

XXV REUNIÓN SEUP

PRIMERA
REUNIÓN
VIRTUAL

DONOSTIA - SAN SEBASTIÁN | 3 AL 6 DE MARZO DE 2021



Minimizar
mejorar
Avanzar

XXV REUNIÓN SEUP

PRIMERA
REUNIÓN
VIRTUAL

DONOSTIA - SAN SEBASTIÁN | 3 AL 6 DE MARZO DE 2021

Minimizar
mejorar
Avanzar

PÓSTER SIN DEFENSA

Assessment of Aerosol Delivery during Simulated Neonatal High Flow Nasal Therapy

Murphy B, Mac Giolla Eain M, Joyce M, Bennett G, Fernández Fernández E, MacLoughlin, R.

*Aerogen Ltd., Galway, Ireland.
Science and Medical Affairs Departments*

Presenter Email: efernandez@aerogen.com

Introducción

- **High flow nasal therapy (HFNT)** is an increasingly popular method of **aerosol drug delivery** to neonate patients. However, this form of therapeutic treatment in infants is challenging ^[1].

Objetivo

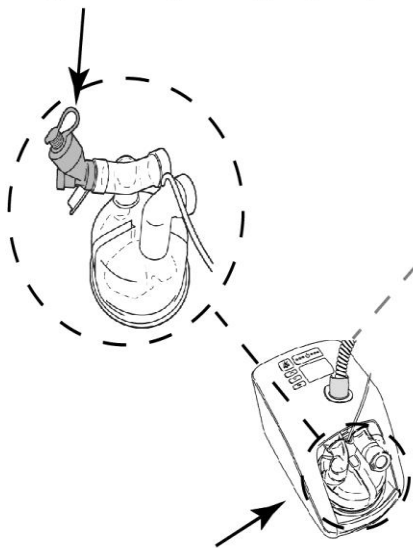
- The aim of this work was to evaluate **aerosol drug delivery** with a **vibrating mesh nebuliser (VMN)** during HFNT to a **simulated neonatal model** at three different supplemental gas flow rates (2, 5 & 8 Litres Per Minute; LPM).

¹ Reminiac F et al. *Pediatr Pulmonol* 2017; 52: 337–344

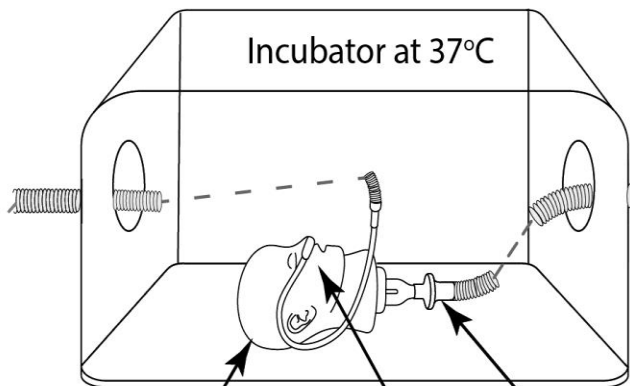
Métodos

Drug tested:
Salbutamol

Vibrating mesh
nebuliser (VMN)
(Aerogen Solo, Aerogen, IRE)



Airvo 2 Humidifer (F&P, NZ)
Flow Rate: 2, 5 & 8 LPM

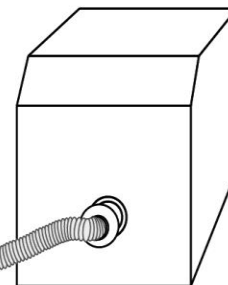


Horizontal RONAN
model

Collection
filter

OPT 314 Neonate
Junior Nasal Cannula (F&P, NZ)

ASL Breathing
simulator



V_T : 50 mL
BR: 30 BPM
I:E: 1:3

Resultados y Conclusiones

Gas flow Rate	2 LPM	5 LPM	8 LPM
Tracheal Dose (%)			
Average \pm SD	2.48 \pm 0.17	0.90 \pm 0.07	0.63 \pm 0.07

- Results from this work showed that supplemental **gas flow rates influence aerosol drug delivery** (2 LPM & 5 LPM $p = 0.002$, 2 LPM & 8 LPM $p = 0.005$).
- **Higher supplemental gas flow rates** may result in **impaction losses** in breathing circuit.
- **Cannula size** and **smaller airways** of a neonate may result in reduced tracheal dose [2].
- These finding confirm the **feasibility of efficient aerosol delivery during neonatal HFNT**.

² Perry SA et al. *Pediatr Crit Care Med* 2013; 14: e250–e256