

South Australian Perinatal Practice Guidelines

Fluid management and monitoring in severe preeclampsia

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Introduction

- > Women who have severe preeclampsia should be managed at a tertiary hospital
- > All fluids should be infused using a volumetric infusion pump

Plasma volume expansion

- > The aim is to restore and maintain circulating volume to preserve renal function whilst limiting the potential for pulmonary oedema. The preservation of urine output is secondary to avoiding pulmonary oedema (Confidential Enquiries Into Maternal Deaths 2001)
- > Coexisting complications of anaemia, coagulation defects and hypoalbuminaemia will influence the type of fluid to be administered

Maintenance fluid

- > In general, use maintenance of crystalloid supplemented with appropriate specific fluid products
- > Administer all fluids via a volumetric infusion pump
- > Sodium chloride 0.9 % is the fluid of choice
- > Hartmann's is contraindicated in lactic acidosis and impaired renal function
- > Avoid solutions with high water concentration, e.g. dextrose 4 or 5 %

Rate of infusion

- > Determined by potential for fluid overload and possible requirement for other fluids, e.g. blood products
- > 1 - 1.5 mL / kg / hr provided there is no requirement for other fluid and no evidence of fluid overload
- > 0.5 - 1.0 mL / kg / hr if likely to require other fluids, e.g. blood, albumin, other colloid
- > 0 - 0.5 mL / kg / hr if fluid overloaded or there is left ventricular dysfunction

Specific products and colloids

- > Bolus volume expansion is indicated for correction of circulatory losses, e.g. before regional blockade, vasodilator treatment, wound drain or nasogastric loss
- > Specific blood product deficits should be corrected with appropriate fluid type based on measured losses (see below).
- > In cases of oliguria use boluses of 250 mL over 30-60 minutes. This may be repeated up to a maximum of 1,000-1,500 mL per 24 hours, depending on clinical signs (see section on renal insufficiency below)
- > Gelafusine is the fluid of choice

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Albumin:

- > Specifically indicated for volume expansion in the presence of hypoalbuminaemia (< 22 g / L)
- > Use 4 % solution (500 mL bottle)

Potassium

- > Contraindicated if there is significant renal impairment - electrolytes should be monitored closely
- > Indicated when the serum level is less than 3.0 mmol / L

Reconstituted red blood cells

- > Consider transfusion if haemoglobin < 80 g / L

Fresh frozen plasma

- > Indicated for clinical haemostatic failure
- > Use 2 x 200 mL bags and repeat as required

Platelets

- > Indicated for actual or potential bleeding due to thrombocytopenia
- > Use if platelet count < 10,000 irrespective of any evidence of bleeding
- > Use if platelet count < 50,000 and evidence of bleeding from IV sites, poor post-surgical haemostasis or to cover central venous catheter insertion, epidural removal, surgery
- > Use 6 units and repeat as required

Renal insufficiency

- > Defined as oliguria of < 0.5 mL / kg / hr for 4 consecutive hours (or < 30 mL / hr)
- > Administer oxygen according to medical order. Aim for oxygen saturation of > 96 %
- > Observe for evidence of impending fluid overload:
 - > Decreasing oxygen saturation
 - > Elevated jugular venous pulse (JVP)
 - > Added heart sounds
 - > Basal crepitations
 - > Rise in central venous pressure of > 3 cm water per fluid bolus
- > If filling of left and right ventricles is optimised and oliguria persists:
 - > Consult physician / anaesthetist

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Pulmonary oedema

- > Defined as respiratory distress with tachypnoea, crepitations, desaturation, and chest X-ray features
- > Transfer to a tertiary centre with adult intensive care facilities

Reference

1. Confidential Enquiries into Maternal Deaths. Why mothers die 1997 - 1999. The fifth report of the confidential enquiries into maternal deaths in the United Kingdom. London: RCOG Press; 2001.
Available at: URL: <http://www.cemdm.org.uk>

Version control and change history

PDS reference: OCE use only

Version	Date from	Date to	Amendment
1.0	02 Aug 04	current	Original version