Summary of Product Characteristics

1 NAME OF THE MEDICINAL PRODUCT

Adrenaline (Epinephrine) Injection 1:1,000 Minijet (1ml)

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Adrenaline (Epinephrine) 1 mg per ml.

Excipients: sodium metabisulfite (E222) 2.5 mg in 1 ml and total sodium 3 mg in 1 ml.

For the full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Solution for injection
A clear, colourless, sterile solution.

4 CLINICAL PARTICULARS

4.1 Therapeutic Indications

Emergency treatment of anaphylaxis or acute angioneurotic oedema with airways obstruction, or acute allergic reactions.

4.2 Posology and method of administration

For the relief of life-threatening angioneurotic oedema and anaphylactic shock, adrenaline should be administered by intramuscular injection.

For acute allergic reactions due to insect stings etc.: Intramuscular or subcutaneous injection.

The presentation with the 1^2 integral needle is for paramedic use by subcutaneous or intramuscular injection.

Adults and children over 12 years: 0.5 ml (0.5 mg), administered slowly. The dose may be repeated every 5 to 15 minutes as needed.
This presentation may not be suitable for small or prepubertal patients over 12 years of age who require a smaller dose.

Elderly: as for adults, use with caution.

Children (up to age of 12): Not recommended.

4.3 Contraindications

Contraindications are relative as this product is intended for use in life-threatening emergencies.

Other than in the emergency situation, the following contraindications should be considered: hyperthyroidism, hypertension, ischaemic heart disease, diabetes mellitus, closed angleglaucoma and hypersensitivity to sympathomimetic amines.

4.4 Special warnings and precautions for use

These special warnings and precautions are relative as this product is intended for use in life-threatening situations. Administer slowly with caution to elderly patients and to patients with ischaemic heart disease, hypertension, diabetes mellitus, hyperthyroidism or psychoneurosis.

Use with extreme caution in patients with long-standing bronchial asthma and emphysema who have developed degenerative heart disease. Anginal pain may be induced when coronary insufficiency is present.

Use with caution in patients with pre-existing cardiac arrhythmias.

Tissue necrosis at injection site may arise if this product is administered to an inappropriate injection site such as digits or buttocks.

Administer with caution in patients suffering from autonomic dysreflexia (hyperreflexia), particularly in spinal cord injury (e.g.,tetraplegics). Patients with hypersensitivity to sulfites and prostatic hypertrophy or urination difficulty. Endotracheal administration of adrenaline can contaminate the colorimeter carbon dioxide detector and lead to its false positive colour change (fixed yellow discoloration).

This medicinal product contains less than 1 mmol sodium per ml (3mg/ml), i.e. essentially `sodium-free'

This medicinal product contains sodium metabisulfite which may rarely cause severe hypersensitivity reactions and bronchospasm.

4.5 Interaction with other medicinal products and other forms of interactions

The effects of adrenaline may be potentiated by tricyclic antidepressants.

Volatile liquid anaesthetics such as halothane and other anaesthetics such as cyclopropane and trichloroethylene increase the risk of adrenaline-induced ventricul ararrhythmias and acute pulmonary oedemaifhypoxiais present. Severe hypertension and bradycardia may occur with non-selective beta- blocking drugs such as propranolol. Propranolol also inhibits the bronchodilator effect of adrenaline. The risk of cardiac arrhythmi as is higher when adrenaline is given to patients receiving digoxin, quinidine, fluorohydrocarbons or cocaine. Adrenaline-induced hyperglycaemia may lead to loss of blood-sugarcontrol in diabetic patients treated with hypoglycaemic agents.

The vasoconstrictor and pressor effects of adrenaline, mediated by its alpha-adrenergicaction, may be enhanced by concomitant administration of drugs with similar effects, such as ergot alkaloids or oxytocin.

Adrenaline specifically reverses the antihypertensive effects of adrenergic neuroneblockers such as guanethidine with the risk of severe hypertension.

Concurrent use or use within 2 weeks of monoamine oxidase inhibitor increases risk of adverse events. Sympathomimetic drugs (e.g. isoproterenol) increase the risk of serious cardiac arrhythmias. Alpha blockers increase the risk of hypotension and tachycardia. Drugs which cause potassium loss (corticosteroids, potassium-depleting diuretic, aminophylline, theophylline) increases the risk of hypokalemia. Adrenaline increases the risk of cardiac adverse effects of levodopa.

Use of Entacapone may potentiate the chronotropic and arrhtmogenic effects of adrenaline.

4.6 Fertility, pregnancy and lactation

Adrenaline crosses the placenta. There is some evidence of a slightly increased incidence of congenital abnormalities. Injection of adrenaline may cause foetal tachycardia, cardiac irregularities, extrasystoles and louder heart sounds. In labour, adrenaline may delay the second stage. Adrenaline should only be used in pregnancy if the potential benefits outweigh the risks to the foetus.

