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Editorial

What Is the Diagnostic Accuracy of Chicago Classification Version 4.0 and the Difference From Version 3.0 in Diagnosing Esophageal Motility Disorders?

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Article: Comparison of diagnosis of esophageal motility disorders by Chicago classification versions 3.0 and 4.0
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The Chicago classification (CC) is an algorithmic system that classifies esophageal motility disorders observed in high-resolution manometry (HRM). CC version 3.0 (CC v3.0) was published in 2015,[1] but CC v3.0 did not suggest an alternative solution to cases where esophageal motility disorder diagnosed through HRM and clinical symptoms do not match. In addition, there was a problem in that it was difficult to consistently compare the results due to the test protocol performed in various ways for each institution. In this regard, the points emphasized and newly suggested in the recently updated CC v4.0 are as follows.[2] First, while the correlation between HRM results and clinical symptoms was not emphasized in CC v3.0, it was greatly improved in CC v4.0. In esophagogastric junction outflow obstruction (EGJOO), distal esophageal spasm, and hypercontractile esophagus, the presence or absence of noncardiac chest pain, or dysphagia must be checked, and it is emphasized that if these symptoms are not present, they are not clinically meaningful. Second, in the case of EGJOO, it was recommended to perform tests such as timed barium esophagography or functional lumen imaging probe (FLIP) to find findings that could support EGJOO. Finally, the normal value according to the HRM device was clearly presented, and the standardized HRM test procedure was presented to improve the consistency and diagnostic accuracy of test results. However, the diagnostic accuracy of CC v4.0 compared with that of CC v3.0 remains unclear.

In this issue, Noh et al[3] investigate the diagnostic accuracy and differences between CC v3.0 and CC v4.0. A total of 244 patients were included and the diagnosis was changed by 11.5% (n = 28). The 15 patients diagnosed of EGJOO by CC v3.0 was changed to normalcy by position (n = 2) and symptom (n = 13) by CC v4.0. In 7 patients, the ineffective esophageal motility (IEM) diagnosis by CC v3.0 was changed to normalcy by CC v4.0. The diagnostic rate of achalasia increased from 11.1% (n = 27) to 13.9% (n = 34) by CC v4.0. Of patients diagnosed IEM by CC v3.0, 4 patients were changed to achalasia based on the FLIP results by CC v4.0. Three patients (2 with absent contractility and 1 with IEM in CC v3.0) were newly diagnosed with achalasia using a provocative test

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and barium esophagography by CC v4.0.

In CC v4.0, if HRM results are ambiguous or EGJOO findings are observed, timed barium esophagography, barium table swallow, or FLIP to evaluate the degree of gastroesophageal junction distension should be performed to confirm whether the results support EGJOO.[4,5] EGJOO is the diagnosis that has changed the most since the diagnosis criteria changed from CC v3.0 to CC v4.0. In CC v3.0, the simple diagnosis of EGJOO could be make when the integrated relaxation pressure (IRP) value was high and there was no evidence of achalasia. On the other hand, in CC v4.0, it has changed so that it can be diagnosed when the IRP was abnormally high in both (upright and supine) position and the intrabolus pressure was 20 mmHg or more in the supine position, and there are clinical symptoms present.[2] This reason is to prevent too many patients from undergoing unnecessary tests after being unnecessarily diagnosed with EGJOO, as in CC v3.0 in the past.[6] The normal response to rapid drink challenge (RDC) is the absence of esophageal body contraction (DCI < 100 mmHg·s·cm) and complete inhibition of swallowing of the lower esophageal sphincter due to the effect of swallowing inhibition during rapid drinking.[7] After RDC, normal esophageal body contraction occurs, but may not be seen in some normal people. EGJOO is suggested if IRP > 12 mmHg (when tested with the Medtronic device) and pan-esophageal pressurization greater than 20 mmHg during the first 30 seconds of the RDC test.[8] Provocation tests are performed when no evidence of esophageal motility disorder is observed in HRM, when the results do not match the clinical symptoms, or when it is difficult to explain the patient's symptoms with the results.[6] For example, in a situation where EGJOO findings are very suspicious, but no major esophageal motility disorder is seen in the standard protocol, solid swallow test, solid test meal, and pharmacologic provocation test are performed.[9]

IEM is a peristalsis disorder in which there is normal relaxation of the lower esophageal sphincter, but irregular bolus movement in the distal esophagus due to low-amplitude peristaltic contraction, failed peristalsis, or a defect in peristaltic integrity. It is one of the esophageal motility disorders relatively commonly diagnosed in HRM. Previously, CC v3.0 classified IEM and fragmented peristalsis as minor disorders of peristalsis,[1] but CC v4.0 removed the distinction between major and minor disorders of peristalsis.[6] Segmented peristalsis was integrated into the definition of IEM, and IEM diagnostic criteria were presented more strictly (> 70% ineffective swallows or ≥ 50% failed peristalsis) than before.[4]

There may be selection bias due to the retrospective study design, and in some patients, the supportive test recommended in CC v4.0 was not performed. However, it is highly appreciated that the diagnostic advantages of CC v4.0 compared to CC v3.0 were evaluated by applying CC v4.0 to large number of patients. Further studies on the treatment outcomes following diagnosis with CC v4.0 are needed.

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