

## **Title: DO PROLONGED NASOGASTRIC TUBE FEEDINGS REDUCE GASTROESOPHAGEAL REFLUX IN INFANTS?**

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**Introduction:** Gastroesophageal reflux (GER) is common in neonate. Prolonged nasogastric (NG) feeding is frequently used to reduce GER, but may delay gastric emptying or increase transient lower esophageal sphincter relaxation. Multi-channel intraluminal impedance with pH probe (MII-pH) is considered the gold standard for evaluation of GER. The objective was to determine if prolonging NG tube feedings for one hour or greater is associated with decreased GER and acid exposure.

**Methods:** This is a retrospective data analysis of all infants who underwent MII-pH between October 2009 and August 2017 and received NG feedings. Method of feeding as well as feeding duration was determined. Infants were divided into two groups, NG tube feeds given via bolus ( $\leq$  30 minutes) or prolonged feeds ( $\geq$  60 minutes). The number of reflux events and percent of time pH  $<4$  was compared. Linear regression analysis was performed to adjust for the difference in corrected gestational age.

**Results:** 55 infants underwent MII-pH evaluation. Thirty (55%) received bolus NG feeding and 25 (45%) received prolonged NG feedings ( $\geq$  60 minutes). There was no significant difference in demographics and clinical characteristics between two groups except corrected gestational age (Table). Total reflux events were significantly lower in infants on prolonged feeding, and the difference remained significant after adjusting for corrected gestational age. There was no difference in acid exposure time between groups.

**Conclusion:** Prolongation of NG feedings was associated with a decrease in total number of GER events. There was no reduction in the percent of time exposure to pH  $<4$  with prolonged feeding.

### **Keywords:**

Gastroesophageal Reflux  
Nasogastric Tube feedings  
Prolonged feeding  
Neonate

**Table**

	<b>Bolus NG feeds (n=30)</b>	<b>Prolonged NG feeding (n=25)</b>	<b>p-value</b>
Birthweight $\pm$ SD (g)	1578 $\pm$ 1028	1492 $\pm$ 1270	0.784
Gestational age $\pm$ SD (weeks)	30 $\pm$ 5.3	29 $\pm$ 6.6	0.614
Corrected GA $\pm$ SD (weeks) at study	42 $\pm$ 4.5	46 $\pm$ 7.0	<b>0.029</b>
Total Fluids $\pm$ SD (mL/kg/day)	141 $\pm$ 21	149 $\pm$ 17	0.125
Sex (% male)	11 (30%)	14 (56%)	0.151
Race (% black)	15 (50%)	12 (48%)	0.88
Human milk (%)	12 (40%)	8 (32%)	0.539
Reflux medication during study (%)	0 (0%)	1 (4%)	0.454
Duration of study (hours)	22.9 $\pm$ 1.8	22.5 $\pm$ 1.4	0.376
<b>Reflux events (med, IQR)</b>	28 (22-47)	19 (14-32)	<b>0.036</b>
<b>Acidic events (med, IQR)</b>	13.5 (8-20)	9 (7-18)	0.352
<b>Non-acidic events (med, IQR)</b>	15 (9-22)	10 (2-15)	0.069
<b>Time with pH &lt; 4 (%)</b>	4.0 $\pm$ 6.5	3.84 $\pm$ 4.8	0.91