Part II

Summary of Product Characteristics

1 NAME OF THE MEDICINAL PRODUCT

Isoprenaline Minijet®, solution for injection or infusion

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Isoprenaline Hydrochloride 20 micrograms per ml.

For excipients, see 6.1.

3 PHARMACEUTICAL FORM

Solution for injection or infusion
The container is specially designed for use with the IMS Minijet injector supplied.
The product may also be diluted (see 6.6).

4 CLINICAL PARTICULARS

4.1 Therapeutic Indications

For the short term, emergency treatment of heart block, severe bradycardia and the temporary control of Stokes-Adams syndrome.

4.2 Posology and method of administration

Widely ranging doses have been used successfully. The dose/infusion rate should be adjusted according to response. ECG should be monitored during treatment.

Adults: initial bolus of 20mcg then subsequent doses of 10-200mcg by intravenous injection.
or
0.5-10mcg/minute by intravenous infusion.

Children: initial bolus of 10mcg then subsequent doses of 5-100mcg by intravenous injection.
or
0.25-5mcg/minute by intravenous infusion.

4.3 Contraindications

Contraindications are relative, as Isoprenaline is only intended for short term emergency treatment. Known hypersensitivity, recent myocardial infarction, pre-existing tachyarrhythmias.

4.4 Special warnings and precautions for use

Isoprenaline should be administered with caution in elderly patients, patients with diabetes or hyperthyroidism or who are otherwise hyper-responsive to sympathomimetic drugs, and patients suffering from cardiovascular disease such as ischaemic heart disease, arrhythmia or tachycardia, occlusive vascular disease including arteriosclerosis, those on digitalis, hypertension or aneurysms. Anginal pain may be precipitated.

4.5 Interaction with other medicinal products and other forms of interaction

Isoprenaline should not be administered simultaneously with adrenaline, other sympathomimetic amines or tricyclic antidepressants as their combined effect may induce cardiac arrhythmia. Use with extreme caution in patients receiving cyclopropane or halogenated anaesthetics as arrhythmias may occur. Beta-blockers such as propranolol may antagonise the effects of isoprenaline.

4.6 Pregnancy and lactation

No teratogenic effects have been observed with isoprenaline but the use of this drug in pregnant women or women of childbearing age requires that the expected benefit be weighed against the potential risk to mother and child. Beta-agonists may be used in late pregnancy as tocolytics.

4.7 Effects on ability to drive and use machines

Not applicable; this preparation is intended for use only in an emergency.

4.8 Undesirable effects

Disturbances of cardiac rhythm and rate may result in palpitations and ventricular tachycardia. Angina may be precipitated if tachycardia occurs. In patients with acute myocardial infarction, isoprenaline may increase the ischaemic injury to the myocardium. Isoprenaline may cause nervousness, restlessness, insomnia, anxiety, tension, fear or excitement. Rarely sweating, weakness, dizziness, mild tremor, headache, flushing, nausea, vomiting, tinnitus, light-headedness or asthenia may occur.

Paradoxically, in some patients, isoprenaline has been reported to precipitate Stokes-Adams attacks during normal sinus rhythm or transient heart block.

4.9 Overdose

Symptoms: excessive doses of isoprenaline may result in disturbances of cardiac rhythm and rate resulting in marked tachycardia, tremor, excitement, restlessness, anxiety, headache and nausea. Profound hypotension may occur and shock-like symptoms may develop.

Treatment: most toxic effects subside on stopping treatment; general supportive measures should be employed. Sedatives such as barbiturates may be administered for CNS stimulation. A beta-adrenergic blocker such as propranolol may be administered, but if the patient is asthmatic, a selective beta-blocker such as metoprolol should be used.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Isoprenaline is a potent agonist on all beta-adrenoreceptors. It acts on beta-1-adrenergic receptors in the heart, producing an increase in heart rate via a positive chronotropic effect through the sinoatrial node and an increase in force of contraction via a positive inotropic effect on the myocardium. Isoprenaline increases conduction velocity and shortens the refractory period of the atrioventricular node.

Isoprenaline also dilates peripheral blood vessels by an action on beta-2-adrenergic receptors. This action, along with the cardio-stimulant actions, may provide beneficial effects in shock due to low cardiac output and intensive vasoconstriction which persists after adequate fluid replenishment.

The action on beta-adrenoceptors in the lungs reverses bronchospasm.

5.2 Pharmacokinetic properties

Parenteral isoprenaline is rapidly taken up by the tissues such as smooth muscle and cardiac tissue. About 68% is plasma bound. Plasma levels decline biphasically, the half life of the initial phase is 5 minutes and of the second phase is 2.5 hours. It is metabolised in the liver, lungs and other tissues. Excretion is renal. After i.v. administration, about 40 to 50% of the dose is excreted unchanged; 75% is excreted in 24 hours.

5.3 Preclinical safety data

Toxicity studies in animals have not demonstrated any toxic or mutagenic effects in the therapeutic dose range; there is no evidence of carcinogenic potential. Administration to rats and rabbits caused myocardial necrosis, but only at doses that would be lethal to humans.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Sodium Citrate Dihydrate
Citric Acid Monohydrate
Sodium Chloride
Sodium Bisulphite
Water for Injection

6.2 Incompatibilities

None known.

6.3 Shelf Life

12 months.

6.4 Special precautions for storage

Do not store above 25°C.

This product should be used immediately after opening.
Discard any unused product.

6.5 Nature and contents of container

The solution is contained in a USP type I glass vial with an elastomeric closure which meets all the relevant USP specifications. The product is available as 10ml.

6.6 Special precautions for disposal of a used medicinal product or waste materials derived from such medicinal product and other handling of the product

Do not use if the injection is brown or contains a precipitate.

The container is specially designed for use with the IMS Minijet injector.
It can be diluted using glucose 5% or sodium chloride and glucose.

To use, remove the protective plastic caps from the end of the glass vial and the end of the IMS Minijet injector.

Carefully thread the glass vial into the injector three half turns or until the needle penetrates the stopper.

Remove cap and expel air. The product is now ready for use.

7 MARKETING AUTHORISATION HOLDER

International Medication Systems (UK) Limited
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8 MARKETING AUTHORISATION NUMBER

PA 255/3/3

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

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Date of last renewal: 08 September 2002

10 DATE OF REVISION OF THE TEXT

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