

This study comprehensively addresses the issue of spinal deviations (O.p.) in patients with Charcot-Marie-Tooth disease (CMT, or HMSN in Czech). Among a group of 141 patients diagnosed with CMT, individuals with spinal deviations were identified and further monitored.

The aim of the study was to specify the onset, frequency, characteristics, severity, and progression of spinal deviations in CMT. Until now, such deviations in CMT patients have not been evaluated in such a comprehensive manner. The study presents a summary of the findings, taking into account the individual genotypes of CMT.

Another objective was to clarify the nature of paraspinal muscle involvement and to determine when such involvement might contribute to the development of spinal deviations. These data have also not yet been published in relation to CMT. It was found that, in terms of the development of spinal deviations, diffuse neurogenic impairment—particularly of the deep, monosegmental paraspinal muscles—plays a significant role, especially when assessed as severe.

The study confirmed the assumption that neurogenic impairment of the paraspinal muscles is present in patients with spinal deviation. The results show that this impairment was found in all patients with spinal deviation. Furthermore, the assumption was confirmed that electromyographic findings in the paraspinal muscles differ between patients with and without spinal deviations: while neurogenic involvement was observed in all patients with spinal deviations, it was found in only 50% of those without deviations—and only in a mild form.

The results of this study support the hypothesis that the development of spinal deviations in CMT is influenced by insufficiency or imbalance of the paraspinal muscles due to neurogenic impairment. To further clarify the mechanism of spinal deviation development in CMT, it will be necessary to expand the patient sample and conduct long-term follow-up, including electromyographic studies across multiple levels of the paraspinal musculature.

With early diagnosis of spinal deviations in CMT patients and the initiation of targeted therapy, it is possible to prevent complications that may arise in these patients.