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 ± SD) 34.7 ± 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 β-agonists as required. Although, 20 asthmatics had symptomatic GERD, none had endoscopic gastric pathology. Compared to controls, asthmatics had significantly delayed GER% (mean ± SD 55.4±14.4 versus 64.0±13.5, p=0.036) and lower antral motility index (mean ± SD 4.9±1.5 versus 6.4±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
References


