I'm not a bot

إرشادات علاج التهاب المعدة الحادث

Class of drugs for reducing stomach acid Proton-pump inhibitorDrug classGeneral structure of a proton-pump inhibitorClass identifiersUseReduction of gastric acid productionATC codeA02BCMechanism of actionEnzyme inhibitorBiological targetH+/K+ ATPaseClinical dataDrugs.comDrug ClassesWebMDMedicineNet External linksMeSHD054328Legal statusIn Wikidata Proton-pump inhibitors (PPIs) are a class of medications that cause a profound and prolonged reduction of stomach acid production. They do so by irreversibly inhibiting the stomach's H+/K+ ATPase proton pump.[1] The body eventually synthesizes new proton pumps to replace the irreversibly inhibited ones, a process driven by normal cellular turnover, which gradually restores acid production.[2] Proton-pump inhibitors have largely superseded the H2-receptor antagonists, a group of medications with similar effects but a different mode of action, and heavy use of antacids.[3] A potassium-competitive acid blocker (PCAB) revaprazan was marketed in Korea as an alternative to a PPI. A newer PCAB vonoprazan with a faster and longer lasting action than revaprazan, and PPIs has been marketed in Japan (2013), Russia (2021), and the US (2023).[4][5][6] PPIs are among the most widely sold medications in the world. The class of proton-pump inhibitor medications is on the World Health Organization's List of Essential Medicines.[7][8] Omeprazole is the specific listed example.[7][8] These medications are used in the treatment of many conditions, such as: Dyspepsia[9][10] Peptic ulcer disease including after endoscopic treatment for bleeding[11] As part of Helicobacter pylori eradication therapy[12] Gastroesophageal reflux disease (GERD or GORD) including symptomatic endoscopy-negative reflux disease[13] and associated laryngopharyngeal reflux causing laryngitis[14] and chronic cough[15] Barrett's esophagus[16] Eosinophilic esophagitis[17] Stress gastritis and ulcer prevention in critical care[18] Gastrinomas Zollinger–Ellison syndrome (often 2–3× the regular dose is required)[19] Specialty professional organizations recommend that people take the lowest effective PPI dose to achieve the desired therapeutic result when used to treat gastroesophageal reflux disease long-term.[20][21][22] In the United States, the Food and Drug Administration (FDA) has advised that over-the-counter PPIs, such as Prilosec OTC, should be used no more than three 14-day treatment courses over one year.[23][24] Despite their extensive use, the quality of the evidence supporting their use in some of these conditions is variable. The effectiveness of PPIs has not been demonstrated for every case. For example, although they reduce the incidence of esophageal adenocarcinoma in Barrett's oesophagus,[16] they do not change the length affected.[25] In addition, research in the UK has suggested that PPIs are not effective at treating persistent throat symptoms.[26][27] PPIs are often used longer than necessary. In about half of people who are hospitalized or seen at a primary care clinic there is no documented reason for their long-term use of PPIs.[28] Some researchers believe that, given the little evidence of long-term effectiveness, the cost of the medication and the potential for harm means that clinicians should consider stopping PPIs in many people.[29] In general, proton pump inhibitors are well tolerated, and the incidence of short-term adverse effects is relatively low. The range and occurrence of adverse effects are similar for all of the PPIs, though they have been reported more frequently with omeprazole. This may be due to its longer availability and, hence, clinical experience.[citation needed] Common adverse effects include headache, nausea, diarrhea, abdominal pain, fatigue, and dizziness.[30] Infrequent adverse effects include rash, itch, flatulence, constipation, anxiety, and depression. Also infrequently, PPI use may be associated with occurrence of myopathies, including the serious reaction rhabdomyolysis.