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IMPACT OF CHOLELITHIASIS AND CHOLECYSTECTOMY ON THE INCIDENCE OF TYPE 2 DIABETES: LONG-TERM FOLLOW-UP OF KOREAN NATIONWIDE DATA

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Background : Cholecystectomy, a common treatment for gallbladder (GB) stones, has been suggested to increase the long-term risk of type 2 diabetes mellitus (T2DM), but evidence is limited. This study evaluates the risk of T2DM in patients with GB stones and those who have undergone cholecystectomy compared to healthy controls.

Methods : The data were sourced from the National Health Service database, including participants aged ≥30 years. The study population comprised patients with GB stones who underwent cholecystectomy (n=42,377), those with GB stones without surgery (n=42,377), and healthy controls (n=339,016), matched 1:1:4 by age and gender. Participants were followed for up to 12 years to monitor T2DM incidence. Participants were observed for a period of up to 12 years to monitor the incidence of T2DM. Kaplan-Meier analysis and hazard ratio (HR) estimates assessed the risk of T2DM across groups.

Results : T2DM incidence was significantly higher in patients with GB stones, irrespective of cholecystectomy status, compared to controls without GB stones ($p<0.001$). GB stones alone increased the risk of T2DM (HR 1.183, 95% CI 1.142-1.226, $p<0.001$), as did cholecystectomy (HR 1.143, 95% CI 1.103-1.184, $p<0.001$). No significant difference in T2DM risk was observed between patients with GB stones who underwent cholecystectomy and those who did not (Log-Rank $p=0.086$). Other risk factors included older age, higher BMI, smoking, hypertension, dyslipidemia, and impaired fasting glucose.

Conclusions : Gallstones, with or without cholecystectomy, significantly increase the risk of T2DM. Management of modifiable factors such as BMI, smoking and dyslipidaemia is necessary in patients with gallstones to reduce the risk of T2DM.

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