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# A study of the effect of nasal modes of ventilation on the incidence of gastroesophageal reflux in preterm neonates

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## Objectives

To study the incidence of severe GER in nasally ventilated, preterm babies and compare this with a control group.

## Method

23 preterm babies of gestational age 28-36 weeks and weight 1000 to <2500 grams on different modes of nasal ventilation were compared with 20 controls. All babies were subjected to continuous, 12-24 hr esophageal pH monitoring with dual sensor esophageal pH catheters. The number of acid refluxes was recorded on a Gastrograph and analyzed using Win Reflux software.

## Results

The incidence of Reflux index > 20% was higher in the case as compared to the control group but this did not reach statistical significance However, Grade IV Reflux (7 cases) was seen only in the ventilated babies. When the ventilator group was compared on & off ventilator it was found that the incidence of severe GER (reflux inde3x > 40%) and Grade IV Reflux were both significantly higher while on ventilator as compared with off ventilator. However, there was no difference in the incidence of GER in babies on nasal CPAP as compared with those on nasal IPPV. When Reflux Index was assessed for predicting Grade IV it was found that for a Reflux Index of >20% , both sensitivity and specificity and positive predicative value were low. When symptoms were analyzed, no definite temporal relation between these and episodes of reflux could be determined.

## Recommendations

There is a strong association between nasal modes of mechanical ventilation and Grade IV (pharyngeal) GER in preterm babies, making these modes of ventilation a risk factor for Ger in these babies. Reflux Index per se cannot reliably predict Grade IV GER and a combination of pharyngeal and lower esophageal sensors are preferred to a single lower esophageal sensor when assessing GER by pHmetry in neonates. An exact temporal relation between GER episodes and clinical symptomatology could not be determined in this study due to small numbers