbalance, bradycardia and those taking other drugs known to prolong QT interval.

Intravenous doses should be administered as a slow bolus (at least over 3 minutes) in order to reduce the risk of adverse effects (e.g. hypotension, akathisia).

**Renal and Hepatic Impairment**
In patients with renal impairment or with severe hepatic impairment, a dose reduction is recommended (see section 4.2).

Metoclopramide may cause elevation of serum prolactin levels.

Care should be exercised when using Maxolon in patients with a history of atopy (including asthma) or porphyria.

Special care should be taken when administering Maxolon intravenously to patients with “sick sinus syndrome” or other cardiac conduction disturbances.

### 4.5 Interaction with other medicinal products and other forms of interaction
**Contraindicated combination**
Levodopa or dopaminergic agonists and metoclopramide have a mutual antagonism (see section 4.3).

**Combination to be avoided**
Alcohol potentiates the sedative effect of metoclopramide.

**Combination to be taken into account**
Due to the prokinetic effect of metoclopramide, the absorption of certain drugs may be modified.

**Anticholinergics and morphine derivatives**
Anticholinergics and morphine derivatives may have both a mutual antagonism with metoclopramide on the digestive tract motility.

Central nervous system depressants (morphine derivatives, anxiolytics, sedative H1 antihistamines, sedative antidepressants, barbiturates, clonidine and related).

Sedative effects of Central Nervous System depressants and metoclopramide are potentiated.

**Neuroleptics**
Metoclopramide may have an additive effect with other neuroleptics on the occurrence of extrapyramidal disorders.

**Serootonergic drugs**
The use of metoclopramide with serotonergic drugs such as SSRIs may increase the risk of serotonin syndrome.

**Digoxin**
Metoclopramide may decrease digoxin bioavailability. Careful monitoring of digoxin plasma concentration is required.

**Cyclosporine**
Metoclopramide increases cyclosporine bioavailability (Cmax by 46% and exposure by 22%). Careful monitoring of cyclosporine plasma concentration is required. The clinical consequence is uncertain.

**Mivacurium and suxamethonium**
Metoclopramide injection may prolong the duration of neuromuscular block (through inhibition of plasma cholinesterase).

**Strong CYP2D6 inhibitors**
Metoclopramide exposure levels are increased when co-administered with strong CYP2D6 inhibitors such as fluoxetine and paroxetine. Although the clinical significance is uncertain, patients should be monitored for adverse reactions.

The effects of certain other drugs with potential central stimulant effects, e.g. monoamine oxidase inhibitors and sympathomimetics, may be modified when prescribed with metoclopramide and their dosage may need to be adjusted accordingly.

‘Maxolon’ may reduce plasma concentrations of atovaquone.

---

4.6 **Fertility, pregnancy and lactation**

**Pregnancy**
A large amount of data on pregnant women (more than 1000 exposed outcomes) indicates no malformative toxicity, nor foetotoxicity. Metoclopramide can be used during pregnancy if clinically needed. Due to pharmacological properties (as other neuroleptics), in case of metoclopramide administration at the end of pregnancy, extrapyramidal syndrome in newborn cannot be excluded.

Metoclopramide should be avoided at the end of pregnancy. If metoclopramide is used, neonatal monitoring should be undertaken.

Breastfeeding
Metoclopramide is excreted in breast milk at low level. Adverse reactions in the breast-fed baby cannot be excluded. Therefore metoclopramide is not recommended during breastfeeding. Discontinuation of metoclopramide in breastfeeding women should be considered.

4.7 Effects on ability to drive and use machines

Metoclopramide has moderate influence on the ability to drive and use machines.
Metoclopramide may cause drowsiness, dizziness, dyskinesia and dystonias which could affect the vision and also interfere with the ability to drive and operate machinery.

4.8 Undesirable effects

Adverse reactions listed by System Organ Class. Frequencies are defined using the following convention: very common (≥1/10), common (≥1/100, <1/10), uncommon (≥1/1000, <1/100), rare (≥1/10000, <1/1000), very rare (≥1/100000, <1/10000), not known (cannot be estimated from the available data).

<table>
<thead>
<tr>
<th>System Organ Class</th>
<th>Frequency</th>
<th>Adverse reactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood and lymphatic system disorders</td>
<td>Not known</td>
<td>Methaemoglobinaemia, which could be related to NADH cytochrome b5 reductase deficiency, particularly in neonates (see section 4.4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sulfhaemoglobinaemia, mainly with concomitant administration of high doses of sulphur-releasing medicinal products</td>
</tr>
<tr>
<td>Cardiac disorders</td>
<td>Uncommon</td>
<td>Bradycardia, particularly with intravenous formulation</td>
</tr>
<tr>
<td></td>
<td>Not known</td>
<td>Cardiac arrest, occurring shortly after injectable use, and which can be subsequent to bradycardia (see section 4.4); Atioventricular block, Sinus arrest particularly with intravenous formulation; Electrocardiogram QT</td>
</tr>
</tbody>
</table>
### Endocrine disorders*

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncommon</td>
<td>Amenorrhoea, Hyperprolactinaemia,</td>
</tr>
<tr>
<td>Rare</td>
<td>Galactorrhoea</td>
</tr>
<tr>
<td>Not known</td>
<td>Gynaecomastia</td>
</tr>
</tbody>
</table>

