NOVEL AGENTS FOR THE TREATMENT OF GASTRIC ULCERS

Parchami Ghazaee Sepideh  
PhD in biological sciences, assistant of the Department of Pharmacology, Clinical Pharmacology, Pathological Physiology,  
*Kiev Medical University, Ukraine*  

Singh Shivendra  
3rd year student of Medicine  
*Kiev Medical University, Ukraine*

Gastric, or peptic ulcers, are a common pathological development in the epithelial lining of the stomach, due to the erosion of the protective mucus layer by endogenous acid and pepsin. They arise due to a variety of factors including *Helicobacter pylori* infection, alcohol abuse, smoking, or chronic use of non-steroidal anti-inflammatory drugs (NSAIDs) (Kuna et al., 2019 p1). Conventional treatments of peptic ulcers, such as proton pump inhibitors (PPIs) and histamine-2 (H2) receptor antagonists have a well-documented range of adverse effects (Kuna et al., 2019 p2) and so novel treatments and new therapeutic strategies are currently being researched.

Commonly prescribed PPIs include lansoprazole and esomeprazole, both of which have been measured in efficacy against a potential novel treatment in the potassium-competitive acid blocker (P-CAB), tegoprazan. In a phase 3 study randomized clinical trial, Cho and co-authors investigated whether tegoprazan therapies administered in dosages of 50 and 100mg were non-inferior with lansoprazole. They concluded tegoprazan was non-inferior to lansoprazole 30 mg and had a favorable safety profile (Cho et al. 2020 p796). A similar randomized phase 3 trial conducted by Lee and co-authors found a single daily dose of tegoprazan 50 or 100 mg showed non-inferior efficacy in healing and comparable tolerability to that of esomeprazole 40 mg (Lee et al., 2019 p870). Tegoprazam was found to have been well tolerated and showed rapid and potent gastric acid suppression by Han and co-authors, who recommended further development of tegoprazan as a treatment for acid-related disorders (Han et al., 2019). Recent research involving experimentally-induced ulcers in mice has shown promising gastroprotective features of the biologically-active phytochemical, Allantoin (ALL), using nanotechnological delivery systems. A study involving various models including ethanol, indomethacin, and stress-induced gastric ulcers in mice concluded demonstrated for the first time that ALL possesses gastroprotective activity through anti-inflammatory, anti-oxidative, antisecretory, and cytoprotective mechanisms (da Silva et al., 2018 p.68). Aman and co-authors (2021) utilized ALL-loaded chitosan/sodium tripolyphosphate
nanoparticles (ALL-loaded CS/STPP NPs) prepared by ionotropic gelation technique, demonstrating significant antiulcerogenic activity in vivo and concluding ‘ALL-loaded CS/STPP NPs could be presented to the phytomedicine field as an auspicious oral delivery system for gastric ulceration management. (Aman et al., 2021 p1).

References: