



SANT JOAN de Déu  
HOSPITAL MATERNOINFANTIL - UNIVERSITAT DE BARCELONA

Dr. Martí PONS-ÒDENA . PICU DEPARTMENT

## CONFLICTS OF INTEREST

- × Speaker for :
  - ▣ MAQUET
  - ▣ Dräger
  - ▣ Fisher & Paykel

## OVERVIEW

- × HFNC, does it have a role in the PICU?
- × BRONCHIOLITIS, IS CPAP YOUR CEILING?
- × NIV IS FAILING IN YOUNGER INFANTS
  - ▣ NIV-specific ventilators
  - ▣ Conventional ventilators with NIV option
  - ▣ NIV NAVA
- × TAKE HOME MESSAGES

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HFNC, does it have a role in the PICU?

TRANSMONTANE

### Outcome

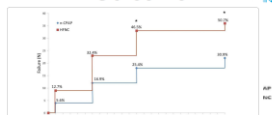


Fig 2. Probability of survival in the first 24 hours after randomization to either CPAP or HFNC in high-flow nasal cannula (HFNC). Comparison of probability of survival after randomization to either CPAP (n=73) or HFNC (n=73) in the first 24 hours.

	CPAP n=73	HFNC n=73	P
Failure, n (%)	22 (30)	36 (50.7)	0.038
LOS (d)	7.5 (3.3)	6.2 (6)	ns
Intubation, n (%)	3 (4)	5 (7)	ns
Cutaneous lesion	5 (7)	2 (3)	ns
Invasive ventilation (h)	6.2 (3.5)	10 (14)	ns

Failure / center: no difference p=0,48



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## BRONCHIOLITIS, IS CPAP YOUR CEILING?

**Increase in use of non-invasive ventilation for infants with severe bronchiolitis is associated with decline in intubation rates over a decade**

Intensive Care Med (2012) 38:1177-1183  
DOI 10.1007/s00134-012-2566-4

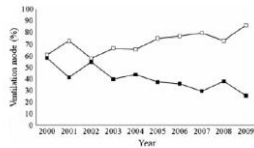


Fig. 2 Trends in modes of ventilation over 10 years. The percentage of ventilation modes over 10 years in bronchiolitis patients: open box non-invasive ventilation, closed box invasive ventilation. There is a statistically significant increase in NIV support of 2.8 % per year and a significant decline of 1.4 % per year in invasive support,  $p < 0.05$  over the study period

↓  
**NIV Success**  
**237 (83.2%)**

## Use of NIV in HSJD

- × 1998-2007
  - ▣ BiPAP lovers, but only CPAP in infants
- × 2007-2010
  - ▣ Bilevel in infants with Servo-i/Giulia
- × 2010
  - ▣ First NIV NAVA experience
- ▣ 2013
  - ▣ Implementing V60 and Total face mask

Intubation rate

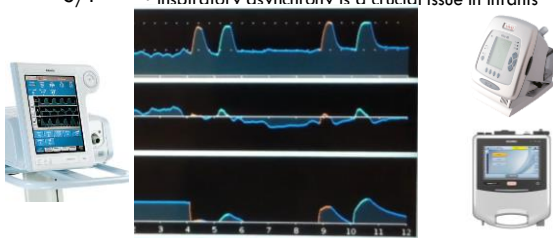
55%

35%

20%

## NIV IS FAILING IN YOUNGER INFANTS NIV-specific ventilator

- × S/T
  - Inspiratory asynchrony is a crucial issue in infants

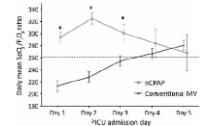


## BRONCHIOLITIS, IS CPAP YOUR CEILING?

**Infants with severe respiratory syncytial virus needed less ventilator time with nasal continuous airways pressure than invasive mechanical ventilation**

Bre Bonták<sup>1</sup>, Sandrine Essouf<sup>2</sup>, Marie Lauret<sup>2</sup>, Marcel Bl Albert<sup>3</sup>, Johannes Göt Burgenhof<sup>4</sup>, Pierre Tissieres<sup>2</sup>, Martin CJ Koopler (m.c.j.koopler@amcgp.nl)<sup>5\*</sup>

- × Hopital Kremlin-Bicetre. Paris
  - ▣ 89 patients on CPAP. 97% avoided intubation
- × Hospital Beatrix. Groningen
  - ▣ 46 patients on MV



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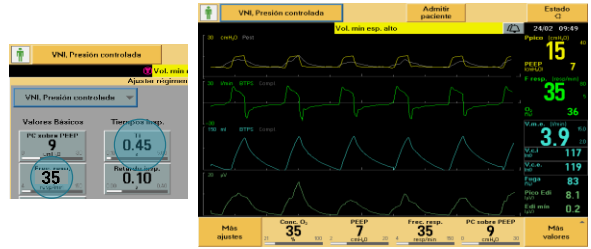
NIV IS FAILING IN YOUNGER INFANTS  
Conventional ventilator with NIV option

2007-2012

× PC

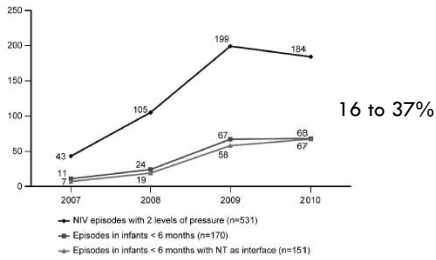


Setting parameters in PC



Is a Nasopharyngeal Tube Effective as Interface to Provide Bi-Level Noninvasive Ventilation?

Eneritz Velasco Amaiz MD, Francisco José Cambra Lasassa PhD, Lluïsa Hernández Platero MD, Nùria Millán Garcia del Real MD, and Martí Pons-Odena MD PhD



NIV IS FAILING IN YOUNGER INFANTS  
Conventional ventilator with NIV option

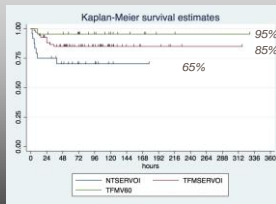
2013-2014

PS with Total face mask



INTERFACES

Median 115 days



Median 44 days

Median 24 days

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## Our data



*IS NIV NAVA MODE SAFE AND EFFECTIVE IN PATIENTS WITH EXPECTED DIFFICULT WEANING?*  
 Martí Pons-Odena<sup>1</sup>, Luis Pérez-Baena<sup>1</sup>, Milagros García<sup>1</sup>, Luciana Rodriguez<sup>2</sup>, FJ Cambra<sup>1</sup>  
<sup>1</sup>Hospital Sant Joan de Déu, Barcelona, Spain. <sup>2</sup>Hospital Sao Joao, Porto, Portugal

- × Oct 2010- January 2014
- × 30 patients
  - ▣ 22 Electively extubated from NAVA to NIV NAVA

Success rate 74%

## TAKE HOME MESSAGES

- × Between CPAP and intubation there is room for BLPAP
- × Interfaces are crucial
  - ▣ Nasopharyngeal tube works with Servo-i in PC mode
  - ▣ Most ventilators work better with Total face mask
- × NIV NAVA may play a relevant role providing bilevel pressure in the most challenging patients: asynchronic ones

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