

HOMOCYSTEINE AND
FOOT ULCERATION

Raised plasma concentrations of the amino acid homocysteine are associated with foot ulceration in patients with type 2 diabetes mellitus (T2DM), González and colleagues have found.

Foot ulceration is a serious complication of T2DM that can result in amputation. Neuropathy and peripheral vascular disease are the main causal mechanisms leading to ulceration, and potential new risk factors for these disorders, including plasma homocysteine concentration, have been found. The lead researcher of this case-control study, Jose T. Real of the University of Valencia in Spain, wanted to test whether these new factors are also associated with diabetic foot ulceration, an important aim, as "identification of new risk factors associated with diabetic foot ulcers could facilitate the early detection of patients at risk and improve management."

González *et al.* enrolled a total of 198 adults with T2DM: 109 with early or noncomplicated foot ulcerations (cases) and 89 without foot ulceration (controls), who were matched for age, sex, BMI and abdominal circumference to the cases. The researchers assessed the patients for neuropathy and peripheral vascular disease, and the patients' blood samples were tested for a range of classic and potential new risk factors.

The investigators found an association between known risk factors (HbA_{1c} levels and microalbuminuria) and a new risk factor (plasma homocysteine) and the presence of foot ulceration. However, only the presence of retinopathy or elevated plasma homocysteine levels were independently associated with foot ulceration.

"More studies should be conducted to help us select drugs that do not interfere negatively with homocysteine metabolism in patients with T2DM," says Real. The researcher also suggests that dietary advice could be used in order to decrease homocysteine levels in patients with T2DM—a Mediterranean diet would be ideal.

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Original article González, R. *et al.* Plasma homocysteine levels are associated with ulceration of the foot in patients with type 2 diabetes mellitus. *Diabetes Metab. Res. Rev.* doi:10.1002/dmrr.1061