[31] Long-term use of PPIs requires assessment of the balance of the benefits and risks of the therapy.[32][33][34][35] As of March 2017, various adverse outcomes have been associated with long-term PPI use in several primary reports, but reviews assess the overall quality of evidence in these studies as "low" or "very low".[34] They describe inadequate evidence to establish causal relationships between PPI therapy and many of the proposed associations, due to study design and small estimates of effect size.[35] As of March 2017, benefits outweighed risks when PPIs are used appropriately, but when used inappropriately, modest risks become important.[34][36] They recommend that PPIs should be used at the lowest effective dose in people with a proven indication, but discourage dose escalation and continued chronic therapy in people unresponsive to initial empiric therapy.[35] With regard to iron and vitamin B12, the data is weak and several confounding factors have been identified.[33] Low levels of magnesium can be found in people on PPI therapy and these can be reversed when they are switched to H2-receptor antagonist medications.[33][37][24] High dose or long-term use of PPIs carries an increased risk of bone fractures which was not found with short-term, low dose use; the FDA included a warning regarding this on PPI drug labels in 2010.[23] In infants, acid suppression therapy is frequently prescribed to treat symptomatic gastroesophageal reflux in otherwise healthy infants (that is: without gastroesophageal reflux disease). A study from 2019 showed that PPI use alone and together with histamine H2-receptor antagonists was associated with an increased bone fracture hazard, which was amplified by days of use and earlier initiation of therapy.[38] The reason is not clear; increased bone break down by osteoclasts has been suggested.[39] A recent 2024 study published in the Journal of Clinical Endocrinology & Metabolism found that chronic use of PPIs in men is linked to lower trabecular bone quality.[40] Specifically, PPI use was associated with reduced lumbar spine trabecular bone score (TBS), as well as lower bone mineral density (BMD) T-scores in the lumbar spine, total hip, and femoral neck.[41] These findings suggest that long-term PPI use may negatively affect bone health in men. Some studies have shown a correlation between use of PPIs and Clostridioides difficile infection. While the data are contradictory and controversial, the FDA had sufficient concern to include a warning about this adverse effect on the label of PPI medications.[33] Concerns have also been raised about spontaneous bacterial peritonitis (SBP) in older people taking PPIs and in people with irritable bowel syndrome taking PPIs; both types of infections arise in these populations due to underlying conditions and it is not clear if this is a class effect of PPIs.[33] PPIs may predispose an individual to developing small intestinal bacterial overgrowth or fungal overgrowth.[42][43] In cirrhotic patients, large volume of ascites and reduced esophageal motility by varices can provoke GERD.[44][45][46] Acidic irritation, in return, may induce the rupture of varices.[47] Therefore, PPIs are often routinely prescribed for cirrhotic patients to treat GERD and prevent variceal bleeding. However, it has been recently shown that long term use of PPIs in patients with cirrhosis increases the risk of SBP and is associated with the development of clinical decompensation and liver-related death during long-term follow-up.[48] There is evidence that PPI use alters the composition of the bacterial populations inhabiting the gut, the gut microbiota.[49] Although the mechanisms by which PPIs cause these changes are yet to be determined, they may have a role in the increased risk of bacterial infections with PPI use.[50] These infections can include Helicobacter pylori due to this species not favouring an acid environment, leading to an increased risk of ulcers and gastric cancer risk in genetically susceptible patients.