MYOCARDIAL & PULMONARY PRESERVATION -SOLUTIONS, PROTOCOL & CIRCUIT

1. CARDIOPLEGIA SOLUTION

The blood cardioplegia is based upon that used at the Royal Melbourne Hospital.

Blood Cardioplegia Base Solution AHK5560 (500 ml) (Baxter Healthcare Pty Ltd. Toongabbie NSW Australia)

Sodium – 77 mmol Potassium – 40 mmol Magnesium – 15 mmol Chloride – 149 mmol Glucose – 11 mmol Lidocaine – 1 mmol Water for injections BP QS Approximate pH 3.5 – 4.0, approximate osmolality 586 mOsm.

To this is added 30 ml of 8.4% Sodium Bicarbonate and 28 mmol of Monosodium L-Aspartate. The induction dose is mixed in a ratio of 1:3, Base solution:blood. The maintenance dose is delivered at between1:4 to 1:6, Base solution:blood. Stage 1 Norwood operations have approximately 300 micrograms of GTN added to the Base Solution.

Patients below 10 kg:

This is usually delivered at a pressure of 40 - 70 mmHg.

Patients above 10 kg:

This is usually delivered at a pressure of 60 - 90 mmHg, and up to a maximum of 100 mmHg in adult patients.

As a guide, note the end diastolic pressure of each individual patient prior to cardiopulmonary bypass. This will indicate the normal filling pressure of the coronary arteries. When aortic incompetence is present, the CPS flow is increased.

Administration

For ALL Patients: Temperatu	are 32° until arrest then to 25°C for
remainder of induction dose. Temperature may be decreased to 20°C	
if difficult to maintain arrest or achieve arrest.	
Initial Delivery Rate:	110 ml/m ² /min for 4 minutes
Subsequent Delivery Rate:	110 ml/m ² /min for 2 minutes

Continuous cardioplegia can be given at a rate of 1/4 - 1/3 of calculated flow using a syringe pump to deliver the base solution. Approximately 12ml/hr Base solution for every rpm of the cardioplegia blood pump will give a final K+ concentration of about 9 mmol/L.



Cardioplegia circuit for Sorin CSC14 Heat exchanger