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Abstract	<p>BACKGROUND</p> <p>Gastrin promotes pancreatic β cell neogenesis and replication and has been associated with increased insulin secretion. Therapies targeting gastrin levels may improve glycemic control of patients with type 2 diabetes mellitus (T2DM). Proton pump inhibitors (PPIs) indirectly elevate gastrin levels, therefore we hypothesize that PPI therapy is associated with improved glycemic control in T2DM patients.</p> <p>DESIGN</p> <p>We conducted a retrospective chart review of patients with T2DM who received care at AnMed Health from 01/01/2018 to 12/31/2018 to compare hemoglobin A1c (HbA1c), C-peptide, and glucose levels in patients with and without active PPI therapy. We also collected information on coronary artery disease (CAD), cerebrovascular accidents (CVAs), and lipid panels as secondary outcomes.</p> <p>RESULTS</p> <p>The PPI and non-PPI groups had no difference regarding age, sex, race and BMI. There was no significant difference in HbA1c levels between PPI and non-PPI groups ($8.6\% \pm 2.1$ vs $8.3\% \pm 2.0$, respectively; p value = 0.37). However, we found a significant increase in C-peptide levels ($3.1 \text{ ng/mL} \pm 2.4$ vs $2.4 \text{ ng/mL} \pm 2.3$; p value = 0.037) and decrease in LDL levels ($79.6 \text{ mg/dL} \pm 34.0$ vs $89.73 \text{ mg/dL} \pm 32.9$; p value = 0.046) in the PPI group. In addition, there was a significantly greater prevalence of CAD in the PPI group (p = 0.01) and a trending association for greater HTN prevalence (p = 0.06).</p> <p>CONCLUSION</p> <p>PPI therapy in patients with T2DM was not associated with improved glycemic control. However, insulin secretion was significantly higher in T2DM patients who were on PPI therapy. The lack of difference in HbA1c levels may be a result of aggressive diabetic management to achieve goal HbA1c. PPI therapy in patients with T2DM was associated with higher prevalence of CAD. Further research is needed to understand the gastrin pathway as a potential option for glycemic control.</p>
Learning Objectives	<p>Describe the rationale for studying the association between gastrin-modulating therapies and glycemic response</p> <p>Analyze the role of PPI therapy in insulin-glucose homeostasis for patients with type 2 diabetes mellitus</p>
References and Resources	<p>Creutzfeldt W. Gastrointestinal Hormones and Insulin Secretion. N Engl J Med. 1973; 288:1238-1239. DOI: 10.1056/NEJM197306072882312</p> <p>Takebayashi K, Inukai T. Effect of proton pump inhibitors on glycemic control in patients with diabetes. World J Diabetes. 2015 Aug 25; 6(10): 1122–1131.</p>
Disclosures	<p>All authors and coauthors have no relevant financial relationships to disclose.</p> <p>The author does not intend to discuss an off-label/investigative use of a commercial product/device.</p>