

Publication

Association Between Glycemic Control and Risk of Fracture in Diabetic Patients: A Nested Case-Control Study

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 4525421**Author(s)** Vavanikunnel, Janina; Charlier, Sarah; Becker, Claudia; Schneider, Cornelia; Jick, Susan S.; Meier, Christoph R.; Meier, Christian**Author(s) at UniBasel** [Meier, Christoph R.](#) ; [Schneider, Cornelia](#) ; [Charlier, Sarah](#) ; [Becker, Claudia](#) ;**Year** 2019**Title** Association Between Glycemic Control and Risk of Fracture in Diabetic Patients: A Nested Case-Control Study**Journal** The Journal of Clinical Endocrinology and Metabolism**Volume** 104**Number** 5**Pages / Article-Number** 1645-1654**Mesh terms** Adult; Biomarkers, analysis; Blood Glucose, analysis; Body Mass Index; Case-Control Studies; Diabetes Mellitus, Type 1, physiopathology; Diabetes Mellitus, Type 2, physiopathology; Female; Follow-Up Studies; Glycated Hemoglobin A, analysis; Humans; Hyperglycemia, epidemiology; Hypoglycemia, epidemiology; Incidence; Male; Middle Aged; Osteoporotic Fractures, pathology; Prognosis; Risk Factors; United Kingdom, epidemiology; Young Adult

Diabetes mellitus (DM) has been associated with an increased risk of fractures. However, the effect of glycemic control on the risk of fracture is not well understood.; To evaluate the association between glycemic control and the risk of low-trauma fractures in patients with type 1 DM (T1DM) and type 2 DM (T2DM).; Nested case-control analysis.; UK-based Clinical Practice Research Datalink.; The study population was patients whose T1DM or T2DM had been newly diagnosed between 1995 and 2015. The cases were patients with a low-trauma fracture after DM onset. We matched four controls to each case by age, sex, general practice, fracture date, and DM type and duration.; Conditional logistic regression analyses were performed, adjusted for covariates, including body mass index, smoking, DM complications and medications.; The study population included 3329 patients with T1DM and 44,275 patients with T2DM. The median duration between DM onset and fracture date was 4.5 years for both T1DM and T2DM. The risk of fracture was increased in the patients with T1DM with a mean hemoglobin A1c >8.0% (adjusted OR, 1.39; 95% CI, 1.06 to 1.83) compared with those patients with T1DM and a mean hemoglobin A1c ≤7.0%. No such effect was found in the patients with T2DM. Independently of glycemic control, the risk of fracture was elevated in patients with T2DM and the current use of rosiglitazone and pioglitazone.; The effect of glycemic control on the risk of low-trauma fracture differs between patients with T1DM and T2DM. Poor glycemic control increased the risk of fractures in patients with T1DM but not in those with T2DM.

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