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Medicine Update

GENDER DISPARITIES IN PAINFUL DIABETIC PERIPHERAL NEUROPATHY

Female patients with diabetes are at risk of developing painful diabetic peripheral neuropathy (DPN) suggesting that factors other than the traditional cardiometabolic factors may also be at play in the genesis of painful neuropathy.

Data from the EURODIAB Prospective Complications Study was analysed to examine the incidence and risk factors for painful DPN. The study involved 3250 participants with type 1 diabetes who were followed up for an average of 7.3 years. The methodology to evaluate DPN included clinical assessment, quantitative sensory testing and autonomic function tests. Painful DPN, defined as experiencing painful neuropathic symptoms in the legs among participants with confirmed DPN, was assessed at both baseline and follow-up.

At baseline, at least one-quarter (25.2%) of the participants with DPN had painful neuropathy. Over follow-up, 23.5% other patients developed incident DPN. Of these, ~15% had painful DPN. The painful and painless DPN groups did not differ much in terms of clinical and demographic variables such as age, body mass index (BMI), HbA1c, blood pressure and lipid profile.

It was observed that a higher proportion of female participants developed incident painful DPN compared to painless DPN; 73% vs 48%, respectively. This sex difference remained significant even after adjusting for the duration of diabetes and HbA1c levels with odds ratio (OR) of 2.69 for women vs men. Additionally, fewer patients with painful DPN had macro- or microalbuminuria compared to those with painless DPN; 15% vs 34%, respectively. This association also remained significant after adjusting for HbA1c levels, diabetes duration and sex.

This study, for the first time, provides valuable insights into the risk factors for painful DPN and suggests female sex as a risk factor for the same. It raises the possibility that painful DPN may not be solely be determined by traditional cardiometabolic risk factors such as HbA1c, diabetes duration, LDL-cholesterol, triglycerides, hypertension, smoking, body mass index (BMI). It may also be influenced by psychosocial, cultural and genetic factors. It highlights the potential importance of sex differences in the pathophysiology of neuropathic pain in diabetes. Future studies should therefore explore these factors to further understand the development of painful DPN.

Source

1. Jackie Elliott, et al. Female sex is a risk factor for painful diabetic peripheral neuropathy: the EURODIAB prospective diabetes complications study. Diabetologia. 2024;67(1): 190-198.

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