



實證醫學競賽

組別：第一組

時間：Feb 16, 2017

地點：國防醫學院三樓31教室



三軍總醫院
Tri-Service General Hospital

Hello! 我們的團隊



謝宗霖藥師



張杏怡藥師



王秉翔藥師



臨床情境 Clinical Scenario

77歲的林奶奶，去年因急性冠心病住院接受心導管介入，放入兩個塗藥支架，術後開始使用雙重血小板藥品治療(Aspirin、clopidogrel)一年多

過去病史:風濕關節炎、胃潰瘍



Background question

- 1.有胃潰瘍病史，使用質子幫浦阻斷劑預防腸胃道出血，質子幫浦阻斷劑會增加骨質疏鬆的風險，甚至骨折，請問是真的嗎？增加多少風險？
- 2. .使用雙重血小板藥品治療(Aspirin、clopidogrel)一年多，還需要繼續吃下去嗎？好處大於風險嗎？



Coronary artery disease (CAD)

DynaMed UpToDate®
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- **Atherosclerotic narrowing of coronary arteries** that is often asymptomatic early in the course of the disease but with progressive thickening or plaque rupture of the arterial wall may lead to **stable or unstable angina** and/or **myocardial infarction**



急性冠心症病人的藥物治療

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- :(1)抗心肌缺氧藥物，
 - Beta-blocker、硝酸鹽類及鈣離子阻斷劑
- (2)抗凝血酵素藥物
 - heparin 或 low molecular weight heparin 等。
- (3)抗血小板藥物:阿斯匹靈(aspirin)、clopidogrel(保栓通)和 ticagrelor(百無凝)



Proton pump inhibitors

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- Insoluble calcium, such as calcium carbonate, requires an acid environment for optimal absorption.
- As a result, drugs that reduce stomach acid secretion may reduce calcium absorption.

臨床問題

PICO-1

PICO-2

問題
Ask

P

I

C


O

77歲女性、急性冠心症接受心導管手術、放置支架，有胃潰瘍、風濕性關節炎病史。	77 year-old women Acute coronary disease admitted with cardioac catheterization (two stents)and then use aspirin, clopidogrel for one year.History of RA and Gastric ulcer	77歲女性、急性冠心症接受心導管手術、放置支架，有胃潰瘍、風濕性關節炎病史	77 year-old women Acute coronary disease admitted with cardioac catheterization and stents. History of RA and Gastric ulcer
質子幫浦阻斷劑	Proton pump inhibitor	雙重抗血小板藥品	Aspirin, clopidogrel over one year
安慰劑	Placebo, other treatment	安慰劑	Placebo, other treatment
骨質疏鬆的發生風險	Risk of Osteoporosis and fractures	冠心症的在發生率	Recurrence of acute coronary disease

這是一個 治療型/預防型 診斷型 預後型 傷害型問題

臨床問題

我們選擇第一個**PICO**：

Key words	Key words(English)	 Synonym
77歲女性、急性冠心症接受心導管手術、放置支架，有胃潰瘍、風濕性關節炎病史。	77 year-old women Acute coronary disease admitted with cardiac catheterization (two stents)and then use aspirin, clopidogrel for one year. History of RA and Gastric ulcer	Acute coronary disease Cardioac catheterization aspirin, clopidogrel RA、Gastric ulcer
質子幫浦阻斷劑	Proton pump inhibitor	Proton pump inhibitor
安慰劑	Placebo, other treatment	Placebo
骨質疏鬆、骨折的發生風	Risk of osteoporosis and fractures	Osteoporosis、fractures

這是一個 治療型 / 預防型 診斷型 預後型 傷害型問題

P

I

C

O

6S EBM Resources



資料搜尋 Acquire

以「P & I」搜尋，再依結果調整
整納入之關鍵字與同義字

與臨床場景相符

Systemic review(SR)

相符!
↓

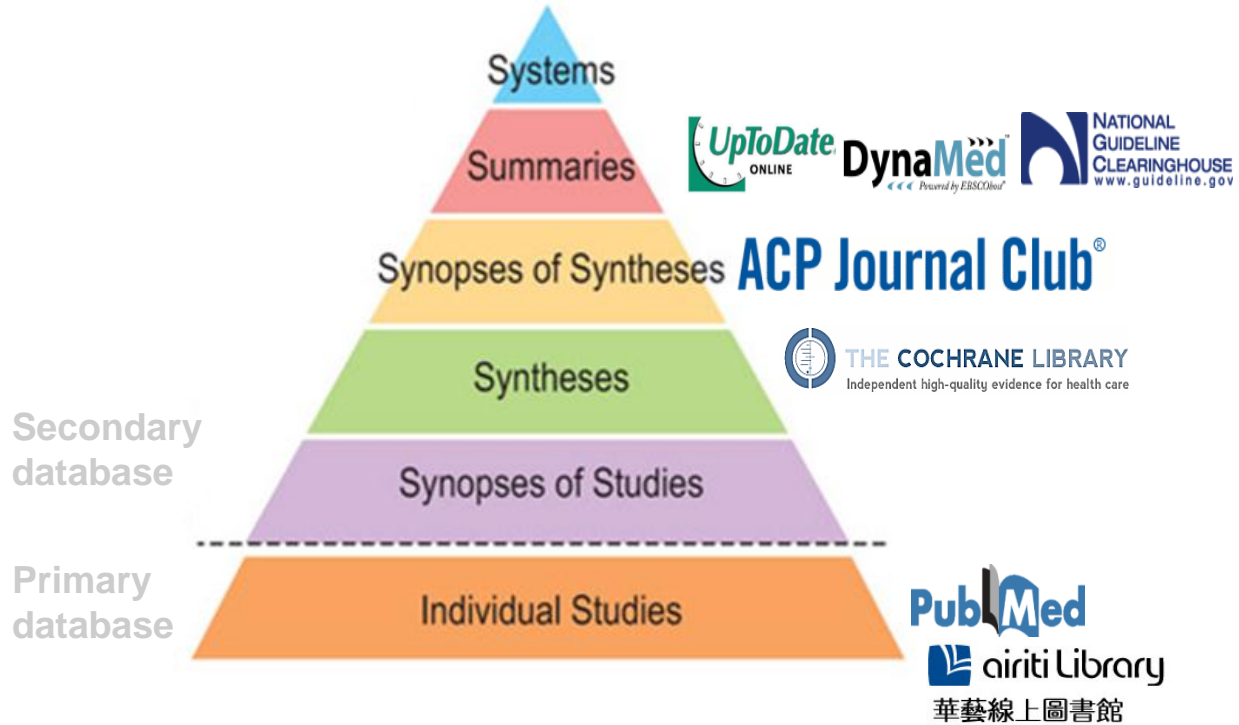
不相符!
↓

Randomized controlled trial (RCT)

