Effect of hydrogen sulphide on motor activity in mice jejunum

Reza Rahmati (PhD)*1, David Grundy (PhD)2
1 Assistant Professor, Department of Physiology, Gorgan University of Medical Sciences, Gorgan, Iran.
2 Professor, Department of Biomedical Science, University of Sheffield, Sheffield, UK.

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

* Corresponding Author: Reza Rahmati (PhD), E-mail: rahmati.r@gmail.com

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