

中文題目：糖尿病患者反覆低血糖後骨折的風險

英文題目：Impact of hypoglycemia on fracture risk in type 2 diabetes mellitus

作者：陳玟均<sup>1</sup>，蘇勤方<sup>1</sup>，陳永泰<sup>2</sup>，施家仁<sup>3</sup>，歐朔銘<sup>4</sup>

服務單位：臺北榮民總醫院內科部<sup>1</sup>，台北市立聯合醫院和平婦幼院區<sup>2</sup>，臺北榮民總醫院員山分院內科部<sup>3</sup>，臺北榮民總醫院內科部腎臟科<sup>4</sup>

**Background:** Hypoglycemia may be the underlying the risk factor for fracture in type 2 diabetes mellitus (T2DM), and that in fact the division into patients with and without hypoglycemia, instead of with intensive and standard glucose control, may allow to reflect the actual tendency of hypoglycemia to develop fracture. However, the association of hypoglycemia with the risk of fracture remains inconclusive.

**Method:** The records of inpatients and outpatients with T2DM were retrieved from the Taiwan National Health Insurance Database. Among T2DM patients who had hypoglycemia episodes, controls were matched using propensity scores on a 1:1 ratio. All subjects were followed up from the date of enrollment until fracture occurrence, death, or end of the study.

**Results:** There were 20,863 medicare beneficiaries with a diagnosis of hypoglycemia episodes and 20,863 controls without hypoglycemia episodes enrolled. Patients with severe hypoglycemia episodes had a higher incidence of fracture compared with controls (56.73 versus 45.33 per 1,000 person-years) and a greater risk of overall fractures (adjusted hazard ratio[aHR] 1.28, 95% confidence interval [CI], 1.19–1.38). Patients with mild hypoglycemia episodes still had a greater risk of overall fractures (adjusted hazard ratio[aHR] 1.16, 95% confidence interval [CI], 1.11–1.22). The fracture site mainly located at the head and neck (aHR 1.31, 95% CI, 1.06–1.61), upper limb (aHR 1.24, 95% CI, 1.14–1.36), lower limb (aHR 1.26, 95% CI, 1.18–1.36) and hip joint (aHR 1.44, 95% CI, 1.32–1.57).

**Conclusions:** Symptomatic hypoglycemia, both mild (outpatient) and severe (inpatient), is associated with an increased risk for fracture. Tight glycaemic control while avoiding hypoglycemic episodes should be emphasized by identification of risk factors for hypoglycemia, frequent blood glucose monitor and the adequate selection of glucose-lowering therapy to prevent long- term complications.