[50] PPI use in people who have received attempted H. pylori eradication may also be associated with an increased risk of gastric cancer.[51] The validity and robustness of this finding, with the lack of causality, have led to this association being questioned.[52] It is recommended that long-term PPIs should be used judiciously after considering individual's risk–benefit profile, particularly among those with history of H. pylori infection, and that further, well-designed, prospective studies are needed.[53] Long-term use of PPIs is associated with the development of benign polyps from fundic glands (which is distinct from fundic gland polyposis); these polyps do not cause cancer and resolve when PPIs are discontinued.[33] There is concern that use of PPIs may mask gastric cancers or other serious gastric problems.[33] PPI use has also been associated with the development of microscopic colitis.[54] Associations of PPI use and cardiovascular events have also been widely studied but clear conclusions have not been made as these relative risks are confounded by other factors.[55][56] PPIs are commonly used in people with cardiovascular disease for gastric protection when aspirin is given for its antiplatelet actions.[55][57] An interaction between PPIs and the metabolism of the platelet inhibitor clopidogrel is known and this drug is also often used in people with cardiac disease.[58][59][22] There are associations with an increased risk of stroke, but this appears to be more likely to occur in people who already have an elevated risk.[60] One suggested mechanism for cardiovascular effects is because PPIs bind and inhibit dimethylargininase, the enzyme that degrades asymmetric dimethylarginine (ADMA), resulting in higher ADMA levels and a decrease in bioavailable nitric oxide.[61] A 2022 umbrella review of 21 meta-analyses shows an association between proton-pump inhibitor use and an increased risk of four types of cancer.[62] Associations have been shown between PPI use and an increased risk of pneumonia, particularly in the 30 days after starting therapy, where it was found to be 50% higher in community use.[63][64] Other very weak associations of PPI use have been found, such as with chronic kidney disease,[65][66][67][22][68][69] dementia[70][34][71] and Hepatocellular carcinoma (HCC).[72] As of 2016, results were derived from observational studies, it remained uncertain whether such associations were causal relationships.[34][35][73] The activation of PPIs Proton pump inhibitors act by irreversibly blocking the hydrogen/potassium adenosine triphosphatase enzyme system (the H+/K+ ATPase, or, more commonly, the gastric proton pump) of the gastric parietal cells.[74] The proton pump is the terminal stage in gastric acid secretion, being directly responsible for secreting H+ ions into the gastric lumen, making it an ideal target for inhibiting acid secretion.[citation needed] Because the H,K-ATPase is the final step of acid secretion, an inhibitor of this enzyme is more effective than receptor antagonists in suppressing gastric acid secretion.[75] All of these drugs inhibit the gastric H,K-ATPase by covalent binding, so the duration of their effect is longer than expected from their levels in the blood.[76] Targeting the terminal step in acid production, as well as the irreversible nature of the inhibition, results in a class of medications that are significantly more effective than H2 antagonists and reduce gastric acid secretion by up to 99%.[77] Decreasing the acid in the stomach can aid the healing of duodenal ulcers and reduce the pain from indigestion and heartburn. However, stomach acids are needed to digest proteins, vitamin B12, calcium, and other nutrients, and too little stomach acid causes the condition hypochlorhydria.