

# Prevalence and Risk Factors of Irritable Bowel Syndrome in Asia

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**Article:** Prevalence and risk factors of irritable bowel syndrome in healthy screenee undergoing colonoscopy and laboratory tests  
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Irritable bowel syndrome (IBS) is a functional gastrointestinal disorder characterized by abdominal pain, discomfort and alteration of bowel habits, in the absence of organic disease.<sup>1</sup> The prevalence of IBS is high worldwide, although it varies according to the country and diagnostic criteria which has been used.

Most large scale studies of the prevalence of IBS usually use the Manning or Rome II criteria, since the Rome III criteria was recently developed. In western studies, the prevalence of IBS is mostly about 10-20% in adolescents and adults,<sup>2</sup> although it is reported up to approximately 25% in some studies.<sup>3,4</sup> In many western studies, IBS is predominant in females<sup>5,6</sup> with higher prevalence than eastern country.<sup>7,8</sup> There are many Asian studies about the prevalence of IBS. In one study from Korea, Han et al. conducted a population based study that used telephone interviews using the Rome II criteria to diagnose IBS. In this Korean study, the prevalence of IBS was 6.6% and there was no significant difference between males and females, and subjects in their 20s had the highest IBS prevalence.<sup>9</sup> In another study from Hong Kong, Kwan et al. reported the prevalence of IBS as 6.6% using the

Rome II criteria, while there was also no significant difference between males and females likewise.<sup>10</sup> In china, Xiong et al. reported the adjusted prevalence of IBS in South China as 11.5% with the Manning criteria and 5.7% with the Rome II criteria; and they found no difference between males and females.<sup>11</sup> When compared with the western studies, the prevalence in Asian countries were relatively low, and female predominance was mostly not evident.

The paper by Nam et al. in the issue of prevalence of IBS in Korea raises several important points. First, they used the recently published Rome III criteria to diagnose IBS. Few studies have used these criteria to diagnose IBS. This paper can help us to know and compare the prevalence of IBS by Rome III. In this study, the prevalence of IBS was found to be 8.2% before and 9.1% after organic disease was excluded via colonoscopy. By the study of Han et al. in 2006, the prevalence was 6.6%,<sup>9</sup> and 9.6% by Lee et al. in 2009.<sup>12</sup> Both studies used the Rome II criteria. The difference of approximately 3% between studies in 2006 and 2009 may be explained by the increase in the prevalence of IBS. Recently, Wang et al. reported the accordance between Rome II

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and III to be good.<sup>13</sup> In addition, Dorn et al. found that the accordance between the two criteria was acceptable (kappa 0.79), and that the prevalence and proportions of the subgroups were similar between two criteria.<sup>14</sup> However, Sperber et al. reported the prevalence of IBS as 2.9% for Rome II and 11.4% for Rome III, concluding Rome II as a much more strict criteria.<sup>15</sup> Recently, Miwa reported the prevalence of IBS as 9.8% by Rome II and 13.1% by Rome III, and suggested that the Rome III criteria is more sensitive than the Rome II criteria.<sup>16</sup> Second, this study excluded the organic bowel diseases through colonoscopy and laboratory exams, which was more accurate compared with many studies using only questionnaires through telephone or internet survey. By excluding the organic diseases with various tests, this study could estimate the prevalence of IBS more precisely.

In this study, female gender, younger age, psychological stress, and current smoking were risk factors for IBS. In western studies using Rome II, from Spain, Australia and Canada, the female: male ratios were about 2:1.<sup>17-20</sup> In Nam's study, the female was predominant in IBS patients, too. However, most Asian studies using Rome II criteria have not shown a significant difference in prevalence of IBS between male and female.<sup>9,12,21,22</sup> Recently, one Japanese using Rome III reported the prevalence of IBS to be 15.5% in females and 10.7% among males. The Rome III criteria may uncover more female IBS patients than the Rome II, or the epidemiology of IBS in Asia may have become more similar to that in western countries. IBS is found frequently in all age groups.<sup>23</sup> However, the prevalence of IBS is higher in the younger age group than the older age group in many studies. Miwa reported the prevalence of diarrhea predominant IBS to be highest among males in their 20s, and constipation predominant IBS was most frequent among females in their 20s.<sup>16</sup> In the study of Han et al., the prevalence was also higher among those in their 20s.<sup>9</sup> In Nam's study, the younger age had a positive association with IBS, which is similar to the several western studies that suggested the association between IBS and the younger age.<sup>24-26</sup> The psychological distress is a well known contributing factor for IBS and anxiety and depression are closely associated with IBS in many western studies. Nicholl et al.'s and Halzlett-Stevens et al.'s studies found that anxiety is an independent risk factor for IBS.<sup>27,28</sup> Shen et al. reported the anxiety and depression to be significantly associated with IBS patients in China.<sup>22</sup> Similarly, psychological stress was strongly associated with IBS in Nam's study. The exact mechanism of psychological stress inducing the abdominal symptoms has not been discovered yet. Although re-

cently, many researchers have reported that there is a bidirectional relationship between the brain (central nervous system) and the digestive tract. The most common opinion is that a complex reflex circuit between the cerebral cortex and the digestive system exists, and brain-gut axis dysfunction can generate digestive disorders.<sup>29</sup>

We still don't fully understand about the role of smoking and alcohol on the development of IBS symptoms. In Nam's study, current smoking was associated with IBS in multivariate analysis whereas alcohol consumption was not. There are few studies regarding the relationships between smoking, alcohol and IBS symptoms. In the study of Han et al., the odd ratio of smoking and alcohol was 0.64 (95% CI 0.37-1.12) and 1.38 (95% CI 0.81-2.35) respectively.<sup>9</sup> Locke et al. reported alcohol and smoking had no association with IBS.<sup>30</sup> However, Masand et al. suggested a close relation between IBS and alcohol consumption, when they reported many more IBS patients in alcohol abuse or dependence than those who were not.<sup>31</sup> The disagreement in the relationships may be due to the fact that smoking and alcohol consumption have close correlations with stress, age, gender, socioeconomic state, and national traditions, therefore it rather reflects a multiplicity of different factors which affect the physiologic state of the digestive system.

In conclusion, Nam's study is the first large scale IBS study in Korea using the Rome III criteria which excluded the organic diseases by colonoscopy and laboratory tests. However, this study has several limitations. First, the study population was participants in the health screening program, so this study population cannot represent the entire Korean population. Second, this study did not analyze the prevalence and characteristics of each subtype of IBS. In spite of these limitations, this study has contributed greatly to the understanding of the epidemiology and risk factors of IBS in Korea with a recent updated diagnostic criteria.

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