相符!
↓

不相符!
↓

Controlled trial



Secondary database: Cochrane


Advanced search

















Keyword

long term proton pump inhibitors ,
Osteoporosis

Search Search Manager Medical Terms (MeSH)

To search an exact word(s) use quotation marks, e.g. "hospital" finds hospital; hospital (no quotation marks) finds hospital and hospitals; pay finds paid, pays, paying, payed)

[Add to top](#) 

  	#1	long term proton pump inhibitors		252
  	#2	Osteoporosis		7349
 	#3	long term proton pump inhibitors Osteoporosis:ti,ab,kw (Word variations have been searched)		2
  	#4		 	N/A

1. 使用Cochrane Library search Manager 搜尋
加入布林邏輯 AND 作搜尋連結
2. Search limit: 未限制年份

搜索: 2篇 Cochrane Review

2/1010379篇

Secondary database: Cochrane

Search Manager	Medical Terms (MeSH)	Browse
<input type="text" value="long term proton pump inhibitors Osteoporosis"/>		<input type="button" value="Go"/> <input type="button" value="Save"/>
<p>(Word variations have been searched)</p>		Add to Search Manager
<p>Cochrane Central Register of Controlled Trials : Issue 1 of 12, January 2017</p>		
<p>There are 2 results from 1010379 records for your search on 'long term proton pump inhibitors Osteoporosis in Title, Abstract, Keywords in Trials'</p>		
		<p>Sort by <input type="text" value="Relevance: high to low"/></p>
<p>Select all Export all Export selected</p>		
<input type="checkbox"/>	<p>The therapeutic effectiveness of the coadministration of weekly risedronate and proton pump inhibitor in osteoporosis treatment. Tanaka M , Itoh S , Yoshioka T and Yamashita K Journal of osteoporosis, 2014 Publication Year: 2014</p>	
<input type="checkbox"/>	<p>The efficacy of Neiguan acupuncture in patients with GERD: A randomized, controlled, single-blinded trial. Shen M-L and Hsu W-T Journal of Gastroenterology and Hepatology (Australia), 2015, 30, 63 Publication Year: 2015</p>	

搜索: 2篇 Cochrane Review

Primary database: PubMed

Keyword

Osteoporosis, proton pump inhibitors, stomach ulcer

NCBI Resources How To Sign in to NCBI

PubMed Home More Resources Help

PubMed Advanced Search Builder

YouTube Tutorial

((osteoporosis) AND stomach ulcer) AND proton pump inhibitor

[Edit](#) [Clear](#)

Builder

All Fields	osteoporosis	Show index list
AND All Fields	stomach ulcer	Show index list
AND All Fields	proton pump inhibitor	Show index list
AND All Fields		Show index list

[Search](#) or [Add to history](#)

www.themegallery.com

使用PubMed Advanced Search Builder

使用PubMed Advanced Search Builder以及Limit功能

PubMed.gov PubMed ((osteoporosis) AND stomach ulcer) AND proton pump inhibitor Search

US National Library of Medicine National Institutes of Health

Article types: Clinical Trial, Review, Customize ...

Text availability: clear

Abstract: Free full text, Full text

PubMed Commons: Reader comments, Trending articles

Publication dates: clear, 5 years, 10 years, Custom range...

Species: Humans, Other Animals

Format: Summary Sort by: Most Recent

Search results

Items: 2

Limit

Filters activated: Abstract, published in the last 10 years. [Clear all](#) to show 5 items

- Long-term safety concerns with proton pump inhibitors. Ali T, Roberts DN, Tierney WM. Am J Med. 2009 Oct;122(10):896-903. doi: 10.1016/j.amjmed.2009.04.014. Review. PMID: 19786155 [Similar articles](#)
- Increase in vertebral fracture risk in postmenopausal women using omeprazole. Roux C, Briot K, Gossec L, Kolta S, Blenk T, Felsenberg D, Reid DM, Eastell R, Glüer CC. Calcif Tissue Int. 2009 Jan;84(1):13-9. doi: 10.1007/s00223-008-9188-4. PMID: 19023510 [Similar articles](#)

Send to Filters: Manage Filters

Find related data Database: Select Find items

Search details ((("osteoporosis, postmenopausal" [MeSH Terms] OR ("osteoporosis"[All Fields] AND "postmenopausal"[All Fields]) OR "postmenopausal osteoporosis"[All Fields] OR

Recent Activity Turn Off Clear

with proton pump PubMed

stomach ulcer) AND PubMed

(2) PubMed

risk in PubMed

postmenopausal women using omepr PubMed

(((Osteoporosis) AND Postmenopausal Women) AND Proton pump inhibi... (PubMed

((coronary disease) AND stomach ulcer)

Filters activated: Abstract, published in the last 10 years. [Clear all](#) to show 5 items.

Primary database: PubMed

Keyword

Proton pump inhibitor + fractures

The screenshot shows the PubMed search interface. At the top, the search bar contains the keyword 'Proton pump inhibitor + fractures'. Below the search bar, there are filters for 'Article types' (Meta-Analysis, Systematic Reviews) and 'Text availability' (Free full text). The search results section displays two items, each with a title, author, journal, and PMID. A blue callout box is overlaid on the results, providing instructions on how to use MeSH terms and Boolean operators for better search results.

