

### **5.3 Liquid gastric emptying and antral motility in adult asthmatics.**

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#### **ABSTRACT**

**Introduction:** Asthmatics have increased prevalence of gastro-oesophageal reflux disease (GERD). Gastric antral hypomotility may contribute to this. Gastric motility has been little studied in asthma.

**Objective:** To study gastric emptying (GE) of a liquid meal in adult asthmatics and investigate association with GERD symptoms and autonomic functions.

**Method:** GE response to 200mL of chicken soup (54kJ, 15% protein, 30% fat and 65% carbohydrate) was assessed by real time ultrasonography in 30 stable, mild asthmatics (diagnosed according to American Thoracic Society Criteria) and 30 healthy controls. Percentage emptying at 15 minutes (GER%) and antral motility index were measured. Symptomatic GERD was assessed by a validated questionnaire, and autonomic nervous function by blood pressure and heart rate response to standing and deep breathing and the Valsalva maneuver.

**Results:** The asthmatics (15 males, age (mean  $\pm$  SD)  $34.7 \pm 8.4$ ) and controls were comparable in age, gender and body mass index. On autonomic function assessment, 3 asthmatics showed hypervagal response, 2 showed reduced vagal response but none showed a hyperadrenergic response. They were only on inhaled  $\beta$ -agonists as required. Although, 20 asthmatics had symptomatic GERD, none had endoscopic gastric pathology. Compared to controls, asthmatics had significantly delayed GER% (mean  $\pm$  SD  $55.4 \pm 14.4$  versus  $64.0 \pm 13.5$ ,  $p=0.036$ ) and lower antral motility index (mean  $\pm$  SD  $4.9 \pm 1.5$  versus  $6.4 \pm 1.4$ ,  $p<0.001$ ). There was no significant association of GE parameters with presence of GERD symptoms or autonomic function.

**Conclusion:** Asthmatics have delayed gastric emptying and impaired antral motility, independent of GERD status or autonomic nervous function.

**Word count = 248**

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