

JOINT EVENT

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Inhaled nitroglycerin-An alternative to inhaled nitric oxide in the acute treatment of pulmonary hypertension and impending acute right ventricular failure

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Statement of the Problem: Inhaled nitroglycerine (iNTG) has been studied in pulmonary hypertensive (PH) children, shown to reduce pulmonary arterial pressures and pulmonary vascular resistance without any effect in systemic arterial pressures. Two cases of severe PH have been treated successfully using iNTG to improve pulmonary hemodynamics and decrease shunt, justifying further trials.

Methodology & Theoretical Orientation: A pulmonary artery (PA) catheter was used to gain a baseline and measure hemodynamics during the ICU treatment of the two patients at Brockton (community) Hospital for this preliminary analysis. Echocardiograms showed severe PH and varying right ventricular function. Both cases were treated in conjunction with an inhaled nitroglycerin nebulizer at a rate of 1.7 mg/hour (concentration 200 microgram/ml nebulized at 6 L/min oxygen flow.)

Findings: Two cases of pulmonary hypertension and acute right heart failure responded favorably to inhaled nitroglycerin. The first patient had pulmonary hypertension in the group III of World Health Organization (pulmonary hypertension with hypoxemia). The reduction of the pulmonary artery pressure of more than 50% in six hours, peaked at six hours with stepwise reduction and with no reduction in systemic arterial pressure. The second patient was suspected to have had pulmonary venous hypertension (Group II in the World Health Organization Classification), although contribution from chronic obstructive pulmonary disease and multiple myeloma could not be excluded. This patient also improved her pulmonary hemodynamics and resolved shock within 10–12 hours without any effect on the oxygen saturation and without a rebound phenomenon.

Conclusion & Significance: In cases of life threatening and refractory right heart failure and shock, thought should be given to the use of inhaled nitroglycerine. This cost-effective approach will allow for treatment of shock or at least temporary stabilization until the patient is transferred from a community hospital to a tertiary care facility.

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