SNS COLLEGE OF ALLIED HEALTH SCIENCES

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Chennai

DEPARTMENT OF CARDIO PULMONARY PERFUSION CARE TECHNOLOGY

COURSE NAME : PRINCIPLES OF PERFUSION PART 1

2ND YEAR

TOPIC : PRIMING STEPS

Priming Steps for Cardiopulmonary Bypass Circuits

1. Filling the Reservoir:

A. Check the priming you want to use for sterility, and make sure their containers are not open or damaged.

B. Fill the Hard-shell Reservoir with priming fluid through the quick prime port by gravity via any of the filtered inlet ports located on the top of the reservoir.

C. Heparin should be injected into the reservoir at a rate of 2000-3000 units per liter of the prime to ensure adequate anticoagulation. If you administer blood with priming add 6 U Heparin to each 1 ml blood added on priming.

D. Add a sufficient prime to the system to maintain a dynamic priming volume.

E. It is extremely important, that the priming of the oxygenator and circuit is administered per manufacturer's instructions for use.

2. Recirculation:

A. Put a clamp on the arterial and venous line after A-V shunting .

B. Place clamps on either side of the arterial filter (If it was used).

C. Unclamp the recirculation line between the membrane and the reservoir.

D. Turn on the blood pump to a slow speed to flush the priming fluid through the venous reservoir, blood pump, and membrane (oxygenator).

E. When the circuit appears to be clear of bubbles, the pump speed should be increased now to remove any bubbles within the circuit.

F. The reservoir should be inspected for obvious bubbles and tapped to remove them, and continue de-bubbling from the outlet of the reservoir, head pump, membranes and progress to the arterial line, A-V shunt, to venous line.

2. Recirculation (cont)

G. Close the recirculation line between the membrane and the reservoir.

H. Stop the pump slowly.

I. Start the priming for the arterial filter by releasing the lower clamp (filter outlet), and turning on the blood pump at slow speed to allow the primer to fill the filter retrogradely, and discharge air through the purge line.

J. De-air the pressure line.

K. Stop the pump. Release the clamp from the A-V shunt line.

L. Release the top clamp on the filter (filter inlet).

M. Clamp the arterial filter bypass loop.

N. Start the pump at high speed. Invert the filter and tap to remove bubbles.

3. Priming the A/V Loop

A. Stop the blood pump.

B. Clamp the A-V shunt line.

C. If necessary, add more priming fluid to the venous reservoir.

D. Unclamp the venous line. Unclamp the arterial line.

E. Set occlusion of the arterial pump (if a roller pump is used) before priming the A/V Loop.

F. Start the blood pump gradually.

G. When all air is purged from the A/V loop, slowly increase blood pump flow to high speed, and recirculate the priming fluid through the entire circuit.

H. Before cutting the circuit by the scrub nurse, a final check must be done by both the perfusionist and scrub nurse for the presence of bubbles.

4. Pre-warm the Priming Fluid

A. Start heat exchanger water flow to pre-warm the priming fluid.

B. Inspect the entire system for leaks.

5. Priming cardioplegia if demanded:

A. Check the vials of cardioplegia before injecting in 500 ml normal saline 0.9% bag.

B. The bags must be labeled clearly with the date, concentration, and name of the person who prepared it, immediately after preparation.

C. Turn on the cardioplegia pump slowly to prime the cardioplegia circuit with NaCl 0.9%.

D. When the circuit appears to be clear of bubbles, the pump speed should be increased to remove any bubbles within the circuit.

E. Check the cardioplegia pump calibration, and make sure it is correctly programed into the pump console.

THANK YOU