

Declining incidence of diabetic neuropathy in Denmark

Aim: To evaluate the incidence of distal symmetric sensorimotor polyneuropathy (DSPN) in a large cohort of subjects affected by type 1 (T1D) and type 2 diabetes (T2D) in Denmark between 1996 and 2018, followed at the Steno Diabetes Center Copenhagen, a tertiary point of care.

Methods: All subjects attending outpatient clinics were included in the study cohort (n=19342) during the study period. Following the inclusion and exclusion criteria (mainly: missing information, bilateral amputation) data on 9473 people were considered (T1D: 4761, T2D: 4712). DSPN was classified as a bilateral abnormal vibration perception threshold (VPT). In particular, two different cutoff values were applied to evaluate VPT abnormality: 1) >25 V and 2) age-sex-height-specific cut-off value.

Results: Using the >25 V cut-off for VPT, from 1996 to 2018, the incidence rate of DSPN decreased for both T1D and T2D. In particular, the incidence rate (95% CI) decreased from 4.78 (3.60–6.33)/100 person/year (PY) in 1996 to 1.15 (0.91–1.47)/100 PY in 2018 for a 40-year-old man with T1D and from 16.54 (11.80–23.18)/100 PY to 8.02 (6.63–9.69)/100 PY for a 60-year-old man with T2D. Similar rates were found for women. Similar findings were obtained using the age-sex-height-specific cut-off for VPT. Using both cut-offs the incidence rate of DSPN decreased over calendar time for both T1D and T2D. Regarding disease duration subjects with T1D showed an increase over time, meanwhile subjects with T2D after a ten-year disease duration showed a sort of plateau. Finally, slight differences were obtained from analyzing the data about age with the two different cut-offs, showing a clear increase over time for both T1D and T2D using the >25 V cut-off and a more specific pattern using the age-sex-height-specific cut-off.

Conclusions: A reduction in incidence rates over calendar time for DSPN was observed for subjects with both T1D and T2D. Some age-related patterns were identified, suggesting differences in the pathophysiology of DSPN.

Comments. This study with a long follow-up highlights reassuring findings in the management of subjects with diabetes, showing a reduction of DSPN over time for both subjects with T1D and T2D similarly to other diabetic complications. This improvement over time may be attributed to a better treatment and an improvement of glycaemic targets, but this should be confirmed by further studies with a specific design. Further, the role of the new hypoglycaemic treatment should be also carefully evaluated to understand their contribution towards these results.

The study was conducted in a tertiary center in Denmark and, as also the authors have highlighted, this could have introduced a selection bias in the analysis, considering that subjects with severe forms of diabetes were usually referred to these centers, implying even better results in the subjects with the mild form of the disease. Finally, age and disease duration play a major role in the development of DSPN.

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Reference. Mizrak HI, Hansen TW, Rossing P, Curovic VR, Vistisen D, Amadid H, Hansen CS. Declining Incidence Rates of Distal Symmetric Polyneuropathy in People With Type 1 and Type 2 Diabetes in Denmark, With Indications of Distinct Patterns in Type 1 Diabetes. *Diabetes Care*. 2023 Aug 30;dc230312. doi: 10.2337/dc23-0312. Epub ahead of print. PMID: 37647323.

<https://diabetesjournals.org/care/article/doi/10.2337/dc23-0312/153560/Declining-Incidence-Rates-of-Distal-Symmetric>