This is a mixed retrospective study of 100 patients. Because AVS naturally produces a lower DCI, should 70% for 6% of patients (4 patients), AVS was beneficial in detecting severe hypokinetic disorders that were missed by MRS and WS.

**Methods**

IRP: 60% decrease for MRS; 39% decrease for AVS.

HRM is the gold standard for assessing esophageal motility disorders. It includes multiple provocative tests, such as Wet Swallows (WS), Apple Viscous Swallows (AVS), and Multiple Rapid Swallows (MRS).

There is a need for increased diagnostic accuracy for EGJOO and jackhammer to avoid additional unnecessary testing or treatment.

Few studies have conducted parametric comparison directly among these provocative maneuvers.

The goal of this study was to directly compare WS, AVS, and MRS to determine notable parametric differences in testing and identify gaps in current protocol that might advance diagnosis.

**Results**

**Results compared to those of WS data:**

A. Mean DCI: 61% increase for MRS; 41% decrease for AVS.
B. Maximum DCI: 41% increase for MRS; 40% decrease for AVS.
C. IRP: 60% decrease for MRS; 39% decrease for AVS.
D. No significant differences in distal latency.

Results from the EGJOO subset analysis:

A. 55% of patients (12 patients) had EGJOO and met 2 or more of the IRP criteria according to CC.
B. 45% of patients (10 patients) had atypical EGJOO and only met the WS IRP criteria.

**Noteworthy observations:**

A. For 6% of patients (4 patients), AVS was beneficial in detecting severe hypokinetic disorders that were missed by MRS and WS.
B. For 19% of patients (13 patients), MRS was beneficial in detecting hypercontractile esophagus that was missed by AVS and WS.

**Background**

1. Over the last decade, esophageal dysfunction has risen because of physiological changes in DCI for multiple rapid swallows (MRS) and apple viscous swallows (AVS) call for expansion in protocol for hypercontractility and ineffective esophageal motility.

Patients who met elevated IRP criteria in two or more swallow tests were more likely to have true EGJOO than those who only met elevated IRP in Wet Swallows (WS). There is a need to update the criteria for EGJOO.

**Results**

**Statistical analyses** were conducted to measure statistical significance and variance among tests.

**Discussion Questions:**

1. Because DCI increases with MRS due to physiological augmentation, is doubling of MRS DCI compared to WS DCI a possible additional measure for hypercontractility in cases of unclear jackhammer-like symptoms?
2. Because AVS naturally produces a lower DCI, should 70% rather than 50% be the cut-off for ineffective swallows for accurate diagnosis of ineffective esophageal motility?
3. Along with elevated IRP in WS, should elevated IRP in AVS (>12 mmHg) or in MRS (>8 mmHg) be included in protocol to confirm a diagnosis of EGJOO?