Search results
Items: 6

1 Filters activated: Meta-Analysis, Systematic Reviews, Free full text. [Clear all](#) to show 215 items.

[The Indications, Applications, and Risks of Proton Pump Inhibitors.](#)

1. Mössner J.
Dtsch Arztebl Int. 2016 Jul 11;113(27-28):477-83. doi: 10.3238/arztebl.2016.0477.
PMID: 27476707 **Free PMC Article**
[Similar articles](#)

[Proton-pump Inhibitors and the Risk of Fractures: A Systematic Review and Meta-Analysis.](#)

2. [Sociedad Española de Gastroenterología y Hepatología.](#)
de la Cobarros B, Rodríguez A, Ortega Alonso A, Rodríguez de Santiago E, Rodríguez-Téllez M, Vera Mendoza MI, Aguilera Castro L, Álvarez Sánchez Á, Andrade Bellido RJ, Bao Pérez F, Castro Fernández M, Giganto Tomé F.
Rev Esp Enferm Dig. 2016 Apr;108(4):207-24. doi: 10.17235/reed.2016.4232/2016.
PMID: 27034082 **Free Article**
[Similar articles](#)

1. 將關鍵字輸入透過**MeSH**找出最適當之**Medical Terms**
2. 利用布林邏輯 "**AND**" "**OR**" "**NOT**"等語法以免遺漏文獻搜尋分類
3. 使用**Clinical Queries**檢索分類

Primary database: PubMed

PubMed.gov
US National Library of Medicine National Institutes of Health

PubMed [Create RSS](#) [Create alert](#) [Advanced](#)

Article types Format: Summary Sort by: Most Recent [Send to](#)

- Meta-Analysis**
- Randomized Controlled Trial
- Systematic Reviews**
- Customize ...

Text availability

- Abstract
- Free full text**
- Full text

PubMed Commons

- Reader comments
- Trending articles

Publication dates

- 5 years
- 10 years
- Custom range...

Species

- Humans
- Other Animals

Search results

Items: 6

1 Filters activated: Meta-Analysis, Systematic Reviews, Free full text. [Clear all](#) to show 215 items.

- [The Indications, Applications, and Risks of Proton Pump Inhibitors.](#)

- Mössner J.
Dtsch Arztebl Int. 2016 Jul 11;113(27-28):477-83. doi: 10.3238/arztebl.2016.0477.
PMID: 27476707 **Free PMC Article**
[Similar articles](#)
- [Proton-pump inhibitors adverse effects: a review of the evidence and position statement by the Sociedad Española de Patología Digestiva](#)

de la Coba Ortiz C, A
Rodríguez A, Ortega
Aguilera Castro L, Ál
Giganto Tomé F.
Rev Esp Enferm Dig. 2016 Apr;108(4):207-24. doi: 10.17235/reed.2016.4232/2016.
PMID: 27034082 **Free Article**
[Similar articles](#)

使用**Filter**功能以提升篩選效率
以有**全文**可評讀，**Meta-analysis**

Primary database: 華藝線上圖書館


airiti Library 華藝線上圖書館
Language ▾

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0

碩博士論文
5

電子書
0

依下方條件來精確結果

來源資料庫

CEPS中文電子期刊 (3)

學科分類

☑ 醫藥衛生 (原: 醫學與生命科學) (3)

年代

2015年以後 (1)
2013年以後 (1)
2010 (1) ▼ 展開

出版品名稱

Journal of Medical Sciences (1)
內科學誌 (1)
台北市醫師公會會刊 (1)

指標期刊

地區

台灣 (3)

查詢 (質子幫浦阻斷劑) = 所有欄位

每頁 10 筆

共 3 筆 , 1 - 3 筆

共 1 頁 ◀ 1 ▶

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相關程度最高

☐ 1 **質子幫浦阻斷劑或乙型組織胺受體拮抗劑是否影響體重**
張恩書 ; 陳志彥 ;
台北市醫師公會會刊 60卷5期 (2016/05) , 38-41

[加入追蹤](#) [全文下載](#)

☐ 2 **A One-Week Low-Dose New Triple Therapy for Treatment of Duodenal Ulcer with Helicobacter Pylori Infection**
黃文豪(Wen-Hao Huang) ; 何慶生(Ai-Sheng Ho) ; 徐榮源(Rong-Yaun Shyu) ; 李瑞成(Shui-Cheng Lee) ; 李美璇(May Meel-Shyuan Lee) ; 許重得(Chung-Te Hsu) ;
Journal of Medical Sciences 18卷4期 (1998/02) , 222-230
CLO試驗 ; 碳-13尿素酶呼吸試驗 ; 十二指腸潰瘍 ; 幽門螺旋桿菌 ; 質子幫浦阻斷劑 ; CLO test ;
13C-urea breath test ; Duodenal ulcer ; Helicobacter pylori ; Proton pump inhibitor (PPI)
預覽摘要 [加入追蹤](#) [全文下載](#)

☐ 3 **幽門螺旋桿菌除菌治療之新進展**
林俊谷(Chiun-Ku Lin) ; 許秉毅(Ping-I Hsu) ; 曾嘸基(Hui-Hwa Tseng) ;

Keyword

質子幫浦阻斷劑

搜索結果

Cochrane
(2)

Pubmed
(6)

華藝
(3)

Exclusion criteria-1

- 有全文可供閱讀
- 與題目PICO不相符

符合場景

Cochrane
(2)

Pubmed
(1)

華藝
(0)

Exclusion criteria-2

- 最佳證據等級
- 最佳實驗設計
- 與PICO最相符

Cochrane
(0)

Pubmed
(1)

華藝
(0)

Pubmed
(1)Meta-
analysis

NIH Public Access

Author Manuscript

Am J Med. Author manuscript; available in PMC 2012 June 1.

Published in final edited form as:

Am J Med. 2011 June ; 124(6): 519–526. doi:10.1016/j.amjmed.2011.01.007.

