

中文題目：Metformin 對於第 2 型糖尿病併有中度慢性腎臟病患者的腎功能影響

英文題目：Effect of metformin on the kidney function in patients with type 2 diabetic mellitus and moderate chronic kidney disease

作者：徐瑋壕^{1,2}，李美月^{1,2}，蕭璧容²，陳思嘉^{1,3}，辛錫璋²

服務單位：高雄市立小港醫院內科¹高雄醫學大學附設醫院內分泌新陳代謝內²
高雄醫學大學附設醫院腎臟內科³

Background: Renal impairment may cause the accumulation of metformin, and elevated metformin concentrations are proposed to lead to lactic acidosis. Our study purpose of this study was to evaluate the effect of continuous metformin use in patients with type 2 diabetes mellitus (DM) and moderate chronic kidney disease (CKD) (estimated glomerular filtration rate (eGFR) 30 - 60 ml/min/1.73m²) on renal function.

Materials and Methods: A total of the 616 patients meeting our criteria were enrolled from the research database of Kaohsiung Medical University Hospital between Jan 1, 2009 and Dec 31, 2013. 484 patients in metformin continuation group had continued taking metformin. 132 patients in metformin interruption group had discontinued taking metformin for at least 100 days.

Results: The slope of eGFR in the metformin interruption group was statistically lower than that in the metformin continuation group (0.75 ± 0.76 vs -1.32 ± 0.24 mL/min/1.73 m²/year, $p = 0.0007$). After adjustment for baseline covariates by the multivariate linear regression, metformin-continuation (unstandardized coefficient β , -2.072; 95% confidence interval (CI), -3.268 – -0.876) was a risk factor for patients with DM and moderate CKD. Other risk factors for renal function decline included high serum low-density lipoprotein cholesterol, high glycated hemoglobin, low baseline eGFR, high uric acid level, high urinary albumin creatinine ratio, and use of angiotensin-converting enzyme inhibitor and/or angiotensin receptor blocker.

Conclusions: Metformin may have adverse effect on the renal function in patients with type 2 DM and moderate CKD.

Key words: metformin, diabetes mellitus, chronic kidney disease, renal function decline, estimated glomerular filtration rate