

## Application of Ambulatory Supraesophageal pH Probe Monitoring in Infants and Children

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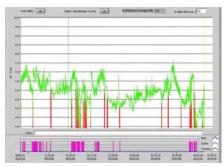


## Pulmonary Manifestations of Gastroesophageal Reflux Disease

- Apnea
- Aspiration Pneumonia
- Atelectasis
- Bronchiectasis
- Bronchitis
- Chronic Asthma
- Hemoptysis
- Hoarseness or Laryngitis
- Pulmonary Fibrosis
- Seizures related to Hypoxia

Sources: Bouros D. et al. Respir Med 1998; 92: 1251-2;63 El Serag HB. & Sonnenberg A. Gastroenterology 1997; 113: 755-60;62 See C.C. et al. Am J Dis Child 1989; 143: 951-4;64 Teramoto S. et al. Chest 2003; 124: 767;65 Garay J. et al. Helv Paediatr Acta 1982; 37: 221-30;87 Jasperson D. et al. Internist (Berl) 2003; 44: 58-62.88





# Age 3 Months

- Diagnosis: cystic fibrosis, failure to thrive
- Presenting symptoms of cough
- Evaluation UGI no GERD/anatomic obstruction, mildly prolonged gastric emptying scan
- Course hospitalization and PICU

## **Treatment**

- Study site: outpatient
- SE Result: drops to pH < 4 associated with respiratory symptoms
- Intervention: Nissen and G tube
- Course resolution at six week follow-up



# | Description |

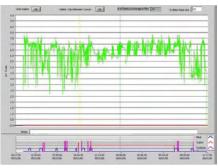
# Age 4 Months

- Diagnosis: infant in foster care with cough, no records
- Presenting symptoms: 3 months of cough
- Evaluation: hyperinflation on CXR
- Course: hospitalization and ER visits

#### **Treatment**

- Study site:hospital
- SE study result: drops to pH < 4 associated with respiratory symptoms
- Intervention: proton pump inhibitor and H2 blocker
- Course resolution at six week follow-up



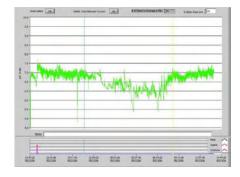


# Age 15 Months

- Diagnosis: 26 week premature, infant in foster care, spitting up, asthma
- Presenting symptoms: 3 months of cough
- Evaluation: UGI no GERD/anatomic obstruction, no delay on gastric emptying scan
- Course: hospitalizations for asthma

#### **Treatment**

- Study site: hospital
- SE study result: nocturnal pH > 7, drop to 4.5 ½ hour post-daytime feeds
- Intervention: prokinetic agent and H2 blocker, decrease volume of feeds (overfeeding)
- Course resolution at six week follow-up



# Age 4 Years

- Diagnosis: Down's Syndrome, laryngomalacia, NG feeding tube, cerebral palsy
- Presenting symptoms: fever and tachypnea
- Evaluation: aspiration pneumonia on CXR, prolonged gastric emptying on scan
- Course: hospitalizations

## **Treatment**

- Study site: hospital
- SE Study: supine nocturnal drop in pH to 5.0 associated with increased RR and wheeze, daytime pH 6.5—7.0
- Intervention: Nissen and G tube
- Course resolution at six week follow-up



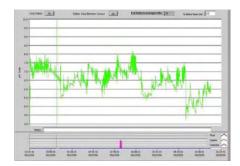


# Age 5 Years

- Diagnosis: normal child
- Presenting symptoms: hoarse voice
- Evaluation: vocal cord erythema on endoscopy
- Course: ENT consultation, multiple office visits

#### **Treatment**

- Study site: outpatient
- SE study result no drop in pH < 6.5
- Intervention: behavioral intervention regarding screaming
- Course resolution at six week follow-up



# Age 9 Years

- Diagnosis: severe mental retardation, cerebral palsy, Nissen fundoplication, gastrostomy tube
- Course: episodes of respiratory deterioration in care home
- Evaluation: UGI (through G-tube) no GERD, Nissen intact
- Course: ER visits

## **Treatment**

- Study site: outpatient 48 hour
- SE study result: pH drop < 5 only associated with water given for medications
- Intervention: review with pharmacist regarding milk and feeds, decrease volume of all feeds
- Course resolution at six week follow-up