Determinants of arterial and central venous blood pressure variation in ventilated critically ill children

Summary / Zusammenfassung
Purpose: Ventilation induced arterial pressure variation predicts volume responsiveness in adults. Several factors are known to influence the interpretability of these variations. We analysed ventilation induced variations in critically ill children with reference to ventilatory and circulatory parameters.

Methods: We prospectively included 20 paediatric patients. Variation of systolic pressure (SPV), pulse pressure (PPV) and central venous pressure (CVP) were assessed during pressure controlled ventilation with inspiratory pressures (Pinsp) of 20 and 28 cmH2O. Blood gases were analysed and echocardiography was performed.

Results: SPV, PPV and CVP variation significantly increased with elevated Pinsp (p<0.001, p = 0.008 and p = 0.003). Baseline CVP and shortening fraction were significant negative predictors of PPV and SPV.

Conclusion: This preliminary study identified Pinsp as a determinant of SPV, PPV and CVP variation in children. Further independent determinants of SPV and PPV were baseline CVP and ventricular performance, both of which must be considered when interpreting pressure variations.

Weitere Informationen unter www.kispi.unizh.ch/Kinderspital/Medizin/Intensivabteilung/Forschung_de.html

Publications / Publikationen

Keywords / Suchbegriffe
Lung heart interaction, Pulse pressure variation, Systolic pressure variation, Children, Central venous pressure, Volume responsiveness, Mechanical ventilation

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