

TITLE: Nitric Oxide Protocol

SUBJECT: Right Hearth Catheterization and acute vasoreactivity testing with nitric oxide

RATIONALE: Determining the degree of acute vasoreactivity in patients with pulmonary arterial hypertension is important to therapeutic decision making. Acute testing with nitric oxide is an effective and safe method to identify patients who can be expected to benefit from long-term treatment with oral calcium channel blockers.

EQUIPMENT: Nitric oxide delivery device and nitric oxide tanks
Supplemental oxygen source
Oxygen face mask
Extension tubing and adaptors
Continuous ECG monitoring
Continuous pulse monitoring
Continuous pulse oximetry
Continuous hemodynamic monitoring (pulse and blood pressure)
ABG analyzer

PROCEDURE:

1. Patient admitted to AACU and informed consent obtained for procedure.
2. Patient transferred to Cardiac Catheterization Laboratory.
3. Right heart catheterization and arterial catheter insertion performed by the attending cardiologist.
4. Baseline hemodynamic variables recorded (right atrial pressure, right ventricular pressure, pulmonary artery pressure, pulmonary capillary wedge pressure, cardiac output / cardiac index, pulmonary vascular resistance, and systematic vascular resistance).
5. Nitric oxide & oxygen (100%) delivered to patient (via face mask) for inhalation (under the supervision of the respiratory care practitioner and attending pulmonologist):
 - i. Start at 5 ppm x 5 minutes
 - ii. Advance to 10 ppm x 5 minutes
 - iii. Proceed to 20 ppm x 5 minutes
6. Record hemodynamic variables (mean pulmonary artery pressure, pulmonary vascular resistance, and cardiac output / cardiac index) at each 5 minute interval during vasoreactivity testing.
7. A "vasoresponder" is defined as a 20-30% decrease in the mean pulmonary pressure and/or pulmonary vascular

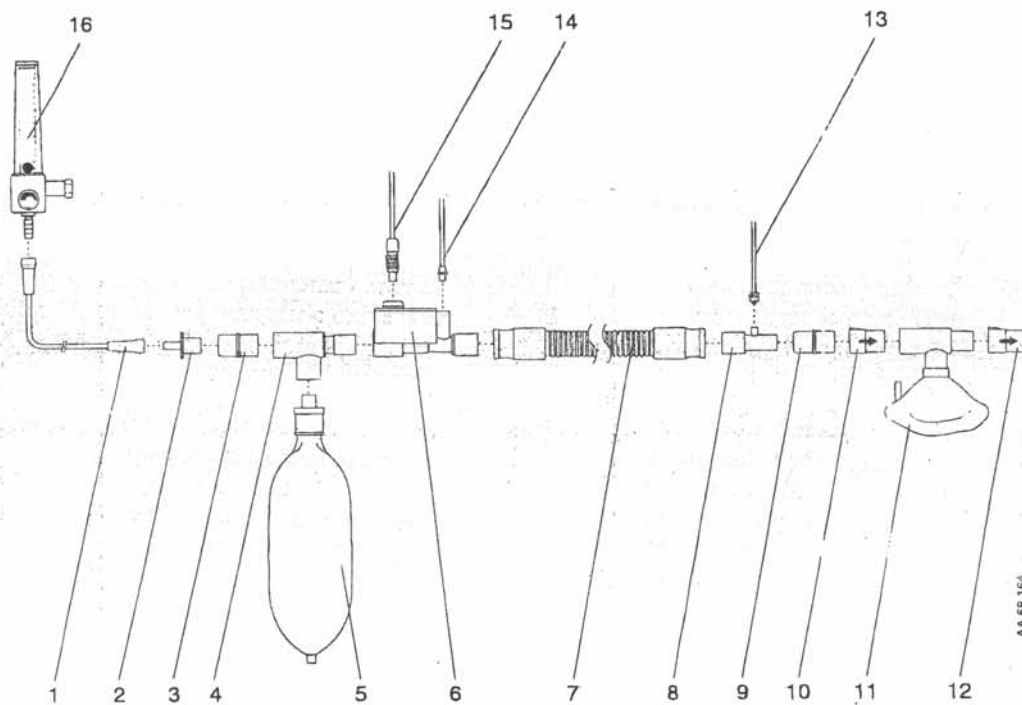
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resistance (with an increase in the cardiac output / cardiac index).

8. In the event of respiratory distress and/or hemodynamic compromise, the nitric oxide vasoreactivity testing will be discontinued and appropriate measures taken.
9. In a patient who is determined to be a "vasoresponder", the pulmonary artery catheter and arterial catheter will be secured and left in place. The patient would then be transferred to the critical care unit for calcium channel blocker titration (under hemodynamic guidance).
10. In a patient who is determined to be a "non-responder", the pulmonary artery catheter and arterial catheter will be removed. Further decisions regarding management would then be determined based upon the patient's functional status.

REVIEWED: 12/03

INOvent delivery system



- 1 O₂ Tubing
- 2 15M x 4.5 mm Adapter
- 3 22M / 15F x 22M / 15F Adapter
- 4 Breathing Circuit Tee
- 5 Breathing Circuit Bag
- 6 Injector Module
- 7 Breathing Circuit Hose
- 8 Sample Tee
- 9 22M / 15F x 22M / 15F Adapter
- 10 One-way valve
- 11 Sealed Face Mask
- 12 One-way valve
- 13 Patient Gas Sample Line
- 14 NO/N₂ Injector Tube
- 15 Injector Module Electrical Cable
- 16 O₂ Flowmeter

Figure 6-10 • System connection diagram for a spontaneous breathing circuit