[citation needed] The PPIs are given in an inactive form, which is neutrally charged (lipophilic) and readily crosses cell membranes into intracellular compartments (like the parietal cell canaliculus) with acidic environments. In an acid environment, the inactive drug is protonated and rearranges into its active form. As described above, the active form will covalently and irreversibly bind to the gastric proton pump, deactivating it. In H. pylori eradication, PPIs help by increasing the stomach pH, causing the bacterium to shift out of its coccoid form which is resistant to both acids and antibiotics. PPIs also show some weaker additional effects in eradication.[78] The rate of omeprazole absorption is decreased by concomitant food intake.[79] In addition, the absorption of lansoprazole and esomeprazole is decreased and delayed by food. It has been reported, however, that these pharmacokinetic effects have no significant impact on efficacy.[80][81] In healthy humans, the half-life of PPIs is about 1 hour (9 hours for tenatoprazole), but the duration of acid inhibition is 48 hours because of irreversible binding to the H,K-ATPase.[82] All the PPIs except tenatoprazole are rapidly metabolized in the liver by CYP enzymes (mostly by CYP2C19 and 3A4).[82] Dissociation of the inhibitory complex is probably due to the effect of the endogenous antioxidant glutathione which leads to the release of omeprazole sulfide and reactivation of the enzyme.[83][84] Medically used proton pump inhibitors:[citation needed] Dexlansoprazole[85] Esomeprazole (OTC and Rx-only in the US and Australia)[86] Ilaprazole (not FDA-approved as of July 2019[update]) Lansoprazole (OTC and Rx-only in the US)[85] Omeprazole (over-the-counter drug)[86] Pantoprazole[87] Rabeprazole[88] There is no clear evidence that one proton pump inhibitor works better than another.[1][89] See also: Discovery and development of proton pump inhibitors PPIs were developed in the 1980s, with omeprazole being launched in 1988. Most of these medications are benzimidazole derivatives, related to omeprazole, but imidazopyridine derivatives such as tenatoprazole have also been developed.[77] Potassium-competitive inhibitors such as revaprazan reversibly block the potassium-binding site of the proton pump, acting more quickly, but are not available in most countries.[90] In British Columbia, Canada the cost of the PPIs varies significantly from CA$0.13 to CA$2.38 per dose[91] while all agents in the class appear more or less equally effective.[1][89] A comparative table of FDA-approved indications for PPIs is shown below. Comparative indications[92] Indication Omeprazole Esomeprazole Lansoprazole Dexlansoprazole Pantoprazole Rabeprazole Gastroesophageal reflux disease Erosive esophagitis-healing Yes Yes Yes Yes Yes Yes Erosive esophagitis-maintenance Yes Yes Yes Yes Yes Yes Nonerosive reflux disease Yes Yes Yes Yes No Yes Peptic ulcer disease Duodenal ulcer-healing Yes No Yes No No Yes Duodenal ulcer-maintenance No No Yes No No No Gastric ulcer-healing Yes No Yes No No No NSAID induced ulcer-healing No No Yes No No No NSAID induced ulcer-prophylaxis No Yes Yes No No No Zollinger–Ellison syndrome Yes Yes Yes No Yes Yes Treatment of Helicobacter pylori Dual therapy Yes No Yes No No No Triple therapy Yes Yes Yes No No Yes ^ a b c "[99] Comparative effectiveness of proton pump inhibitors". Therapeutics Letter. 28 June 2016. ISSN 2369-8691. Retrieved 14 July 2016. ^ Fossmark R, Martinsen TC, Waldum H (21 October 2019). "Adverse Effects of Proton Pump Inhibitors-Evidence and Plausibility". 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Retrieved 26 January 2024. ^ a b World Health Organization (2019). World Health Organization model list of essential medicines: 21st list 2019. Geneva: World Health Organization. hdl:10665/325771. WHO/MVP/EMP/IAU/2019.06. License: CC BY-NC-SA 3.0 IGO. ^ a b World Health Organization (2021). World Health Organization model list of essential medicines: 22nd list (2021). Geneva: World Health Organization. hdl:10665/345533. WHO/MHP/HPS/EML/2021.02. ^ Zajac P, Holbrook A, Super ME, Vogt M (March–April 2013). "An overview: Current clinical guidelines for the evaluation, diagnosis, treatment, and management of dyspepsia". Osteopathic Family Physician. 