Proton pump inhibitors and risk of fractures: a meta-analysis of 11 international studies

Elaine W. Yu, MD¹, Scott R. Bauer, BS², Paul A. Bain, PhD³, and Douglas C. Bauer, MD⁴

Elaine W. Yu: ewyu@partners.org; Scott R. Bauer: sbauer@hsph.harvard.edu; Paul A. Bain: pbain@hms.harvard.edu; Douglas C. Bauer: dbauer@psg-ucsf.org

這篇文獻「納入的理由」

👍 最符合臨床問題

👍 發表年份較新

👍 最佳的研究設計

👍 有全文可供評讀

Critical appraising the evidence for its validity and importance

CEBM



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Critical Appraisal tools

[Home](#) > [EBM Resources](#) > [Tools](#) > [Critically Appraising the Evidence](#) > Critical Appraisal tools

Critical appraisal is the systematic evaluation of clinical research papers in order to establish:

1. Does this study address a [clearly focused question](#)?
2. Did the study use valid methods to address this question?
3. Are the valid results of this study important?
4. Are these valid, important results applicable to my patient or population?

If the answer to any of these questions is "no", you can save yourself the trouble of reading the rest of it.

This section contains useful tools and downloads for the critical appraisal of different types of medical evidence. Example appraisal sheets are provided together with several helpful examples.



Critical Appraisal Worksheets

English

- [Systematic Review](#) Critical Appraisal Sheet
- [Diagnosis](#) Critical Appraisal Sheet
- [Prognosis](#) Critical Appraisal Sheet
- [Therapy / RCT](#) Critical Appraisal Sheet



YES



NO



UNCLEAR

What question (PICO) did the systematic review address?

本系統性回顧想回答什麼問題？

Abstract

Background—Concerns have been raised about the risk of fractures with acid-suppressive medications, such as proton pump inhibitors (PPIs) and histamine₂-receptor antagonists (H2RAs).

Methods—In this meta-analysis, we evaluated the association between PPI or H2RA use and fractures. We performed a systematic search of published literature (1970 to October 10, 2010) in MEDLINE, EMBASE, and other sources. Ten publications reporting 11 studies were considered eligible for analysis.

Results—All studies were observational case-control or cohort studies and primarily evaluated older adults. The summary effect estimate for risk of hip fracture was modestly increased among individuals taking PPIs (RR 1.30, 95% CI 1.19–1.43). There was also an increase in spine (RR 1.56, 95% CI 1.31–1.85) and any-site fractures (RR 1.16, 95% CI 1.04–1.30) among PPI users. These findings were similar in both men and women and after stratification by duration of use. In contrast, H2RA use was not significantly associated with increased risk of hip fracture (RR 1.0, 95% CI 0.94–1.30).

Conclusions—In this meta-analysis of observational studies, PPIs modestly increased the risk of hip, spine, and any-site fractures, whereas H2RAs were not associated with fracture risk. The possibility of residual confounding cannot be excluded. Further skeletal evaluation should be considered for patients who are taking PPIs and are also at risk for osteoporotic fracture.

Keywords

Proton pump inhibitor; fracture; osteoporosis; bone mineral density; H2-receptor antagonists; calcium absorption

利用meta-analysis 探討PPI及H2 blocker的使用會不會造成骨折的風險

F - Is it unlikely that important, relevant studies were missed?

有沒有遺漏重要的文獻？

YES

NO

UNCLEAR

Search strategy

PubMed/MEDLINE (NCBI), EMBASE (Elsevier), Web of Science (ISI Web of Knowledge), and BIOSIS Previews (ISI Web of Knowledge) were searched from 1970 through October 10, 2010 using terms for fractures and for PPIs or H2RAs. The search strategy (see Supplemental Table 1) was carried out by a librarian (PB). No language limits or methodology filters were applied. Programs from the annual meetings of the Endocrine Society (1996–2009) and the American Association of Clinical Endocrinologists (2002–2010) were hand-searched. Programs from the annual meetings of the American Society for Bone and Mineral Research, the American Gastroenterological Association, and the American College of Gastroenterology were included in the material searched through BIOSIS Previews. Reference lists of reviews identified in the search were scanned for candidate studies.

● YES

● NO

● UNCLEAR

A - Were the criteria used to select articles for inclusion appropriate?

選擇文獻的準則是否適當?

Abstract

Background—Concerns have been raised about the risk of fractures with acid-suppressive medications, such as proton pump inhibitors (PPIs) and histamine₂-receptor antagonists (H2RAs).

Methods—In this meta-analysis, we evaluated the association between PPI or H2RA use and fractures. We performed a systematic search of published literature (1970 to October 10, 2010) in MEDLINE, EMBASE, and other sources. Ten publications reporting 11 studies were considered eligible for analysis.

Corley, 2010 ¹²	Case control	Kaiser adults age>18, 65% women (164223)	80% older than 50	Rx database, cumulative use >2 years	hip (33752)	1.30 (1.21–1.3)
Pouwels, 2010 ¹⁸	Case control	Dutch adults, 73% women (33104)	75	Rx database, current use in past 30 days	hip (6763)	1.20 (1.04–1.4)
Chiu, 2010 ²⁰	Case control	Taiwanese adults age>50, 58% women (2482)	75	Rx database, any use since 1996	hip (1241)	1.69 (1.35–2.1)

此篇文章背景是探討使用PPI以及H2 blocker導致骨折的風險上升比較，其中也有收入有關於台灣研究的文章

● YES

● NO

● UNCLEAR

A - Were the criteria used to select articles for inclusion appropriate?

選擇文獻的準則是否適當?

The screenshot shows the Wiley Online Library interface for the article "Use of proton pump inhibitors increased the risk of hip fracture: a population-based case-control study" by Hui-Fen Chiu, Ya-Wen Huang, Chih-Ching Chang, and Chun-Yuh Yang. The article is published in *Pharmacoepidemiology and Drug Safety*, Volume 19, Issue 11, November 2010, pages 1131-1136. The page includes a PDF icon, an information icon, and a citation score of 17 articles. The abstract is partially visible, starting with "To investigate whether the use of proton pump inhibitor (PPIs) was associated with an increased risk of hip fracture."

收入有關於台灣文章，
結論是使用PPI的時間
越長越導致髖骨骨折風
險越大

A - Were the included studies sufficiently valid for the type of question asked?

納入的文章對於問題是否提供足夠的效度?

