

中文題目：代謝症候群與消化系統疾病之相關性研究—來自「MAGIC」研究團隊的訊息

英文題目：Metabolic Syndrome in Association with Gastrointestinal Disorders—Message  
from 「MAGIC」 Study Group

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**Background :** Metabolic syndrome (MS) has become a major public health challenge worldwide. In addition to its huge impact on cardiovascular diseases and nonalcoholic fatty liver disease, metabolic syndrome has been identified as a risk factor for certain gastrointestinal diseases. We therefore conducted the 「MAGIC」 study (Metabolic syndrome in Association with Gastro-Intestinal Conditions) to understand the relationship between metabolic disorders and alimentary aberrant conditions. In this study, we report the association between key metabolic factors and common gastrointestinal disorders in a Taiwanese population.

**Patients and Methods :** We enrolled 3361 individuals who underwent health check-ups from October 2004 to January 2006 in our hospital. We reviewed their medical records, the difference in age, gender, smoking, alcohol, abdominal girdle, serum levels of triglyceride, fasting glucose, high-density lipoprotein and blood pressure were analyzed between individuals with and without some alimentary disorders including hepatitis B, hepatitis C, erosive esophagitis and colorectal adenomas. To identify their association, these factors were further separated into categorical variables including: gender (male vs. female), age ( $\geq 50$  vs.  $< 50$  yrs), current smoker vs. ex-smoker vs. non-smoker, drinker vs. non-drinker, and metabolic syndrome (with vs. without, defined according to ATP III). Multiple logistic regression included adjustment for age, sex, smoking, alcohol drinking, and MS was used to examine the odds ratios (ORs) of those potential risk factors. For each hazard, the OR and 95% confidence interval (CI) were given. A  $p$  value  $< 0.05$  was considered statistically significant.

**Results :** Among 3361 individuals underwent health examination, 3106 were enrolled after

excluding participants with age < 20 years, incomplete examination and malignancy. Of the 3106 subjects, there were 1824 men (58%) and 1282 women (42%), with mean age of 47.1±10.8 years (range: 20-85 years). Comparing to the non-diseased control subjects, individuals with erosive esophagitis or colorectal adenoma have much worse overall metabolic profiles. However, those with HCV infection have a better lipid profile. Comparing with those without MS, MS is significantly associated with a higher incidence for erosive esophagitis (OR: 1.42, 95% CI: 1.12-1.79,  $p = 0.004$ ) and colorectal adenoma (OR 1.71, 95% CI: 1.34-2.71,  $p < 0.001$ ) after adjustment of age and gender. This risk increased in a dose-dependent manner with the number of metabolic components ( $p$  for trend < 0.05) .

**Conclusions and Discussion :** In conclusion, Taiwanese with HCV infection, reflux esophagitis, or colorectal adenoma have their specific metabolic profiles. Metabolic syndrome has a significant association with reflux esophagitis and colorectal adenoma. Although the detailed mechanisms explaining the associations remain to be elucidated, our results suggest that metabolic risk factors should be taken into considerations for developing different strategies to reduce the burden of these common GI disorders.