5 (2): 79–85. doi:10.1016/j.osfp.2012.10.005. ^ Wang WH, Huang JQ, Zheng GF, Xia HH, Wong WM, Liu XG, et al. (February 2007). "Effects of proton-pump inhibitors on functional dyspepsia: a meta-analysis of randomized placebo-controlled trials". Clinical Gastroenterology and Hepatology. 5 (2): 178–85, quiz 140. doi:10.1016/j.cgh.2006.09.012. 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PMID 24221456. ^ Lucendo AJ, Arias Á, Molina-Infante J (January 2016). "Efficacy of Proton Pump Inhibitor Drugs for Inducing Clinical and Histologic Remission in Patients With Symptomatic Esophageal Eosinophilia: A Systematic Review and Meta-Analysis". Clinical Gastroenterology and Hepatology. 14 (1): 13–22.e1. doi:10.1016/j.cgh.2015.07.041. PMID 26247167. ^ Alhazzani W, Alenezi F, Jaeschke RZ, Moayyedi P, Cook DJ (March 2013). "Proton pump inhibitors versus histamine 2 receptor antagonists for stress ulcer prophylaxis in critically ill patients: a systematic review and meta-analysis". Critical Care Medicine. 41 (3): 693–705. doi:10.1097/CCM.0b013e3182758734. PMID 23318494. S2CID 8138473. ^ Epelboym I, Mazeh H (January 2014). "Zollinger-Ellison syndrome: classical considerations and current controversies". The Oncologist. 19 (1): 44–50. doi:10.1634/theoncologist.2013-0369. PMC 3903066. PMID 24319020. ^ "Five Things Physicians and Patients Should Question". 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ISBN 0-9757919-2-3[page needed] ^ Clark DW, Strandell J (June 2006). "Myopathy including polymyositis: a likely class adverse effect of proton pump inhibitors?". European Journal of Clinical Pharmacology. 62 (6): 473–9. doi:10.1007/s00228-006-0131-1. PMID 16758264. S2CID 33139851. ^ Hendrix I, Page AT, Korhonen MJ, Bell JS, Tan EC, Visvanathan R, et al. (September 2019). "Patterns of High-Dose and Long-Term Proton Pump Inhibitor Use: A Cross-Sectional Study in Six South Australian Residential Aged Care Services". Drugs - Real World Outcomes. 6 (3): 105–113. doi:10.1007/s40801-019-0157-1. PMC 6702506. PMID 31264165. ^ a b c d e f g Corleto VD, Festa S, Di Giulio E, Annibale B (February 2014). "Proton pump inhibitor therapy and potential long-term harm". Current Opinion in Endocrinology, Diabetes, and Obesity. 21 (1): 3–8. doi:10.1097/MED.0000000000000031. PMID 24310148. S2CID 205791135. ^ a b c d e Freedberg DE, Kim LS, Yang YX (March 2017). "The Risks and Benefits of Long-term Use of Proton Pump Inhibitors: Expert Review and Best Practice Advice From the American Gastroenterological Association". Gastroenterology. 152 (4): 706–715. doi:10.1053/j.gastro.2017.01.031. PMID 28257716. Conclusions:Baseline differences between PPI users and non-users make it challenging to study potential PPI adverse effects retrospectively. Despite a large number of studies, the overall quality of evidence for PPI adverse effects is low to very low. When PPIs are appropriately prescribed, their benefits are likely to outweigh their risks. When PPIs are inappropriately prescribed, modest risks become important because there is no potential benefit. There is currently insufficient evidence to recommend specific strategies for mitigating PPI adverse effects. ^ a b c d Vaezi MF, Yang YX, Howden CW (July 2017). "Complications of Proton Pump Inhibitor Therapy". Gastroenterology. 153 (1): 35–48. doi:10.1053/j.gastro.2017.04.047. PMID 28528705. In turn, this has caused unnecessary concern among patients and prescribers. The benefits of PPI therapy for appropriate indications need to be considered, along with the likelihood of the proposed risks. Patients with a proven indication for a PPI should continue to receive it in the lowest effective dose. PPI dose escalation and continued chronic therapy in those unresponsive to initial empiric therapy is discouraged. ^ Yang M, He Q, Gao F, Nirantharakumar K, Veenith T, Qin X, et al. (December 2021). "Regular use of proton-pump inhibitors and risk of stroke: a population-based cohort study and meta-analysis of randomized-controlled trials". BMC Medicine. 