● YES

● NO

● UNCLEAR

Abstract

Background—Concerns have been raised about the risk of fractures with acid-suppressive medications, such as proton pump inhibitors (PPIs) and histamine₂-receptor antagonists (H2RAs).

Methods—In this meta-analysis, we evaluated the association between PPI or H2RA use and fractures. We performed a systematic search of published literature (1970 to October 10, 2010) in MEDLINE, EMBASE, and other sources. Ten publications reporting 11 studies were considered eligible for analysis.

此篇文章資料來源有 Published literature, Medline, Embase, 等已出刊的文章或是大型資料庫因此效度是足夠的

YES NO UNCLEAR

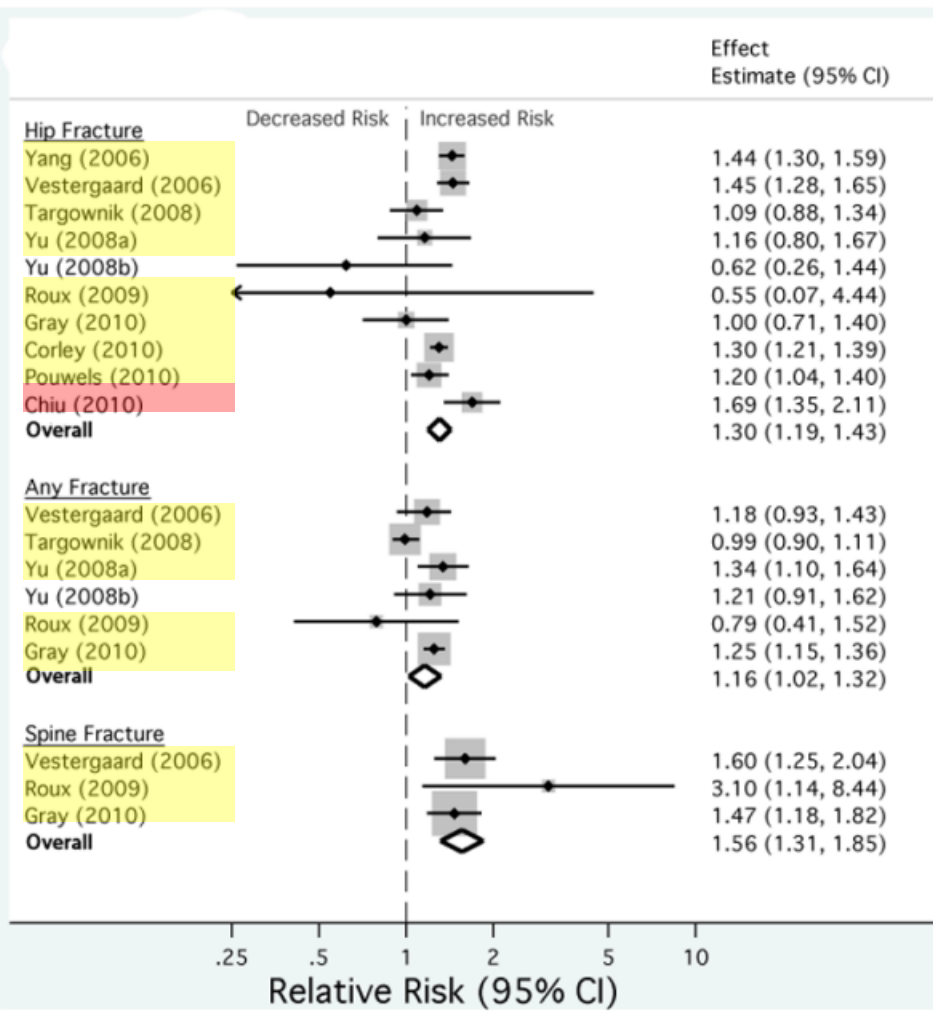
T - Were the results similar from study to study?

文章的結果是否相似?

PPIs and fracture

The risk of hip fracture was modestly increased among individuals taking PPIs (RR 1.30, 95% CI 1.19–1.43; Figure 2). There was also an increase in spine (RR 1.56, 95% CI 1.31–1.85) and any-site fractures (RR 1.16, 95% CI 1.02–1.32) among PPI users. Evidence of heterogeneity was present among the hip fracture studies (I^2 58%) and any-site fracture studies (I^2 67%), but there was no evidence of heterogeneity among the findings of the spine fractures (I^2 6%). There was no evidence of publication bias (Begg's test $p=0.22$).

針對髖骨骨折的文章 I^2 為58%，表示中度異質性；
針對脊椎骨折的文章 I^2 為67%，表示中度異質性；
針對任何部位骨折的文章 I^2 為6%，表示低度異質性；
且由Begg's test顯示($p=0.22$)，沒有出版偏誤(publication bias)問題。



