cardinal finding of sepsis and septic shock. Lactate clearance = \(\frac{\text{Lactate [ED Presentation]} - \text{Lactate [Delayed]}}{100\text{Lactate [ED Presentation]}}\). A positive value denotes a decrease of the clearance of lactate, whereas a negative value denotes an increase in lactate. The aim of the study to determine the diagnostic and prognostic values of serum lactate levels and lactate clearance in pediatric patients with sepsis and septic shock.

**Patients and Methods:** A prospective study serum lactate and lactate clearance in pediatric patients with sepsis and septic shock withdrawn at 0, 6 and 12 hours of ICU admission.

**Results:** Age ranged from 40 days to 9 years Males were 17 (56.7%) and 13 (43.3%) were females Lactate clearance at 6 hours showed a cut off value of 26 mg/dl \((p = 0.028)\) with 81% sensitivity and 88.9% specificity. At 6 hours of admission, 7 patients were found to have a negative lactate clearance. 5 out of 7 (66.7%) did not survive. On the other hand, 8 patients had a positive lactate clearance, 4 out of 8 (50%) did not survive. Patients with septic shock, 9 patients were found to have a negative lactate clearance. All 9 (100%) did not survive. Patients with a positive lactate clearance, 4 out of 8 (50%) did not survive. Patients with septic shock, 9 patients were found to have a negative lactate clearance. All 9 (100%) did not survive.5 patients had a positive lactate clearance, 3 out of 5 (60%) did not survive. At 12 hours of admission, 10 patients were found to have a negative lactate clearance, 6 out of 10 (60%) did not survive. 5 patients had a positive lactate clearance and 2 out of 5 (40%) did not survive. 8 patients had a negative lactate clearance, 6 out of 8 (75%) did not survive. 7 patients had a positive lactate clearance at 12 hours of admission and all 7 (100%) did not survive.

**Conclusions:** Lactate clearance at 6 hours of admission proves to be reliable is assessment of mortality of patients Lactate clearance at 12 hours of admission proves to be less reliable.

**Outcome in Pediatric Gastroesophageal Reflux Disease (GERD) medical treatment: a tertiary center study**

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**Background:** Gastroesophageal reflux disease (GERD) is the most common esophageal disorder. The diagnosis of GER can be made in most cases based upon the history and physical examination. Therapy with conservative measures and, if indicated, medications can be initiated empirically. However, if the presentation is atypical or if the response to treatment is suboptimal, evaluation beginning with an upper gastrointestinal series (UGI) is warranted to delineate the anatomy of the upper GI tract.

**The aim of the work:** To find out the response and outcome of medical treatment (either pharmacologic or nonpharmacologic) in infants and children with GERD in Pediatric Gastroenterology Unit, Children’s Hospital Ain Shams University. A subsidiary aim is to identify risk factors associated with more need for anti-reflux surgery.

**Subjects and Methods:** A prospective study was conducted on 120 infants and children with ages starting from birth till the age of 12 years, having GERD in Pediatric Gastroenterology Unit, Children’s Hospital, Ain Shams University. Follow up with patients over one year to assess the response to medical treatment which included both pharmacological and non-pharmacological measures and surgical treatment. GERD was diagnosed with the symptoms, signs, or complications. Surgical intervention was Nissen fundoplication for all surgically treated patients. For endoscopic assessment of esophageal lesions caused by GERD Los Angeles classification was used.

**Results:** The present study included 120 children with GERD. 68 patients were males (56.7%). A family history of GERD was positive in 40% of cases. Most common age of GERD presentation was below 1 year in 55.8% of patients. Vomiting was the most common symptom in 109 patients (90.8%). 31 patients out of 34 (91.2%) responded to proper positioning with acid-suppressing medications during follow up and 28 patients out of 30 (93.3%) responded to formula thickening in addition to acid-suppressing medications and they had significantly higher response rate compared to those who received acid-suppressing medications only. About 90% of patients who received esomeprazole and rabeprazole responded to treatment within 2 weeks of treatment, 85.7% with omeprazole, 80% with pantoprazole, 60% with ranitidine. Most of the patients with sliding hiatus hernia (6 out of 7) were referred for surgical intervention, interestingly all of them had hematemesis at presentation. But, not all patients with a history of hematemesis were managed surgically as only 6 patients out of 31 (19.4%) needed anti-reflux surgery.

**Conclusion:** Proton pump inhibitors (PPIs) are associated with high response rate in pediatric patients with GERD. 30 degree upright positioning, and formula thickening, when taken with acid-suppressing treatment, gave higher response rates compared to acid-suppressing therapy alone.

**Cerebral arterial blood flow variations with different modes of ventilation in preterm neonates with respiratory distress syndrome**

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**Aim:** to study the possible influence of different modes of mechanical ventilation on cerebral blood flow measurements of internal carotid artery (ICA), anterior & middle cerebral arteries (ACA & MCA) in ventilated preterm infants with respiratory distress syndrome (RDS).

**Methods:** This Case-Control study was held in the neonatal intensive care unit of Maternity Hospital, Ain Shams University, Cairo, Egypt, between January 2013 and January 2015. It included 60 preterm neonates <34 weeks suffering RDS that required mechanical ventilation for a minimum duration of 24 hours: 20 neonates were assisted by nasal continuous positive airway pressure (n-CPAP), 20 by synchronized intermittent mandatory ventilation (SIMV) and 20 by high frequency ventilation (HFV). They were evaluated in comparison to 20 stable preterm neonates matched for sex, gestational and post-natal ages and with no RDS or need for respiratory support, serving a control group. Using colored Doppler studies, cerebral blood flow timed average velocities (TAmx) were evaluated then resistive index (RI) & pulsatility index (PI) were calculated for ICA, ACA & MCA, respectively.

**Results:** RI of ICA & MCA and PI of ICA in neonates on HFV were significantly increased compared to control. RI of ICA in neonates on SIMV was significantly increased compared to control. All parameters, however, remained within the physiological limits. ACA doppler indices were comparable in all groups. TAmx of ICA was positively correlated to mean arterial pressure & hemoglobin concentration.