

Effects of TRH microinjection into DVC on motility of the biliary system in rabbits

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Abstract

AIM: Thyrotropin-releasing hormone (TRH) is an important brain-gut peptide. In dorsal vagal complex (DVC), TRH, as a transmitter or transmodulator, plays an important role in regulating the secretion and motility of biliary system. This study was performed to investigate the effects of TRH in DVC on motility of the gallbladder (GB) and sphincter of Oddi (SO) in anesthetized rabbits.

RESULTS: (1) Microinjection of TRH (0.8 nmol, 1 μ L) into DVC raised GB pressure (GB), increased the frequency of phasic contraction of

GB, increased the frequency and amplitude of spike potentials of SO. (2) The injection of several doses of TRH (0.12, 0.25, 0.50, 0.80, 130 μ mol, 1 μ L) into DVC could excite the motility of GB and SO. As the dose of TRH was increased, the reaction and the duration of the reaction were also increased. (3) The effects of TRH in DVC on motility of the biliary system could be completely abolished by atropine *i.v.* (0.2 mg/kg), propranolol *i.v.* (1.5 mg/kg) or transecting the spinal cord.

CONCLUSION: These results indicated that TRH in DVC could excite motor activity of GB and SO through nerves, not *via* sympathetic nerves. The physiological significance of TRH in DVC may be to maintain the phasic contraction of GB in interdigestive period, thus prevent the formation of gallstones.

Key words: Thyrotropin-releasing hormone microinjection; Dorsal vagal complex; Motility; Biliary system

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