

中文題目：合併使用 COX-2 抑制劑與 Metformin 有較低的糖尿病伴有退化性關節炎病患的關節置換率-運用健保資料庫分析

英文題目：Combination COX-2 inhibitor and metformin attenuate rate of joint replacement in osteoarthritis with diabetes. A nationwide, retrospective, matched-cohort study in Taiwan

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**Background:** Osteoarthritis(OA) is the commonest form of arthritis which associated with an increased prevalence of type 2 diabetes mellitus(T2DM), however their impact on medical therapy decreasing joint replacement surgery has yet to be elucidated. This study aimed to investigate the combination COX-2 inhibitor and metformin therapy in OA with T2DM could lower the rate of joint replacement surgery than without metformin therapy.

**Methods:** In total, 968 subjects with OA and T2DM under COX-2 inhibitor and metformin therapy (case group) between 1 January to 31 December 2000 were selected from the National Health Insurance Research Database of Taiwan, along with and 1936 patients are the 1:2 sex-, age-, and index year-controls matched without metformin therapy (control group) in this study. Cox proportional hazards analysis was used to compare the rate of receiving joint replacement surgery during 10 years of follow-up.

**Results:** At the end of follow-up, 438 of all enrolled subjects (15.08%) had received the joint replacement surgery, including 124 in the case group (12.81%) and 314 in the control group (16.22%). The case group tended to have a lower rate of receiving the joint replacement surgery at the end of follow-up than the control group ( $p = 0.008$ ). Cox proportional hazards regression(HR) analysis revealed that study subjects under combination therapy with metformin had lower rate of joint replacement surgery (adjusted HR 0.742 (95% CI= 0.801-0.915,  $p = 0.005$ )). In the subgroups, study subjects in the combination metformin therapy who were female, good adherence (>80%), lived in the highest urbanization levels of residence, treatment in the hospital center and lower monthly insurance premiums were associated with a lower risk of joint replacement surgery than those without.

**Conclusions:** Patients have OA and T2DM receiving combination COX-2 inhibitors and metformin therapy could lower joint replacement surgery rates than those without

and this may be attributable to combination therapy much more decrease pro-inflammatory factors associated than those without metformin therapy.