

**MEDULLARY RAPHE MIDLINE IS INVOLVED IN PRODUCTION OF
EXPULSIVE EXPIRATIONS IN ANESTHETIZED RABBITS**

I. Poliaček¹, J. Jakuš¹, J. Knociková¹, H. Baráni¹, E. Halašová², and N. Višňovcová¹

¹Institute of Medical Biophysics, ²Institute of Medical Biology, Jessenius Faculty of
Medicine, Comenius University, Martin, Slovakia; poliacek@jfmed.uniba.sk

Effects of kainic acid lesion in the medullary raphe midline on reflex expirations induced mechanically from the trachea were examined. Spontaneously breathing rabbits were anesthetized by ketamine and xylazine, i.m., followed by pentobarbitone i.v. Excitatory neurotoxin kainic acid (2 mg/ml in artificial CSF, total volume of 55-100 nl.) was pressure microinjected into the medullary midline, rostral to the obex (2 microinjections at 2 different depths). The lesion (mostly affected the obscurus and magnus raphe nuclei) reduced the number of reflex expirations by 80% ($p < 0.05$) and expiratory amplitudes of esophageal pressure, abdominal EMG moving averages, and abdominal EMG powers by 71%, 62%, and 57%, respectively (in all cases $p < 0.05$). The duration of abdominal activity in post-lesion responses was not altered. Control microinjections of artificial CSF had no effect on the reflex responses. In rabbits, the medullary raphe nuclei participate in control of the number and the strength of expiratory expulsions originating from the trachea. Our results support the concept of separated neuronal circuits controlling the expression vs. motor pattern of the behavior.

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