

RELATIONSHIP BETWEEN INJURY SEVERITY AND ELECTROPHYSIOLOGICAL CHANGES OF PNS IN SUBACUTE SCI

INTRODUCTION

The purpose of this study was to investigate the characteristics of the patients with electrophysiologic abnormalities of the peripheral nervous system after spinal cord injury.

METHODS

We conducted retrospective chart review of 151 patients from January 2014 to June 2018. Patients were divided into two groups with the presence of generalized denervation potential of lower limb below the neurological level of injury. Patients with denervation potential in three or more myotomes on bilateral limbs were classified as generalized denervation potential(GDP) group (27 patients), and those with in two or less myotomes on uni- or bilateral limbs were classified as non-GDP group (28 patients).

RESULTS

Patients with abnormal electrical physiologic change in peripheral nerves showed clinically severe spinal cord injury scale, and low Korea version of spinal cord independence measure score. In the two groups compared, the amplitude of peroneal, tibial, and sural nerve in GDP groups were statistically significantly low, and latency of the tibial nerve was significantly delayed. The number of patients showing an absent response as a result of motor evoked potential study and somatosensory evoked potential study in the GDP group was significantly higher ($P<0.05$).

CONCLUSION

The results showed that generalized denervation occurred in the group with severe spinal cord injury. This study shows that central nervous system injury can also affect the peripheral nervous system, which is thought to be proportional to the severity of central nervous system injury.