Relation of Wireless Motility Capsule Gastric Emptying Times and Gastrointestinal Pressure Parameters to Symptom Reports in Gastroparesis: The Search for a Motor Cause of Symptoms

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ABSTRACT

Background: Gastroparesis is a condition in which patients experience symptoms of postprandial fullness, nausea and vomiting, bloating, distension, and reflux. Both increased gastric emptying time and slow gastric emptying are important factors in the diagnosis of dysmotility and gastroparesis. Wireless motility capsule (WMC) testing for postprandial gastric emptying measures the gastric emptying period and overestimates the emptying half-time by up to 50% due to the pressure recording not being able to detect small intestinal emptying. WMC testing for small intestinal emptying is considered the gold standard for monitoring gastrointestinal motility. However, WMC testing is a lengthy and expensive procedure that cannot be used in routine clinical practice. Therefore, a more practical test has been developed and validated for monitoring small intestinal emptying (SmartPill: WMC). This test measures the time required for the WMC to pass the pylorus, measured in the gastroesophageal junction, and defined as the time required for the WMC to change its position by a pre-set distance. The SmartPill WMC does not have the sensitivity of the WMC to detect small intestinal hypomotility. The SmartPill WMC does not have the sensitivity of the WMC to detect small intestinal hypomotility. The SmartPill WMC does not have the sensitivity of the WMC to detect small intestinal hypomotility. Therefore, it is important to determine the degree of correlation between SmartPill WMC testing and other more practical gastrointestinal pressure parameters in order to evaluate the clinical value of SmartPill WMC testing.

Methods: Patients with a history of gastroparesis and abnormal gastric emptying were recruited for the study. Each patient underwent SmartPill WMC testing and was followed up with a clinical evaluation of symptoms. Symptoms were evaluated on a scale of 0-5, where 0 represents no symptoms and 5 represents severe symptoms. The symptoms included nausea/vomiting, bloating, fullness, and upper and lower abdominal pain. The symptoms were calculated from 20 question surveys on the study day. SMARTPILL WMC TESTING SYMPTOM SCORING SYSTEM

RESULTS: The correlation between SmartPill WMC and other gastrointestinal pressure parameters was evaluated. The results showed a high correlation between SmartPill WMC testing and other gastrointestinal pressure parameters. The correlation between SmartPill WMC testing and other gastrointestinal pressure parameters was evaluated. The results showed a high correlation between SmartPill WMC testing and other gastrointestinal pressure parameters. The correlation between SmartPill WMC testing and other gastrointestinal pressure parameters was evaluated. The results showed a high correlation between SmartPill WMC testing and other gastrointestinal pressure parameters. The correlation between SmartPill WMC testing and other gastrointestinal pressure parameters was evaluated. The results showed a high correlation between SmartPill WMC testing and other gastrointestinal pressure parameters.

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IMPLICATIONS AND FUTURE DIRECTIONS: This study is consistent with several studies of gastric scintigraphy that show no definitive cause of symptoms related to gastroparesis and dysmotility. These studies have found that non-phasic motor and/or non-gastric factors are major contributors to symptoms severity. However, given the small sample size in this study, these observations warrant a larger investigation in a standardized gastroparesis population to rigorously relate validated symptom scores to WMC results.