**Introduction**

Gastrin is a digestive hormone that acts on the neuroendocrine and parietal cells of the gastrointestinal tract to ultimately secrete gastric acid. Gastrin secretion begins even before food is consumed, as the mere anticipation of a meal can lead to a series of events ending in the creation of the gastric acid needed to breakdown foods. Not only does Gastrin support the digestion of foods, but it also stimulates growth, secretion, blood flow, and acts as a defense mechanism against bacteria in the gastrointestinal system. When the production of Gastrin becomes overt, major consequences like that of Zollinger Ellison Syndrome (ZES). ZES is an extremely rare disease occurring in people between the ages of 30-60. ZES is related to the uncontrolled secretion of gastrin due to the presence of certain pancreatic or duodenal tumors. The tumor stimulates the acid-secreting cells of the stomach to maximal activity, with consequent gastrointestinal mucosal ulceration.

**Roles of Gastrin in the Human Body**

- Stimulates the secretion of gastric acid by the parietal cells of the stomach
- Assists in the absorption of some vitamins
- Kills harmful bacteria found on food
- Causes secretion of other digestive enzymes
- Triggers blood flow, gastric movement and mucosal growth in the gastrointestinal system

**Current Studies**

Current Studies in Gastrin are centralized around ZES, a disease causing gastrointestinal mucosal ulceration. A clinical study in Japan is currently exploring the clinical presentation of ZES and the accuracy of ZES diagnosis.

**When Gastrin Goes Awry: Zollinger-Ellison Syndrome**

ZES is a disease that can cause neuroendocrine tumors in the pancreas, known as gastrinomas. These tumors secrete large quantities of gastrin, and therefore increasing the production and release of gastric acid in the stomach. The increased secretion of gastric acid results in perforation and irritation of the gastric and duodenal wall. ZES is difficult to diagnose as the use of proton pump inhibiting drugs like Nexium can mask the diagnosis.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Diagnosis</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequent Abdominal Pain</td>
<td>Fasting Serum Gastrin Levels</td>
<td>High dose of proton pump inhibitors</td>
</tr>
<tr>
<td>Nausea</td>
<td>Serum Calcium Levels</td>
<td>Surgery to remove the affected area</td>
</tr>
<tr>
<td>Blood in Vomit and Stool</td>
<td>Gastric Acid Secretory Tests</td>
<td></td>
</tr>
<tr>
<td>Heartburn</td>
<td>Provocative Tests</td>
<td></td>
</tr>
</tbody>
</table>

**MEN 1 & ZES**

MEN1 is an inheritable disease that causes over secretion of hormones via tumors on the endocrine glands throughout the body. Around a 30% of these tumors are found to be malignant. ZES is commonly associated with the MEN1 due to the presence of tumors found in the stomach and small intestine. These gastrointestinal tumors caused by MEN 1 give the person a higher likelihood of contracting ZES, as the probability of having pancreatic or duodenal tumors is increased.

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**References**

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