

## Risk of Fractures at Different Anatomic Sites in Patients with Irritable Bowel Syndrome: A Nationwide Population-Based Cohort Study

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**Abstract :** A variety of gastrointestinal disorders, such as Crohn's disease, ulcerative colitis, and coeliac disease, are recognized as risk factors for osteoporosis and osteoporotic fractures. One recent study suggests that individuals with irritable bowel syndrome (IBS) might also be at increased risk of osteoporosis and osteoporotic fractures. Up to now, the association between IBS and the risk of fractures at different anatomic sites occurrences is not completely clear. We conducted a population-based cohort analysis to investigate the fracture risk of IBS in comparison with non-IBS group. We identified 29,505 adults aged  $\geq 20$  years with newly diagnosed IBS using the Taiwan National Health Insurance Research Database in 2000-2012. A comparison group was constructed of patients without IBS who were matched according to gender and age. The occurrence of fracture was monitored until the end of 2013. We analyzed the risk of fracture events to occur in IBS by using Cox proportional hazards regression models. Patients with IBS had a higher incidence of osteoporotic fractures compared with non-IBS group (12.34 versus 9.45 per 1,000 person-years) and an increased risk of osteoporotic fractures (adjusted hazard ratio [aHR] = 1.27, 95 % confidence interval [CI] = 1.20 - 1.35). Site specific analysis showed that the IBS group had a higher risk of fractures for spine, forearm, hip and hand than did the non-IBS group. With further stratification for gender and age, a higher aHR value for osteoporotic fractures in IBS group was seen across all age groups in males, but seen in elderly females. In addition, female, elderly, low income, hypertension, coronary artery disease, cerebrovascular disease, and depressive disorders as independent osteoporotic fracture risk factors in IBS patients. The IBS is considered as a risk factor for osteoporotic fractures, particularly in female individuals and fracture sites located at the spine, forearm, hip and hand.

**Keywords :** irritable bowel syndrome, fracture, gender difference, longitudinal health insurance database, public health

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