IMPROVING BALANCE IN DIABETIC PERIPHERAL NEUROPATHY THROUGH STABILOMETRIC PLATFORM REHABILITATION – A CASE REPORT

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Background

Diabetic peripheral neuropathy (DPN) is a common complication of diabetes mellitus, presenting significant challenges for rehabilitation management. This condition is caused by peripheral nerve damage, particularly in the lower limbs, resulting from prolonged hyperglycemia and is characterized by a variety of sensory, motor, and autonomic dysfunctions. The main cause of disability in these patients is balance disorders that increase substantially the risk of falls, consequent injuries, and a diminished quality of life. The integration of somatosensory, visual, and vestibular inputs is paramount for maintaining postural control and equilibrium.

Case report

We present the case of a 65-year-old male patient admitted in our rehabilitation department for numbness and burning sensations, muscle cramps and weakness, balance and gait disorders. He is known with a 20-year history of type 2 diabetes mellitus, diagnosed with stage II symmetrical distal peripheral neuropathy. The rehabilitation program, conducted over a 2-week period, included static and dynamic balance training using a stabilometric platform that includes virtual reality and visual feedback. Assessment was performed using the Michigan Neuropathy Screening Instrument (MNSI), Berg Balance Scale (BBS), Tinetti Balance and Gait Assessment, Timed Up and Go Test (TUG) and the platform evaluations, all of these being carried out before and after the rehabilitation treatment. At the end of the program, a significant improvement was noted, with the BBS score increasing from 49 to 52 points, Tinetti total score 18 to 26, indicating improved postural stability and functional mobility. Also demonstrated notable improvements in the most relevant stabilometric variables, with a marked reduction in sway path length and sway area, alongside a significant enhancement of the stability index.

Conclusion

The use of the stabilometric platform as a standalone rehabilitation tool resulted in meaningful improvements in balance disorders, underscoring its efficacy in managing diabetic peripheral neuropathy.

Keywords: diabetic, peripheral, neuropathy, stabilometric, platform