114

Uchiyama T. [1], Sakakibara R. [1], Kuwabara S [1],Hattori T. [1], Yamanishi T. [2]
1. Department of Neurology, School of Medicine, Chiba University, 2. Department of Urology, Dokkyo University

EVALUATION OF THE PERIPHERAL MOTOR PATHWAYS INNERVATING DETRUSOR MUSCLE BY MAGNETIC STIMULATION OF THE SACRAL ROOTS IN PATIENTS WITH DIABETES MELLITUS.

Aims of Study
Bladder dysfunction is a common complication in diabetes mellitus (DM), which are probably related to the sensory and autonomic neuropathy innervating the detrusor muscle. However, few methods are available to measure the autonomic neuropathy innervating it directly. We measured magnetic stimulation-detrusor contraction, which is safe and effective to evaluate peripheral motor pathways innervating the detrusor muscle.

Methods
We recruited nine normal volunteers (2 men and 7 women, mean age was 49.8) and seventeen patients with diabetic neuropathy (6 men and 11 women, mean age was 57.7). Magnetic single stimulation over the sacral spine was done to activate the sacral root and to evoke contractions of detrusor and rectum muscles. These responses were recorded as water pressure through catheters in the detrusor and the rectum.

Results
The bladder and rectum contractions could be recorded as the poly-phasic wave in all subjects. In comparison with normal subjects, the amplitude of the maximum evoked bladder and rectum contractions was significantly smaller, and the latencies, reflecting conduction time of evoked bladder and rectum contraction were significantly longer in patients with DM. Thresholds of stimulation to evoke the bladder and rectal contractions were also significantly higher in patients with DM.

Conclusions
The results suggest that the peripheral efferent pathways innervating the detrusor and the rectal muscles can be evaluated by magnetic stimulation of the sacral roots in patients with diabetic bladder dysfunction. Patients with DM may have both axonal (reduced amplitude) and demyelinating (prolonged latency) lesion, most probably reflecting efferent nerve disorder.