

Gastroparesis in Asia: An Area Still Unfamiliar to Asian Gastroenterologists

Kang Nyeong Lee

Department of Internal Medicine, Hanyang University College of Medicine, Seoul, Korea

Article: Knowledge, attitude, and practice survey of gastroparesis in Asia by Asian Neurogastroenterology and Motility Association

Oshima T, Siah KTH, Kim YS, et al

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Are Asian doctors effectively diagnosing and managing patients with gastroparesis? Gastroparesis is a syndrome of delayed gastric emptying (GE) without accompanying evidence of mechanical obstruction in the gastrointestinal (GI) tract.¹ The cardinal symptoms of gastroparesis include early satiety, postprandial fullness, nausea, vomiting, abdominal pain, and in severe cases, weight loss.² Moreover, this syndrome has been associated with low quality of life and dissatisfaction regarding treatments.³ In Western studies, the prevalence in men and women has been reported to be 9.6 and 38 per 100 000 persons, respectively.⁴ A study of Olmsted County residents estimated the incidence to be 1.8% according to regression models for GE rates.⁵ Nonetheless, there is a lack of research pertaining to Asian populations.

While the causes of gastroparesis are mainly idiopathic in nature, diabetic, iatrogenic (such as medication-induced), post-surgical, and neurologic factors can also be responsible.² The pathophysiology is based on the presence of abnormalities in cells or tissues normally associated with physiological functions pertaining to GE, such as gastric pacemaker cells, intrinsic and extrinsic nerves, smooth muscle, and immune cells. Previous studies on patients with gastroparesis have reported disruption of the smooth

muscle cells, interstitial cells of Cajal (ICC), and platelet-derived growth factor receptor α -positive (PDGFR α +) cells syncytium (SIP syncytium), a gastric pacemaker composed of smooth muscle cells, ICC, and PDGFR α + cells, involving a reduction in ICC and PDGFR α + cells in diabetic and idiopathic gastroparesis, respectively.^{6,7} Histologic or biochemical changes in the intrinsic and extrinsic nerves, as well as in the smooth muscle have been reported in both human and animal studies. Additionally, macrophage-driven immune and inflammatory changes, such as a loss of anti-inflammatory macrophages in the stomach antrum, were implicated in gastroparesis due to their association with ICC loss in gastroparesis patients, as determined by both GE tests and the Gastroparesis Cardinal Symptom Index.⁸

Gastroparesis may overlap with functional GI disorders in terms of pathophysiology, symptomatology, and treatment.⁹ Symptoms of nausea, vomiting, early satiety, postprandial fullness, abdominal pain in gastroparesis are very similar to those of functional dyspepsia (FD). Even the pathophysiologic mechanism of delayed GE in gastroparesis resembles that of FD: some FD patients show delayed GE; rapid GE; impaired fundic accommodation; and hypersensitivity to acid, lipid, or luminal distention.^{9,10} Gastropare-

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*Correspondence: Kang Nyeong Lee, MD, PhD

Department of Internal Medicine, Hanyang University College of Medicine, 222 Wangsimni-ro, Seongdong-gu, Seoul 04763, Korea

Tel: +82-2-2290-8339; Fax: +82-2-2290-8314, E-mail: leekn@hanyang.ac.kr

sis should also be differentiated from other functional GI diseases having upper abdominal symptoms including cyclic vomiting syndrome and rumination syndrome.¹¹ Furthermore, GE scintigraphy (GES) is the current diagnostic gold standard, but its implementation differs between institutions.

The paucity of research on gastroparesis in Asian populations, which the authors attribute to issues of lack of interest and underdiagnosis, provides the backdrop for this important survey by the Asian Neurogastroenterology and Motility Association (ANMA). In this issue of the *Journal of Neurogastroenterology and Motility*, the results of the ANMA survey seek to shed light not only on the current understanding of gastroparesis in Asia, but also expectations of future improvements in the evaluation and management of the syndrome in this population.¹² The investigators conducted the survey using questionnaires that assessed the knowledge, attitude, and practices of Asian doctors with respect to gastroparesis. The number of questions pertaining to knowledge, attitude, and practices was 6, 2, and 7, respectively. The questionnaire was developed through a literature review by 3 experts with more than 15 years of experience each in GI motility disorders who were selected by the ANMA research committee. The participants of this survey included 490 doctors (mostly gastroenterologists, 81.2%) from various Asian countries, including Bangladesh, China, Hong Kong, Indonesia, Japan, Malaysia, Myanmar, the Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam.

The survey results showed that the knowledge concerning the definition and diagnostic gold standards of gastroparesis was weak (correct in 24.2% and 54.2% of the respondents, respectively). In addition, the proportions of cases diagnosed with diabetic gastroparesis or FD with delayed GE were low, and the medications given during gastroparesis mostly consisted of antiemetics and prokinetics. In terms of attitude, more than 80% of the respondents considered gastroparesis to be very or quite important, regardless of the availability of GES tests. The authors found that the availability of GES was related to the reason for the lack of interest in gastroparesis. Specifically, the lack of interest was most commonly due to treatment ineffectiveness (41.5% of the respondents) among the doctors in institutions where GES was available, whereas the lack of reliable diagnostic tests (46.8%) was the primary reason for the lack of interest among the institutions without access to GES. Regarding the practices of gastroparesis, more than 78% of the respondents stated that the number of patients diagnosed with gastroparesis at their institutions in the previous year was lower than 5. There were differences in terms of the diagnostic criteria used for both delayed gastric retention by GES and the time frame of GES in addition to

the test meals.

In light of the above, knowledge of gastroparesis needs to be widely disseminated throughout Asia. Moreover, the interest of Asian doctors in gastroparesis should be increased along with the availability of the diagnostic testing, and standardized protocols and meals during the testing should be implemented. Lastly, treatment efficacy must improve. An increased understanding of the cellular and molecular events in gastroparesis during the past decade has enabled clearer associations to be established between various clinical presentations, causes and GE status, thereby giving rise to significant diagnostic and therapeutic developments.¹³ The non-standardized approach of GES may be replaced by noninvasive alternatives such as the 13C GE breath test¹⁴ and the wireless motility capsule.¹⁵ In addition, clinical trials have demonstrated the efficacy of newer antiemetic agents such as the tachykinin receptor antagonist, tradipitant¹⁶ and gastroenterokinetics such as the selective ghrelin agonist, relamorelin.¹⁷ Furthermore, refractory pyloric dysfunction in gastroparesis has been successfully managed using botulinum toxin injection around the pylorus¹⁸ and gastric per-oral endoscopic pyloromyotomy.¹⁹ In order to increase diagnostic accuracy and treatment efficacy and also to improve the lack of interest in gastroparesis across Asia, we should try to identify its specific biomarkers by further research in Asia. Obviously, this ANMA survey has taken the meaningful step to Asian research of gastroparesis.

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