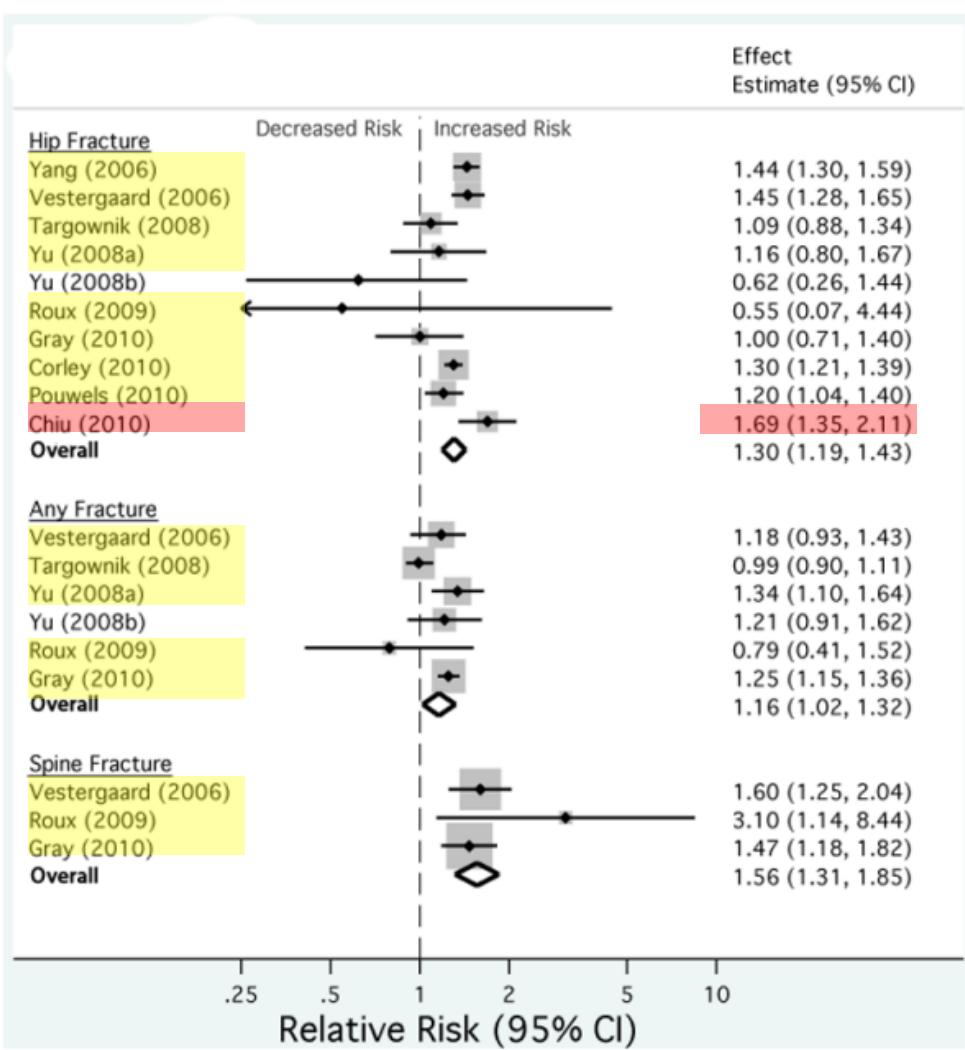
How are the results presented?

文章的結果如何呈現？

PPIs and fracture

The risk of hip fracture was modestly increased among individuals taking PPIs (RR 1.30, 95% CI 1.19–1.43; Figure 2). There was also an increase in spine (RR 1.56, 95% CI 1.31–1.85) and any-site fractures (RR 1.16, 95% CI 1.02–1.32) among PPI users. Evidence of

Fracture	RR	CI
Hip	1.30	1.19-1.43
Spine	1.56	1.31-1.85
Any-site	1.16	1.02-1.32
Chiu, 2010 Taiwanese adults age>50, 58% women (n=2482)	1.69 (Hip fracture)	1.35-2.11



Increased Risk of Osteoporosis in Patients With Peptic Ulcer Disease : A Nationwide Population-Based Study (Cohort 2016)

由健保百萬歸人檔中分析並追蹤分為case組27132人，control組27132人，並可由人口學中發現有骨質疏鬆的女性比男性多，且年齡>50歲以上者也居多，條件與本題相似。

從2X2列連表中可知，如有胃潰瘍且同時使用PPI者，其風險比值比有胃潰瘍但無使用PPI者多17%。

TABLE 2. Incidence and Hazard Ratios of Osteoporosis by Demographic Characteristics and Different Follow-Up Duration Among Patients With or Without Peptic Ulcer Disease

Variables	Patients With Peptic Ulcer			Patients Without Peptic Ulcer			IRR (95% CI) [†]	Adjusted HR [‡] (95% CI)	P [§]
	Osteoporosis	PY	Rate [*]	Osteoporosis	PY	Rate [*]			
All	2538	181438.53	13.99	2259	389478.48	5.80	2.41 (2.28–2.55) [¶]	1.85 (1.73–1.98) [¶]	
Gender									
Men	879	121559.37	7.23	685	259629.28	2.64	2.74 (2.48–3.03) [¶]	2.28 (2.03–2.57) [¶]	P < 0.001
Women	1659	59879.17	27.71	1574	129849.20	12.12	2.29 (2.13–2.45) [¶]	1.69 (1.56–1.83) [¶]	
Stratify age									
18–49	330	86477.03	3.82	63	164755.30	0.38	9.98 (7.62–13.07) [¶]	6.15 (4.68–8.09) [¶]	
≥50	2208	94961.51	23.25	2196	224723.18	9.77	2.38 (2.24–2.53) [¶]	1.71 (1.60–1.83) [¶]	
Follow-up time, y									
1	458	25767.59	17.77	7	27126.94	0.26	80.36 (35.91–179.81) [¶]	63.44 (28.19–142.74) [¶]	
3	1104	69844.63	15.81	177	81257.00	2.18	7.30 (6.22–8.56) [¶]	5.50 (4.65–6.52) [¶]	
5	1655	105595.74	15.67	849	134446.71	6.31	2.48 (2.29–2.70) [¶]	2.02 (1.85–2.22) [¶]	

TABLE 4. Cox Proportional Hazard Regression Analysis for Interaction of Proton-Pump-Inhibitors Use and Peptic Ulcer Disease on the Risk of Osteoporosis

Variables		N	Osteoporosis	Adjusted HR (95% CI)	Adjusted HR (95% CI)	P [†]
Peptic Ulcer	Proton-Pump-Inhibitors Use					
No	No	26,643	2169	1.00 (Reference)		P < 0.001
No	Yes	489	90	1.48 (1.19–1.82) [‡]		
Yes	No	24,885	2290	1.88 (1.75–2.01) [‡]	1.00 (Reference)	
Yes	Yes	2247	248	2.20 (1.91–2.52) [‡]	1.17 (1.03–1.34) [‡]	

Increase in vertebral fracture risk in postmenopausal women using omeprazole

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Format: Abstract

[Calcif Tissue Int](#). 2009 Jan;84(1):13-9. doi: 10.1007/s00223-008-9188-4. Epub 2008 Nov 21.

Increase in vertebral fracture risk in postmenopausal women using omeprazole.

Roux C¹, Briot K, Gossec L, Kolta S, Blenk T, Felsenberg D, Reid DM, Eastell R, Glüer CC.

