Relationship between gallstone and metabolic syndrome in Jinchang cohort

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Objectives: To reveal the relationship between gallstone and metabolic syndrome, in order to provide evidence for prevention and treatment of gallstones and metabolic syndrome Jinchang cohort.

Methods: The baseline eventually included 20,969 people and a total of 11,872 people completed the follow-up.The study was used to analyze the relationship between metabolic syndrome and the risk of gallstones, and was also used to analyze the effects of gallstones on the development of metabolic syndrome, and calculate the risk ratio and its 95% confidence interval (HR, 95%CI), based on Jinchang cohort.

Results: The prevalence of metabolic syndrome was 34.8%, 36% and 33.2% in the total population, men and women. Multivariate Cox regression analysis showed that age, drinking, BMI and family history of hypertension are risk factors of cholecystitis and high education level, frequently exercise were protective factors of cholecystitis.

The prevalence of gallstones in the Jinchang cohort was 13.01% overall, 16.64% in females, 10.73% in males. After adjusting for age, smoking, drinking et al, the prevalence risk (OR, 95%CI) of gallstones in men, women and the general population with metabolic syndrome was respectively 1.57 (1.33-1.85), 1.87 (1.55-2.26) and 1.58 (1.40-1.78) for those without metabolic syndrome.

The incidence of gallstones in the general population with metabolic syndrome was 4.1%, and the incidence of gallstones in the population without metabolic syndrome was 2% in the Jinchang cohort. After adjusting for age, smoking, drinking et al, the risk of gallstones in the total population and female population with metabolic syndrome was higher than that of those without metabolic syndrome, with HR (95%CI) of 1.291 (1.016-1.642) and 1.466 (1.094-1.964).

Along with the increase in number of abnormal metabolic syndrome components, the incidence of gallstones also gradually rise, when there are five abnormal metabolic components, the incidence of gallstones of total population reached 10.9%, the women reached 12.5%. The risk of gallstones in women and total population with the five abnormal metabolic components are respectively 7.922 times and 5.011 times that of normal population. Cholecystectomy was found to be significantly associated with incident type 2 diabetes mellitus among individuals with prediabetes (HR = 1.703;95% CI, 1.299–2.233).

Conclusions: Metabolic syndrome can increase the risk of gallstones in the general population and women, and with the increase of abnormal number of components of metabolic syndrome, the risk of gallstones increases gradually.

Biography

Yana Bai has established the Jinchang cohort in China, as the largest multi-metal exposure cohort in the world, who is mainly engaged in the research of prevention and treatment strategies and measures for diabetes and cancer. The risk factors, etiology, pathogenesis, early diagnosis and evaluation of intervention effect of diabetes and tumor were carried out through Jinchang cohort.

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