Original Paper

Effect of hydrogen sulphide on motor activity in mice jejunum

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Abstract

Background and Objective: Biological activity of hydrogen sulphide in smooth muscle of vessel and non-vessel tissue are contradictory. The aim of this study was to examine the effect of hydrogen sulphide on smooth activity of muscle mice jejunum.

Materials and Methods: Experiments were performed on mice jejunum and motor activity was recorded from in vitro segments of jejunum ~ 4 cm in length. jejunal segments were mounted horizontally in separate perfusion chamber. Furthermore, using vanilloid receptor 1 deficient mice (VR 1-/-) we tested hypothesis that extrinsic sensory nerves mediated alterations, in motor activity responses in the presence different concentration of of hydrogen sulphide (100-3000 μM).

Results: Serosal application of NaHS (as hydrogen sulphide donor) produced a dose-dependent inhibition of motor activity that are not significantly different between VR 1-/- and VR 1 +/+ mice. In the presence of TTX (1μM) NaHS (300μM) caused a reduction in basal tone (19.5%, $p<0.05$, n=5) and inhibited the contraction evoked by 30μM bethanechol by 55% (n=5, $p<0.05$).

Conclusion: This study showed that hydrogen sulphide is an important motor activity inhibitor in mice jejunum.

Keywords: Hydrogen sulfide, Mice, Intestine, Motor activity

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