Metabolic derangement and esophageal diseases

新陳代謝異常與食道疾病

Ping-Huei Tseng, MD, PhD

Department of Internal Medicine, National Taiwan University Hospital

Metabolic syndrome (MS) is a medical disorder that consists of a complex combination of abdominal obesity, hypertension, impaired glucose tolerance and dyslipidemia1. the prevalence of the MS has been increasing rapidly in Taiwan and other Asian countries and appears to resemble that among the Western populations because of the westernization of diet and lifestyle. Gastroesophageal reflux disease (GERD) is the most common esophageal disorder in patient with metabolic derangement. The incidence and prevalence of GERD have increased remarkably worldwide over the past decades, partly related to the epidemics of obesity and metabolic syndrome. GERD has been associated with a broad spectrum of symptoms and has a great impact on the quality of life of patients. Moreover, long-standing gastroesophageal reflux has been associated with the development of Barrett's esophagus, which poses an increased risk of esophageal adenocarcinoma. Chronic mucosa damage by the refluxate is thought to stimulate the inflammatory and proliferative responses in the esophageal squamous epithelium. Recently, obesity has been found to be a strong risk factor for developing GERD-related symptoms and complications. In addition to increasing

intra-abdominal pressure, visceral adipose tissue produces multiple adipokines and proinflammatory cytokines, which may result in low grade chronic inflammation and further promote neoplastic progression.

Diabetes mellitus has been associated a myriad of upper and lower gastrointestinal complications, including reflux esophagitis, gastroparesis, diarrhea and constipation, all of which may affect the quality of life and glycemic control. The pathogenesis of gastrointestinal complications in diabetic patients is multi-factorial and has been mainly attributed to autonomic neuropathy, which can impair both gastric acid secretion and gastrointestinal motility. Various gut hormones, including ghrelin, pancreatic polypeptide-fold peptides, amylin and glucagon-like peptide 1, also play crucial roles in regulation of food intake, gastrointestinal motility, energy balance, and body weight by working with the complex neural circuits in the brainstem, hypothalamus, and higher cortical centers. Major functional disturbances related to the esophagus in diabetic patients involves decreased peristaltic wave (hypo-contractility or aperistalsis) and dysfunction of the lower esophageal sphincter (LES), both may further contribute to the development of GERD. Hyposensitivity of esophagus has also been reported in DM, which may further result in the under-recognition of these esophageal complications in DM patients. Considering the increasing prevalence of obesity and diabetes subjects in Taiwan and worldwide, and the realistic scenarios of frequently under-recognizing these upper GI complications in diabetic

subjects, efforts toward better glycemic control and detecting related GI diseases earlier to prevent late complications developing are warranted.