

Hemodynamic effects of periodic Gz acceleration in meconium aspiration in pigs.

周期性加速度(pGz)在吸入胎便豬隻上的血液動力學作用。

Adams JA, Mangino MJ, Bassuk J, Sackner MJ.

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The hemodynamic effects of periodic acceleration (pGz), induced in the spinal axis with noninvasive motion ventilation (NIMV), were studied in a piglet model of pulmonary hypertension associated with meconium aspiration. Animals (n=12) were anesthetized, paralyzed, intubated, and supported by conventional mechanical ventilation (CMV). Thirty minutes after tracheal instillation of meconium solution (6 ml/kg), either CMV (n=6) was continued or NIMV (n=6) was initiated. Changes in systemic and pulmonary hemodynamics and arterial blood gases were tracked for 2 h after aspiration. Thermodilution, cardiac output, and heart rate were not significantly different after meconium aspiration in the pGz group relative to the CMV controls. Aortic pressure and systemic vascular resistance were significantly lower (~30%) after meconium aspiration in NIMV animals relative to CMV animals. Pulmonary arterial pressure and pulmonary vascular resistance were also significantly lower, by 100%, after aspiration of meconium in the NIMV animals compared with the CMV controls. Meconium aspiration significantly decreased total respiratory compliance by ~50% and increased total respiratory resistance by ~100% in both CMV and NIMV animals, but such alterations did not differ between the two groups. Both CMV and NIMV satisfactorily supported ventilation in these paralyzed animals. In conclusion, NIMV through pGz in the spinal axis decreased systemic and pulmonary vascular resistance in piglets after meconium aspiration.

總之，透過周期性加速度(pGz)運用在脊柱軸的非侵入式運動呼吸(NIMV)，在小豬吸入胎便後，減少全身及肺血管的阻力。