

## LETTER TO EDITOR (VIEWER'S CHOICE)

**PULSUS PARADOXUS IN THE NEONATE WITH RESPIRATORY DISTRESS**

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A male infant was born at 34 weeks gestation by emergency Caesarean section because of an abnormal cardiotocography. There was no resuscitation needed directly after birth. Within his first hour of life he started grunting and a chest X-ray showed mild respiratory distress syndrome (RDS). Twelve hours after admission his condition deteriorated with increasing oxygen requirement, elevated respiratory rate (90-119 per min), grunting and low oxygen saturation (in the low 80s on FiO2 0.5). Pulsus Paradoxus (PP) was identified by the pulse oximeter and blood pressure waveform. A decision was taken to intubate him and treat him with Surfactant. Pulsus paradoxus resolved and saturation improved to over 90%. He was extubated 22 hours later followed by CPAP for three days.

Nowadays PP can be easily detected by pulse oximeter waveform. This possibility was first described by Ryan A. in 1988 (1). Since then, several studies confirmed, that pulse oximetry is a reliable tool for detecting PP by comparing blood pressure waveform to invasive blood pressure measurement (2) and oximeter data to respiratory airflow measured with a facemask (3). PP appears mainly in association with cardiac or respiratory diseases like myocardial infarction in adults (4), pericardial effusion (5), obstructive lung diseases and bronchial asthma in adults and children (6,7), croup disease (8) but also occurs in patients with shock (9,10) or other non-pulmonary illnesses (11). PP is therefore an important indicator for the severity of cardiac distress or airway obstruction (12). Nevertheless there are barely studies about PP in infants with RDS. In 1988 Perlman suggested, that PP in Infants with RDS develops due to respiratory muscle activity (13). Frey reported in 1998 about PP in a 19 days old infant with paroxysmal supraventricular tachycardia (14) and examined PP in children from 7 days to 17 years with different respiratory and cardiac illnesses by pulse oximeter (15). Thus Pulsus Paradoxus may be a good parameter in classifying the severity of respiratory distress as well as a tool for making a decision on intervention. It can easily be detected and evaluated by pulse oximeter waveform and should always be taken in consideration along with other clinical signs.

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