19 (1): 316. doi:10.1186/s12916-021-02180-5. PMC 8641218. PMID 34856983. ^ Park CH, Kim EH, Roh YH, Kim HY, Lee SK (2014). "The association between the use of proton pump inhibitors and the risk of hypomagnesemia: a systematic review and meta-analysis". PLOS ONE. 9 (11): e112558. 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Gastric acid is important for breakdown of food and release of micronutrients, and some studies have shown possibilities for interference with absorption of iron, calcium, magnesium, and vitamin B12.Ito T, Jensen RT (December 2010). "Association of long-term proton pump inhibitor therapy with bone fractures and effects on absorption of calcium, vitamin B12, iron, and magnesium". Current Gastroenterology Reports. 12 (6): 448–57. doi:10.1007/s11894-010-0141-0. PMC 2974811. PMID 20882439. ^ Fujimori S (June 2015). "What are the effects of proton pump inhibitors on the small intestine?". World Journal of Gastroenterology. 21 (22): 6817–9. doi:10.3748/wjg.v21.i22.6817. PMC 4462721. PMID 26078557. Generally, proton-pump inhibitors (PPIs) have great benefit for patients with acid related disease with less frequently occurring side effects. According to a recent report, PPIs provoke dysbiosis of the small intestinal bacterial flora, exacerbating nonsteroidal anti-inflammatory drug-induced small intestinal injury. Several meta-analyses and systematic reviews have reported that patients treated with PPIs, as well as post-gastrectomy patients, have a higher frequency of small intestinal bacterial overgrowth (SIBO) compared to patients who lack the aforementioned conditions. Furthermore, there is insufficient evidence that these conditions induce Clostridioides difficile infection. At this time, PPI-induced dysbiosis is considered a type of SIBO. ^ Erdogan A, Rao SS (April 2015). "Small intestinal fungal overgrowth". Current Gastroenterology Reports. 17 (4): 16. doi:10.1007/s11894-015-0436-2. PMID 25786900. S2CID 3098136. Small intestinal fungal overgrowth (SIFO) is characterized by the presence of excessive number of fungal organisms in the small intestine associated with gastrointestinal (GI) symptoms. Candidiasis is known to cause GI symptoms particularly in immunocompromised patients or those receiving steroids or antibiotics. However, only recently, there is emerging literature that an overgrowth of fungus in the small intestine of non-immunocompromised subjects may cause unexplained GI symptoms. Two recent studies showed that 26% (24/94) and 25.3% (38/150) of a series of patients with unexplained GI symptoms had SIFO. The most common symptoms observed in these patients were belching, bloating, indigestion, nausea, diarrhea, and gas. The underlying mechanism(s) that predisposes to SIFO is unclear but small intestinal dysmotility and use of proton pump inhibitors has been implicated. However, further studies are needed; both to confirm these observations and to examine the clinical relevance of fungal overgrowth, both in healthy subjects and in patients with otherwise unexplained GI symptoms. ^ Li B, Zhang B, Ma JW, Li P, Li L, Song YM, et al. (June 2010). 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عند البالغين قد يعاني البالغون المصابون بالتهاب المعدة والأمعاء الحاد من أعراض أكثر خطورة، خاصة إذا كانوا يعانون من حالات صحية كامنة. من الضروري مراقبة علامات الجفاف، مثل جفاف الفم، والعطش [illegible] التهاب المعدة والأمعاء الحاد [illegible] ترطيب [illegible] الراحة: احصل على قسط وافر من الراحة لمساعدة جسمك على التعافي. الترطيب: شرب السوائل بانتظام لتبقى رطبًا. النظام الغذائي: ابدأ ب اتباع نظام غذائي متوازن، بما في ذلك الأطعمة مثل الموز والأرز وصلصة التفاح والخبز المحمص (نظام [illegible] التهاب المعدة والأمعاء الحاد مع الجفاف المعتدل ينطوي [illegible] وفي الختام التهاب المعدة والأمعاء الحاد [illegible] يمكن أن يسبب التهاب المعدة والأمعاء الحاد الجفاف الشديد، واختلال توازن الكهارل، وفي الحالات الشديدة، قد يؤدي إلى دخول المستشفى إذا لم يتم علاجه بشكل صحيح [illegible] يصاب الأطفال [illegible]