

## Higher or lower tidal volume: An eternal dilemma!

Anupam Gupta

Saint Mary's Hospital, UK



### Abstract

**I**ntroduction: Preterm infants often require mechanical ventilation. Volume targeted ventilation has been shown to reduce both complications and the duration of mechanical ventilation. Recommended tidal volume varies from 4-8 mL/kg, but the optimal tidal volume remains elusive.

**Aim:** To compare a lower (4-5 mL/kg) to a higher (7-8 mL/kg) tidal volume during Volume Guarantee ventilation (VG) of Respiratory Distress Syndrome (RDS) in very preterm infants.

**Method:** The randomized trial was conducted at North Tees Hospital from 2013-2016. Babies <32 weeks' gestation or <1500 grams birthweight and requiring mechanical ventilation within 12 hours of life from RDS were included in the study. Babies were randomized to receive lower (4-5 mL/kg) or higher (7-8 mL/kg) tidal volume using VG. The dead space was kept consistent by using standardized trimming of the ET tube. Subjects all received surfactant and were managed by a strict protocol with rescue by high frequency ventilation for defined criteria. The primary outcome was the time to achieve a 25% reduction from the initial Peak Inspiratory Pressure (PIP). Secondary outcomes included the duration of mechanical ventilation, as well as respiratory and nonrespiratory complications. The data were analyzed using SPSS® version 20.0.

**Result:** During the study period, 70 of 97 (72%) eligible infants were enrolled. The groups were similar (Table 1). The primary outcome, time to reduce PIP (median [IQR]) were 13.6 (8.8-25.2) hours and 17.4 (7.7-27.8) hours, respectively, for higher and lower Vt (p=0.678). The total duration of ventilation (median [IQR]) on higher vs. lower tidal volume was 33.3 (22-368.8) and 61.8 (15.4-177.5) hours, respectively (p=0.959). There were no differences between the two groups for respiratory and non-respiratory complications of prematurity (Table 2).

### Biography:

Anupam Gupta is a Consultant Neonatologist at Saint Mary's Hospital, Manchester UK. He have trained and worked in world famous and prestigious pediatric and neonatal centres in India and UK and developed an expertise in neonatal ventilation and research. He was awarded his PhD by Durham University and he has carried out award winning projects and presented in prestigious international conferences like PAS, EAPS, ESPID, UENPS and helped to organize neonatal conferences here in the UK.

### Speaker Publications:

1. "Vascular Shunt for Small Vessel Trauma in a Polytrauma Patient"; Cureus 2020 Jul 12;12(7):e9150. Epub 2020 Jul 12.
2. "Isolated Injury to Prepuce After Motor Vehicle Collision"; Surgery, Delray Medical Center, Delray Beach, USA
3. "Laparoscopic Approach for Gallstone Ileus in Geriatric Patients"; Cureus 2020 Jun 15;12(6):e8642. Epub 2020 Jun 15.
4. "Bleeding After a Single Dose of Ketorolac in a Postoperative Patient"; Cureus 2020 Jun 30;12(6):e8919. Epub 2020 Jun 30.

[29<sup>th</sup> World Neonatal, Pediatric and Family Medicine Conference](#); Dubai, UAE - March 18-19, 2020

### Abstract Citation:

Anupam Gupta, Neonatal ventilation: Scientific principles and evidence to help in practical management, Faneotrics 2020, 29<sup>th</sup> World Neonatal, Pediatric and Family Medicine Conference; Dubai, UAE - March 18-19, 2020  
<https://neonatal.pediatricconferences.com/2020>

