

A potential treatment for gastric motility disorders

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GES or pacing has been under investigation as a potential therapy for gastrointestinal motility disorders. Conventionally, GES is performed using a single pair of electrodes or single-channel GES. However, few studies have investigated the effects of two-channel GES with trains of pulses on gastric motility, such as gastric slow waves and gastric emptying.

A research article to be published in May 21, 2009 in the *World Journal of Gastroenterology* addresses this question. The research team led by Prof. Chen from University of Texas Medical Branch studied the effects of two-channel GES with trains of pulses on gastric slow waves and gastric emptying in health dogs.

Most previous studies showed that long pulse GES was able to entrain gastric slow waves in human and animals. None of previous studies have investigated the effect of GES with trains of pulses on gastric slow waves. It has been indicated that GES with trains of short pulses was able to improve symptoms, such as nausea and vomiting of gastroparesis, but was not capable of entraining gastric slow waves or normalizing gastric dysrhythmias. In this study, we have shown that GES with trains of pulses is able to entrain gastric slow waves when the pulses in the train are of a width of 4ms or higher.

Recently, a few studies were performed to investigate the efficiency of multi-channel GES on gastric emptying and entrainment of slow waves. Some studies indicated that multi-channel stimulation with long pulses

was more efficient than single-channel stimulation for the entrainment of slow waves and the acceleration of gastric emptying. To date, no study has investigated the effects of multi-channel GES with trains of pulses on gastric emptying. In our experiment, we found two-channel but not single-channel GES with trains of pulses significantly accelerated gastric emptying.

The results of our study suggest that 2-channel GES with trains of pulses may be applicable for the treatment of gastroparesis and normalization of gastric dysrhythmia. GES with trains of pulses is technically more attractive than long pulse GES. Currently, most of commercially available implantable stimulators use trains of pulses. However, none of available implantable stimulators are capable of generating pulses with a width equal to or larger than 4ms. Therefore, new hardware design and development are needed.

Source: World Journal of Gastroenterology ([news](#) : [web](#))

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