### Gastrointestinal disorders

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
<td>Diarrhoea</td>
</tr>
</tbody>
</table>

### General disorders and administration site conditions

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
<td>Asthenia</td>
</tr>
</tbody>
</table>

### Immune System disorders

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncommon</td>
<td>Hypersensitivity</td>
</tr>
<tr>
<td>Not known</td>
<td>Anaphylactic reaction (including anaphylactic shock particularly with intravenous formulation)</td>
</tr>
</tbody>
</table>

### Nervous system disorders

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very common</td>
<td>Somnolence</td>
</tr>
<tr>
<td>Common</td>
<td>Extrapyramidal disorders (particularly in children and young adults and/or when the recommended dose is exceeded, even following administration of a single dose of the drug) (see section 4.4), Parkinsonism, Akathisia</td>
</tr>
<tr>
<td>Uncommon</td>
<td>Dystonia, Dyskinesia, Depressed level of consciousness</td>
</tr>
<tr>
<td>Rare</td>
<td>Convulsion especially in epileptic patients</td>
</tr>
<tr>
<td>Not known</td>
<td>Tardive dyskinesia which may be persistent, during or after prolonged treatment, particularly in elderly patients (see section 4.4), Neuroleptic malignant syndrome (see section 4.4)</td>
</tr>
</tbody>
</table>

### Psychiatric disorders

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
<td>Depression</td>
</tr>
<tr>
<td>Uncommon</td>
<td>Hallucination</td>
</tr>
<tr>
<td>Rare</td>
<td>Confusional state</td>
</tr>
</tbody>
</table>

### Vascular disorders

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common:</td>
<td>Hypotension, particularly with intravenous formulation</td>
</tr>
<tr>
<td>Not known</td>
<td>Shock, syncope after injectable use Acute hypertension in patients with phaeochromocytoma (see section 4.3), Transient increase in blood pressure</td>
</tr>
</tbody>
</table>
*Endocrine disorders during prolonged treatment in relation with hyperprolactinaemia (amenorrhoea, galactorrhoea, gynaecomastia).

The following reactions, sometimes associated, occur more frequently when high doses are used:
- Extrapyramidal symptoms: acute dystonia and dyskinesia, parkinsonian syndrome, akathisia, even following administration of a single dose of the medicinal product, particularly in children and young adults (see section 4.4).
- Drowsiness, decreased level of consciousness, confusion, hallucination.

**Reporting of suspected adverse reactions**

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the Yellow Card Scheme Website: www.mhra.gov.uk/yellowcard.

### 4.9 Overdose

**Symptoms**

Extrapyramidal disorders, drowsiness, decreased level of consciousness, confusion, hallucination, and cardio-respiratory arrest may occur.

**Management**

In case of extrapyramidal symptoms related or not to overdose, the treatment is only symptomatic (benzodiazepines in children and/or anticholinergic antiparkinsonian medicinal products in adults).

A symptomatic treatment and a continuous monitoring of the cardiovascular and respiratory functions should be carried out according to clinical status.

### 5 PHARMACOLOGICAL PROPERTIES

#### 5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Agents stimulating gastro-intestinal motility

ATC code: A03FA01

The action of metoclopramide is closely associated with parasympathetic nervous control of the upper gastro-intestinal tract, where it has the effect of encouraging normal peristaltic action. This provides for a fundamental approach to the control of those conditions where disturbed gastro-intestinal motility is a common underlying factor.

#### 5.2 Pharmacokinetic properties

Biotransformation:

Metoclopramide is metabolised in the liver and the predominant route of elimination of metoclopramide and its metabolites is via the kidney.

**Renal impairment**
The clearance of metoclopramide is reduced by up to 70% in patients with severe renal impairment, while the plasma elimination half-life is increased (approximately 10 hours for a creatinine clearance of 10-50 mL/minute and 15 hours for a creatinine clearance <10 mL/minute).

**Hepatic impairment**
In patients with cirrhosis of the liver, accumulation of metoclopramide has been observed, associated with a 50% reduction in plasma clearance.

5.3 **Preclinical safety data**
No additional data available

6 **PHARMACEUTICAL PARTICULARS**

6.1 **List of excipients**
Sodium Chloride
Sodium Metabisulphite
Water for injection

6.2 **Incompatibilities**
Not applicable

6.3 **Shelf life**
60 months

6.4 **Special precautions for storage**
Do not store above 25°C. If ampoules are removed from their carton, they should be stored away from light. If inadvertent exposure occurs, ampoules showing discolouration must be discarded.

6.5 **Nature and contents of container**
Clear glass 2ml ampoules (Ph. Eur. Type I neutral glass) in packs of 1 or 12 ampoules or 1 ampoule plus 12 tablets in an aluminium canister as a home visit pack.

Not all pack sizes may be marketed

6.6 **Special precautions for disposal and other handling**
Protect from light

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.
7 MARKETING AUTHORISATION HOLDER
Amdipharm UK Limited
Capital House
85 King William Street
London
EC4N 7BL
UK

8 MARKETING AUTHORISATION NUMBER(S)
PL 20072/0051

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION
16/06/1995

10 DATE OF REVISION OF THE TEXT
15/09/2016