SUCCESS OF NON-INVASIVE VENTILATION IN ACUTE RESPIRATORY DISEASE

C. Abadesso, C. Silvestre, H. Almeida, P. Nunes, E. Almeida, H. Loureiro
Pediatric Intensive Care Unit - Hospital Fernando Fonseca – Lisbon, Portugal

Background and Aims: Non-invasive ventilation (NIV) is being increasingly used in children with acute respiratory failure (ARF), preventing invasive mechanical ventilation and its possible complications.
In our unit we implemented a protocol to systematically start NIV in children with ARF.
Objectives: evaluate the efficacy and outcome of NIV and identify failure criteria.
Methods: Prospective observational study of all patients treated with NIV (November 2005 to January 2009). Clinical data and blood gases were evaluated before and at 1, 2, 4, 6, 12, and 24 hours after NIV. Need for intubation was considered NIV failure.
Results: 151 patients included. Mean age $7,2 \pm 20,3$ months (median: 1; min 0,3; max 156). Diagnosis: bronchiolitis in 102 (67,5%), pneumonia in 44 (29%) patients.
CPAP used in 72 and BiPAP in 79 patients. Sedation with chloral hydrate $\pm$ midazolam used in 117 (77,5%). There was a significant improvement in respiratory and heart rates, pH, pCO_2 at 2, 6, 12 and 24 hours after NIV onset ($p<0,05$) (table). Mean duration of NIV was $51,8 \pm 40,6$ hours. 34 patients (22,5%) required invasive mechanical ventilation Risk factors for NIV failure were: apnoeas, prematurity, pneumonia and bacterial co-infection.
There were no major complications related with NIV.
Conclusions: This study demonstrates the efficacy of NIV as a form of respiratory support for children and infants with acute respiratory failure, preventing clinical deterioration and need for intubations in most of the patient. Risk factors were related with immaturity and severe infection.

	Pre-NIV	2h	6h	12h	24h
Respiratory rate (bpm)	59 ± 16	$43,4 \pm 12,6$	$41,2 \pm 13$	$39 \pm 10,8$	$37,2 \pm 10,4$
Heart rate (bpm)	164 ± 19	149 ± 19	143 ± 18	$140 \pm 15,5$	$138 \pm 14,3$
pH	$7,29 \pm 0,08$	$7,34 \pm 0,06$	$7,35 \pm 0,05$	$7,36 \pm 0,05$	$7,38 \pm 0,05$
pCO2	$62,6 \pm 12$	$58,7 \pm 11,1$	56 ± 10	$53 \pm 6,8$	$52 \pm 6,7$

Limite 250 palavras (deve ser menos porque temos a tabela)
Titulo: limite de 20 palavras