Part II

Summary of Product Characteristics

1 NAME OF THE MEDICINAL PRODUCT

Dextran 40 Intravenous Infusion BP 10% w/v in Glucose Intravenous Infusion BP 5.0% w/v.

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each 1000 ml contains:

Dextran 40 /Dextran 40 for Injection	100	g
Anhydrous glucose	50	g
or		
glucose Monohydrate	55	g

For excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Solution for Infusion.

A clear, colourless, sterile, aqueous solution for infusion.

4 CLINICAL PARTICULARS

4.1 Therapeutic Indications

Dextran 40 is used for early fluid replacement or for plasma volume expansion in the adjunctive treatment of certain types of shock, or in impending shock when whole blood or fluid products are not available, including shock resulting from burns, surgery, haemorrhage or trauma, in which circulating volume deficit is present. It should not replace other forms of therapy known to be of value in the treatment of shock.

It may be used to improve blood flow and tissue function in conditions associated with local ischaemia e.g. peripheral limb ischaemia.

It is also used as a priming fluid either as a sole agent or as an additive in pump oxygenators during extra-corporal circulation.

4.2 Posology and method of administration

Dosage

The recommended dosage is dependant upon the age, weight and clinical condition of the patient.

Hypovolaemic shock
The usual dose is 500 to 1000ml, depending on individual response. This dose should not be exceeded except in unusual circumstances. Recommended dosage to children is 10ml/kg and to babies 5ml/kg.

To improve blood flow and tissue function in burns and conditions associated with local ischaemia
The usual dose is 500ml prior to surgery and 500ml during surgery. Dosage depends on individual patient circumstances and response.

In extracorporeal perfusion
The dose of Dextran 40 Intravenous Infusion BP will depend upon the volume needed to prime the pump oxygenator. Usually, a total dose of 10-20ml per kg of body weight is added to the perfusion circuit. The total Dextran concentration should not exceed 3% and this can be limited and controlled by adding other priming fluids.

Administration

The solution is for administration by intravenous infusion only.

4.3 Contraindications

Dextran 40 Intravenous Infusion BP is contraindicated in the presence of thrombocytopenia, severe congestive heart failure, renal disease with severe oliguria or anuria and where there is known hypersensitivity to Dextran, and in patients receiving heparin or low molecular weight heparins (see below).

4.4 Special warnings and precautions for use

Dextran 40 Intravenous Infusion BP may give rise to anaphylactoid reactions, usually in the first few minutes of infusion, particularly in patients with a history of asthma or allergy. Patients should be carefully supervised and appropriate resuscitatory measures should be immediately available. Less severe side effects such as urticaria, nausea, vomiting, fever, joint pains and flushing may also occur.

Overloading of the circulation with ensuing cardiac distress and pulmonary oedema may occur with this product. It should therefore be given with caution to patients vulnerable to vascular overloading e.g. congestive cardiac failure and renal disease.

Dextran 40 may give rise to renal impairment resulting from tubular damage or more rarely acute glomerulo-nephritis. The danger of the former is increased in the dehydrated/oliguric state, and the product should not be used if diuresis is less than 1500ml/24 hr.

Excessive use of this product may lead to a haemorrhagic diathesis and prolonged bleeding, due to interference with platelet function and plasma clotting factors. It should not be used in conjunction with heparin or low molecular weight heparins.

The presence of Dextran in blood may interfere with blood group typing, when enzymatic methods are used.

This solution is hyperosmotic and dehydration should be corrected before or at least during Dextran infusion.

Dextran infusions produce a progressive dilution of oxygen carrying capacity, coagulation factors and plasma proteins. Deficiencies should be corrected and fluid and electrolyte balance maintained.

4.5 Interaction with other medicinal products and other forms of interaction

Do not use with heparin or low molecular weight heparins (see Section 4.4 above).

Dextran 40 Intravenous Infusion BP has a tendency to crystallise when stored at low temperatures. Storage should therefore be at a constant temperature, not exceeding 25°C. If the solution is cloudy or contains sediment it should not be used.

As with all parenterals, compatibilities should be checked when additives are used. Always discontinue dosage if an adverse reaction occurs.

Thorough and careful mixing of any additives is mandatory. Avoid storage of solutions so prepared.

4.6 Pregnancy and lactation

Safe use of Dextran 40 during pregnancy or lactation has not been established and should not be used unless the potential benefits outweigh the possible risks to the foetus or neonate.

Anaphylactic reactions (see other undesirable effects) during pregnancy have been reported to cause anoxic brain damage which has resulted in death of the foetus in some cases.

4.7 Effects on ability to drive and use machines

Not applicable.

4.8 Undesirable effects

Mild urticarial reactions, rarely severe anaphylactoid reactions, increase in viscosity and specific gravity of urine, reversible tubular vacuolisation, increased serum levels of aspartate or alanine transaminases and occasionally transient acidosis.

As with any prolonged infusion, venous irritation and thrombophlebitis may occur at the injection site.

4.9 Overdose

In the event of an accidental over infusion, treatment should temporarily be either discontinued or rate of infusion decreased significantly, depending on extent of over infusion. The patient should be observed for symptoms and signs of cardiorespiratory decompensation, hepatic and renal functions. Fluid and electrolyte balance should be carefully monitored together with any evidence of bleeding diathesis. Other symptomatic and supportive measures should be provided.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Dextran 40 is known to enhance blood flow by the following mechanisms:

1. Increasing blood volume.
2. Decreasing the viscosity of the blood.
3. Reducing the aggregation of the erythrocytes, by coating them and thereby maintaining their electronegative charge.
4. Increasing capillary perfusion by combinations of the foregoing action.

Advantages over homologous blood and other priming fluids as a primer in pump oxygenation:

1. Decreased destruction of erythrocytes and platelets.
2. Maintenance of the electronegativity of erythrocytes and platelets.

5.2 Pharmacokinetic properties

When administered to a patient in shock, Dextran 40 may increase blood volume, blood pressure, pulse pressure, capillary perfusion, central venous pressure, urinary output and decrease heat rate, peripheral resistance and mean transit time. About 70% of the Dextran 40 administered is excreted in the urine within 24 hours of administration. The remainder is partly excreted in the faeces and partly metabolised.

5.3 Preclinical safety data

Not applicable.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Water for injections
Sodium hydroxide
Hydrochloric acid, concentrated

6.2 Incompatibilities

Do not use additives unless compatibility is known.

Do not administer blood through the same giving set.

6.3 Shelf Life

Unopened: 2 years.

6.4 Special precautions for storage

Do not store above 25°C.

6.5 Nature and contents of container

A clear, collapsible, PVC, container, effectively sealed, available in 500 ml or 1000 ml volumes. The container is sealed in a high density polyethylene or polypropylene overpouch.

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 unless solution is clear and the container is undamaged.

Discard any unused portion.

Do not reconnect partially used bags.

7 MARKETING AUTHORISATION HOLDER

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8 MARKETING AUTHORISATION NUMBER

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