Clinical Group

Archives of Clinical Gastroenterology

Review Article

Influence of Long-Term Use of Proton Pump Inhibitors on Esophageal and Gastrointestinal Precancerous Lesions or Carcinoma

Baoge QU1*, Hao QU2

1Department of Gastroenterology, Taishan Hospital, Shandong Province, P. R. China
2Department of Gastroenterology, Yuhuangding Hospital, Yantai city, Shandong 271000, P. R. China

Dates: Received: 24 March, 2017; Accepted: 16 May, 2017; Published: 18 May, 2017

*Corresponding author: Baoge QU, Professor, Department of Gastroenterology, Taishan Hospital, Shandong Province, No. 3 Tianwaicun Street, Taiwan City 271000, P. R. China, E-mail: qubage@siha.com

https://www.peertechz.com

Abstract

Patients with GERD and Barrett’s oesophagus should be encouraged to continue long term use of PPI therapy as a preventive measures for oesophageal adenocarcinoma. However, the conclusions, whether long-term use of PPI may cause FGPs and gastric carcinoma development, remain inconsistent. Now, individual reports showed that long-term treatment with PPI might cause gastric neuroendocrine tumors (g-NETs) and the development of ECL cell carcinoids. Presently enormous study’s conclusion supported that long-term use of PPI does not increase in risk of colorectal cancer. Hence, clinical physicians must weigh potential risks of long-term use of PPI against gastrointestinal precancerous lesions or carcinoma.

Introduction

Previously the substantial data on long-term treatment of humans with proton pump inhibitors (PPI) has not revealed any definite risks [1] and prolonged gastric acid suppression with PPI rarely produced adverse event [2]. Hence, Proton pump inhibitors have an excellent safety profile [3], supporting the short-and long-term safety of PPI [4]. They have been become a commonly prescribed class of drugs worldwide [3,5], long-term use of PPI is becoming more prevalent [6]. However, current evidences have demonstrated that long-term use of PPI might generate certain adverse events [3]. Thus, the viewpoints of adverse events for long-term use of proton pump inhibitors in human remain inconsistent. Moreover, studies have shown that chronic acid suppression by proton pump inhibitor therapy might lead to hypergastrinemia [7–9] and increasing enterochromafﬁn-like cell dysplasia and risk of gastric.

NET development, and progression of carcinogenesis in a certain predisposed subset of Barrett’s esophagus patients [9]. However, a contradictory conclusion did not support gastrin dependence of adenocarcinoma of the stomach or the colon and considering that it might be explained by the presence of gastrin receptors of tumour cells and the role of gastrin as an autocrine growth factor in some of these tumours [10]. Additionally, a study suggested that prolonged hypochlorhydria predisposed to gastric carcinoma by an increase in the production of carcinogenic N-nitroso compounds [11].

However, accumulated evidence [12], has shown that gastrin likely does not promote—and may even suppress—distal antral gastric cancer. Hence, these hypotheses have led to concerns about the safety of long-term PPI administration [11,13]. Particularly, whether long-term use of proton pump inhibitors in human might result in esophageal and gastrointestinal precancerous lesions or carcinoma causes the extensive concern in the clinical.

1. The associations between long-term uses of proton pump inhibitors and Barrett's esophagus, esophageal cancerGastroesophageal reflux disease (GERD) is a risk factor for the development of Barrett’s esophagus and esophageal adenocarcinoma. Current evidences have confirmed that long-term use of PPI seems to be a safe and efficient treatment for GERD [14,15] and Barrett’s oesophagus [16]. Long–term acid suppression reduced proliferation in Barrett’s esophagus samples [17] and may reduce esophageal adenocarcinoma (EAC) by a minimum of 19% [18]. Use of ongoing PPI therapy appeared beneficial in the prevention of dysplasia and adenocarcinoma in patients with Barrett's oesophagus [19]. Although PPI treatment over 1–13 years did not shorten the Barrett’s oesophagus segment but squamous islands appeared in many patients, and, the incidence of oesophageal adenocarcinoma received proton pump inhibitor–treated patients was low [20]. Hence, PPI use was associated with a decreased incidence of neoplasia in Barrett’s esophagus [21], supporting a cancer-protective role for PPI in patients with Barrett’s esophagus.
PPI did not influence frequency, growth, or histology of adenomatous polyps [33]. Long-term use of PPI might cause FGP's or hyperplasia of enterochromaf fi n-like cell carcinoids [42,43], illustrating a patient with a poorly differentiated neuroendocrine carcinoma with ECL cell characteristics probably induced by hypergastrinemia secondary to long-term use of PPI [42]. There were reports indicating development of ECL cell carcinoids after long-term treatment with proton pump inhibitors [43] and hypergastrinemia secondary to PPI treatment might induce enterochromaffin-like cell carcinoids in man [44,45]. Additionally, based on few case reports showed although PPI-induced hypergastrinaemia has the potential to stimulate hyperplasia of enterochromaffin-like (ECL) cells, however, the role was very weak, considering Physicians have to continue PPI prescription without any fear about the occurrence of this adverse event [46]. However, Children with long-term use of PPI did not appear to develop atrophic gastritis or carcinoid tumours [47]. In short, whether long-term use of PPI might result in gastric carcinoma development and carcinoid tumours need to be verified by large prospective studies.

3. The association between long-term uses of proton pump inhibitors and colorectal cancer,

Enormous studies have indicated no association between long-term use of PPI at a regular dose and the increase in risk of colorectal cancer [8,48-52]. However, only a previously study suggested that PPI use might be modestly associated with CRC risk [53,54]. According to the results of the present majority studies, the conclusion seem to support the opinions, which long-term use of PPI does not increase in risk of colorectal cancer. Further research should needed to confirm the lock of a risk-increasing effect of long-term use of PPI.

Conclusion

Patients with GERD and Barrett's oesophagus should be encouraged to continue long term use of PPI therapy as a preventive measures for oesophageal adenocarcinoma. However, whether long-term use of PPI may cause FGP's and gastric carcinoma development remains are inconsistent. Long-term treatment with PPI might cause gastric neuroendocrine tumors (g-NETs) [42,43], and the development of ECL cell carcinoids. The presently study's conclusion seem to support that long-term use of PPI does not increase in risk of colorectal cancer. Hence, Physicians must weigh potential risks of long-term use of PPI against therapeutic benefits. The continued follow-up of patients taking PPI for extended periods will provide greater experience regarding the potential gastrointestinal adverse effects of long-term acid suppression.
References


Citation: Baoge QU, Hao QU (2017) Influence of Long-Term Use of Proton Pump Inhibitors on Esophageal and Gastrointestinal Precancerous Lesions or Carcinoma. Arch Clin Gastroenterol 3(2): 027-032. DOI: http://doi.org/10.17352/2455-2283.000034