Author information

Abstract

Proton pump inhibitors are taken by millions of patients for prevention and treatment of gastroesophageal disease. Previous studies have suggested that use of omeprazole is associated with an increased risk of hip fractures. The aim of this study was to assess the risk of vertebral fractures in postmenopausal women using omeprazole. We studied 1,211 postmenopausal women enrolled in the Osteoporosis and Ultrasound Study from the general population. Information on omeprazole use and vertebral fractures including prevalent fractures and bone mineral density was obtained at baseline. Vertebral fractures were identified on X-rays obtained at baseline and at the end of the 6-year follow-up and analyzed centrally. At baseline, 5% of this population was using omeprazole. Age-adjusted rates for vertebral fractures were 1.89 and 0.60 for 100 person-years for omeprazole users and nonusers, respectively ($P = 0.009$). In the multivariate analysis, omeprazole use was a significant and independent predictor of vertebral fractures (RR = 3.50, 95% CI 1.14-8.44). The other predictors were age higher than 65 years (RR = 2.34, 95% CI 1.14-4.84), prevalent vertebral fractures (RR = 3.62, 95% CI 1.63-8.08), and lumbar spine T score ≤ -2.5 (RR = 2.38, 95% CI 1.14-4.84). Omeprazole use is associated with an increased risk of vertebral fractures in postmenopausal women. Further studies are needed to determine the mechanism of the association between the underlying gastric disease, omeprazole use, and risk of fractures.

Bone density threshold and other predictors of

此外有找到另一篇停經後婦女針對使用omeprazole會增加髖骨骨折的風險，但因此篇並無RA或是胃潰瘍病史，且年份較舊，沒有選擇此篇文章

1. What question (PICO) did the systematic review address?	<input checked="" type="radio"/> Yes <input type="radio"/> NO <input type="radio"/> Unclear
2. F - Is it unlikely that important, relevant studies were missed?	<input type="radio"/> Yes <input checked="" type="radio"/> NO <input type="radio"/> Unclear
3. A - Were the criteria used to select articles for inclusion appropriate?	<input checked="" type="radio"/> Yes <input type="radio"/> NO <input type="radio"/> Unclear
4. A - Were the included studies sufficiently valid for the type of question asked?	<input checked="" type="radio"/> Yes <input type="radio"/> NO <input type="radio"/> Unclear
5. T - Were the results similar from study to study?	<input checked="" type="radio"/> Yes <input type="radio"/> NO <input type="radio"/> Unclear
6. How are the results presented?	<input checked="" type="radio"/> Yes <input type="radio"/> NO <input type="radio"/> Unclear

Levels of Evidence

Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence

Question	Step 1 (Level 1*)	Step 2 (Level 2*)	Step 3 (Level 3*)	Step 4 (Level 4*)	Step 5 (Level 5*)
How common is the problem?	Local and current random sample surveys (or censuses)	Systematic review of surveys that allow matching to local circumstances**	Local non-random sample**	Case-series**	n/a
Is this diagnostic or monitoring test accurate? (Diagnosis)	Systematic review of cross sectional studies with consistently applied reference standard and blinding	Individual cross sectional studies with consistently applied reference standard and blinding	Non-consecutive studies, or studies without consistently applied reference standards**	Case-control studies, or "poor or non-independent reference standard**	Mechanism-based reasoning
What will happen if we do not add a therapy? (Prognosis)	Systematic review of inception cohort studies	Inception cohort studies	Cohort study or control arm of randomized trial*	Case-series or case-control studies, or poor quality prognostic cohort study**	n/a
Does this intervention help? (Treatment Benefits)	Systematic review of randomized trials or <i>n</i> -of-1 trials	Randomized trial or observational study with dramatic effect	Non-randomized controlled cohort/follow-up study**	Case-series, case-control studies, or historically controlled studies**	Mechanism-based reasoning
What are the COMMON harms? (Treatment Harms)	Systematic review of randomized trials, systematic review of nested case-control studies, <i>n</i> -of-1 trial with the patient you are raising the question about, or observational study with dramatic effect	Individual randomized trial or (exceptionally) observational study with dramatic effect	Non-randomized controlled cohort/follow-up study (post-marketing surveillance) provided there are sufficient numbers to rule out a common harm. (For long-term harms the duration of follow-up must be sufficient.)**	Case-series, case-control, or historically controlled studies**	Mechanism-based reasoning
What are the RARE harms? (Treatment Harms)	Systematic review of randomized trials or <i>n</i> -of-1 trial	Randomized trial or (exceptionally) observational study with dramatic effect			
Is this (early detection) test worthwhile? (Screening)	Systematic review of randomized trials	Randomized trial	Non-randomized controlled cohort/follow-up study**	Case-series, case-control, or historically controlled studies**	Mechanism-based reasoning



這篇 Level 2 證據 可應用於我們的個案嗎？

應用
Apply

- 我們的病患與研究是否相仿？
 Yes No
 Unclear
●性別 相同疾病 種族 ●年齡 ●疾病特徵（症狀/共病症） ●使用藥物
- 這項治療方式在本地可行嗎？
 Yes No
 Unclear
●醫療政策 ●技術性 ●風土名情
- 是否符合病患主要訴求？
 Yes No
 Unclear
●病患考量點：骨鬆或骨折的風險
- 此項治療好處是否多於壞處？
 Yes No
 Unclear
治療效果 ●費用可接受 ●便利性

• PPI藥物

選擇	適應症	副作用	價格
Pantoprazole (Pantoloc)	胃食道逆流性疾病之 症狀治療	頭痛腹瀉 易跌倒藥品	17.5
ESOMEPRAZOLE (Nexium)	胃食道逆流性疾病-糜爛 性逆流性食道炎之治療	胃腸不適	10.8
DEXLANSOPRAZOLE (Dexilant)	非糜爛性胃食道逆流疾 病之症狀治療	胃腸不適	23.0
LANSOPRAZOLE (Takepron)	胃食道逆流性疾病之症 狀治療	便秘、腹瀉	17.4
RABEPRAZOLE (Pariet)	胃食道逆流性疾病之症 狀治療	失眠、頭痛、眩暈 胃腸不適	13.4