Adrenaline is excreted in breast milk, but as pharmacologically active plasma concentrations are not achieved by the oral route, the use of adrenaline in breast-feeding mothers is presumed to be safe.

4.7 Effects on ability to drive and use machines

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

4.8 Undesirable effects

The potentially severe adverse effects of adrenaline arise from its effect upon blood pressure and cardiac rhythm. Anginal pain, Ventricular fibrillation, myocardial ischaemia and myocardial infarction may occur.

Severe hypertension may lead to cerebral haemorrhage and pulmonary oedema. Stress cardiomyopathy, bowel necrosis, pallor and thrombocytosis. Symptomatic adverse effects are anxiety, dyspnoea, restlessness, palpitations, tachycardia, tremor, weakness, dizziness, headache and cold extremities, nausea, vomiting, sweating and local ischaemicnecrosis.

Other effects that may occur include difficulty in micturition and urinary retention.

Biochemical effects include inhibition of insulin secretion and hypoglycaemia even with low doses, gluconeogenesis, glycolysis, lipolysis and ketogenesis.

Please cross refer to section 4.4

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 HPRA Pharmacovigilance, Earlsfort Terrace, IRL - Dublin 2; Tel: +353 1 6764971; Fax: +353 1 6762517. Website: www.hpra.ie; E-mail: medsafety@hpra.ie.

4.9 Overdose

Symptoms: cardiac arrhythmias leading to ventricular fibrillation and death, severe hypertension leading to pulmonary oedema and cerebral haemorrhage.

Treatment: combined alpha- and beta-adrenergic blocking agents such as labetalol may counteract the effects of adrenaline, or a beta-blocking agent may be used to treat any supraventricular arrhythmias and phentolamine to control the alpha-mediated effects on the peripheral circulation. Rapidly acting vasodilators such as nitrates and sodium nitroprusside may also be helpful.

Immediate resuscitation support must be available.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

ATC code: C01 CA24

Adrenaline is a direct-acting sympathomimetic agent exerting its effect on alpha- and beta-adrenoceptors. Major effects are increased systolic blood pressure, reduced diastolic pressure, tachycardia, hyperglycaemia and hypokalaemia. It is a powerful cardiac stimulant. It has vasopressor properties and is a bronchodilator.

5.2 Pharmacokinetic properties

Adrenaline is rapid in onset and of short duration and is rapidly distributed to the heart, spleen, several glandular tissues and adrenergic nerves. It crosses the placenta and is excreted in breast milk. It is approximately 50% bound to plasma proteins. The onset of action is rapid and after i.v. infusion the half-life is approximately 5-10 minutes.

Adrenaline is rapidly metabolised in the liver and tissues by oxidative deamination and O-methylation followed by reduction or by conjugation with glucuronic acid or sulfate. Up to 90% of the i.v. dose is excreted in the urine as metabolites.

5.3 Preclinical safety data

Not applicable since Adrenaline (Epinephrine) Injection has been used in clinical practice for many years and its effects in man are well known.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Citric acid monohydrate
Sodium citrate (E331)
Sodium chloride
Sodium metabisulfite (E223)
Dilute hydrochloric acid (for pH adjustment)
Water for injection

6.2 Incompatibilities

In the absence of compatability studies, this medicinal product must not be mixed with other medicinal products. Adrenaline should not be mixed with sodium bicarbonate; the solution is oxidised to adrenochrome and then forms polymers.

6.3 Shelf life

18 months. The solution should be used immediately after opening. Discard any unused portion.

6.4 Special precautions for storage

Do not store above 25°C. Keep the container in the outer carton in order to protect from light.

6.5 Nature and contents of container

The solutionis contained in a prefilled Type I glass syringe, with a polystyrene plunger rod and latex-free bromobutyl rubber plunger stopper. The syringe is pre-fitted with a 1”passivated stainless steel hypodermic needle within an elastomer needle shield. The prefilled syringe is packed in a polyester container with a sealable polyethylene film.

Each pre-filled syringe contains1 mL or 0.5 ml of Adrenaline (Epinephrine) 1:1,000 solution for injection. One pre-filled syringe percarton. Not all pack sizes may be marketed.

This presentation is for emergency administration by a healthcare professional.

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 solution is discoloured. For single use only.

Any unused product or waste material should be disposed of in accordance with local requirements.

7 MARKETING AUTHORISATION HOLDER

DLRC Pharma Services Limited
Chesterfield House
Clonmannon
Ashford
Wicklow
Ireland

8 MARKETING AUTHORISATION NUMBER

PA22684/001/001.

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 25 January 1978

Date of last renewal: 25 January 2008

10 DATE OF REVISION OF THE TEXT

May 2019