

Ropivacaine block anesthesia in patients with diabetic foot ulcer

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Objective. The objective was to study ropivacaine influence on peripheral nerve functional condition during sciatic nerve block anesthesia in patients operated on for necrotic suppurative diabetic foot ulcer. Materials and methods. N. peroneus functional condition was assessed by stimulated electromyography. Impulse conduction velocity (ICV) along motor fibers of mixed nerve: n.peroneus communis and profundus was measured as well as parameters of m-response to single stimulation with m.extensor digitorum brevis. Examinations were carried out before and a day after sciatic nerve block anesthesia using 20 ml 0.5% ropivacaine solution in 22 patients. Patients aged from 45 to 85 years have suffered from non-insulin dependent diabetes for 15 years or longer. There were 10 males and 12 females. Results. Examination of n. peroneus motor fibers functional condition after sciatic nerve block anesthesia did not reveal any statistically significant changes in M-response amplitude ($p= 0.807$) and in impulse conduction velocity along nerve fibers ($p= 0.961$) (See the table).

Electromyographic parameters changes associated with block anesthesia (n=22)

Parameter	Median	Lower and upper quartile	p
M-response amplitude before anesthesia, mV	0,75	0,44 - 1,52	0,807
M-response amplitude after anesthesia, mV	0,835	0,45 - 1,55	
ICV before anesthesia, m/s	38,65	30,7 - 40,7	0,961
ICV after anesthesia, m/s	36,45	34,9 - 40,8	

$p<0,05$ - statistically significant differences in parameters.

Conclusions. Electromyographic parameters examination demonstrates the absence of ropivacaine negative influence on peripheral nerve functional condition in patients with diabetic distal polyneuropathy.