Esomeprazole may decrease time to recurrent peptic ulcer in adults receiving low-dose aspirin (level 3)

• 藥物的「其他選擇」 **DynaMed** UpToDate®
Powered by EBSCOhost

應用
Apply

選擇	適應症	副作用	價格
CIMETIDINE (DEFENSE)	胃潰瘍	腹瀉、頭暈、頭痛、皮疹	2
RANITIDINE (HCL) (VESYCA)	良性胃潰瘍	便秘、腹瀉、噁心嘔吐、 腹部不適、腹痛	2

胃潰瘍非藥物的「預防性策略」 UpToDate®

選擇	效用	壞處
運動減重 (physical activity)	<ul style="list-style-type: none">可減少因肥胖所增加的腹內壓力，影響胃與食道間的連結。	長期
飲食型態調整 (dietary adjustment)	<ul style="list-style-type: none">避免直接刺激食道黏膜的食物；且睡前三小時內避免飲食。	長期且須克制飲食
戒菸戒酒 (No smoking, alcohol)	<ul style="list-style-type: none">避免引發胃酸逆流	長期
使用口香糖或喉糖 (Chewing gum)	<ul style="list-style-type: none">促進唾液分泌，可中和胃酸也可促進食道內胃酸排空。	長期

冠心症急性發作時該如何處理？

- 1、立即停止所有活動，坐下或休息，並保持冷靜。
- 2、疼痛時立即服用舌下含片一片或噴劑一次。可每隔**5**分鐘使用一次，最多三次，若症狀持續或加劇，則立即就醫。
- 3、給予氧氣。
- 4、尋求旁人幫忙。

平日該注意什麼？

- 1、危險因子的控制:血壓,血糖,戒菸
- 2、飲食習慣的改變生活習慣改善: 低脂飲食，減重，規律的運動習慣。
- 3、按時服用藥物:需按醫囑按時服用抗凝血劑，以防止再度阻塞。



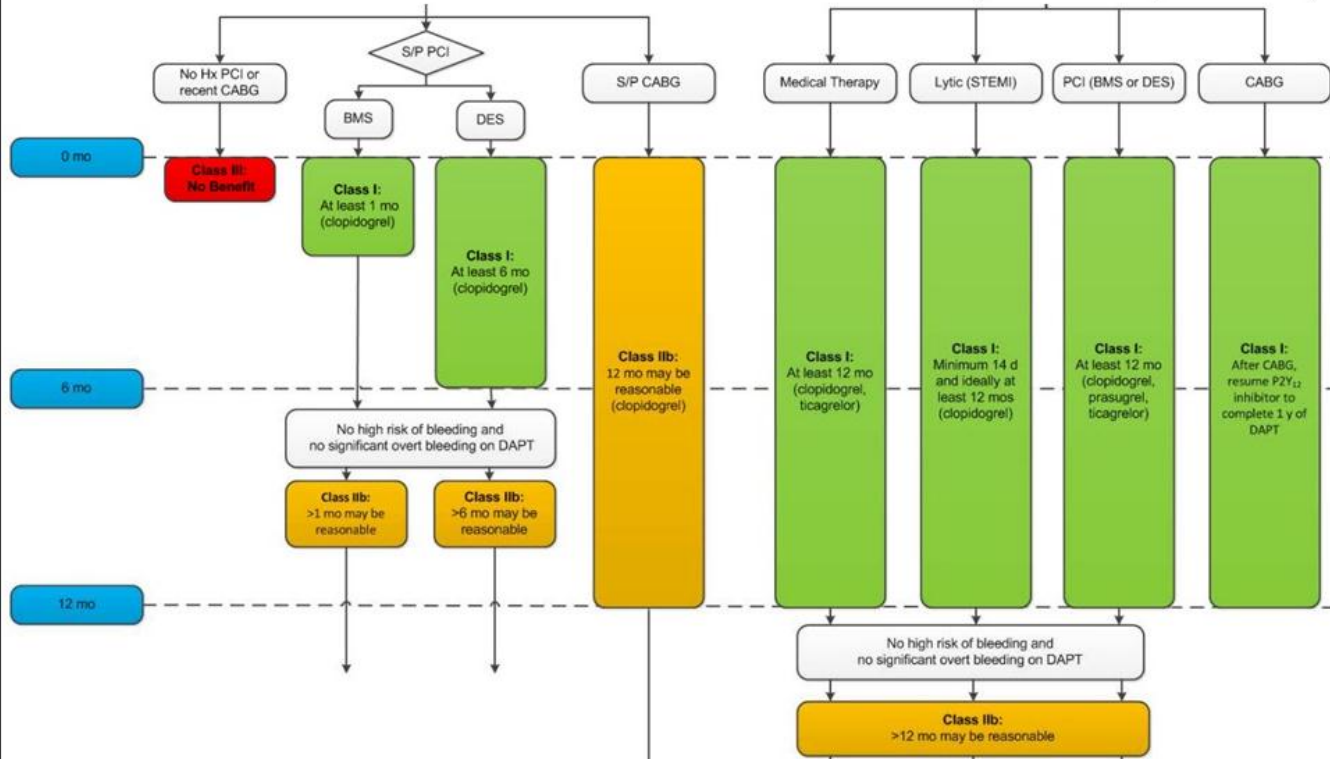
雙重抗血小板藥品最新版指引

The New England
Journal of Stupid

美國心臟醫學會發表最新版雙重抗血小板藥品 (DAPT) 使用指引!!

穩定性缺血性心臟疾病

急性冠心症 (NSTEMI/STEMI)



使用塗藥支架的患者，服用雙重抗血小板藥物應至少12個月以上。

依本題林奶奶之情形已服用超過一年。



病人的想法為何？

病患選擇治療方式會在意的因素有什麼？以及在意的程度

考量因素	不重要	普通	重要	非常重要
經濟考量因素		○		
較好生活品質			○	
照護的方便性			○	
病人的舒適性			○	
病人可存活時間		○		
治療的後遺症				○

臨床情況
病患的病情及醫院的醫療環境

病人期望
偏好、顧慮、期待

Expectation

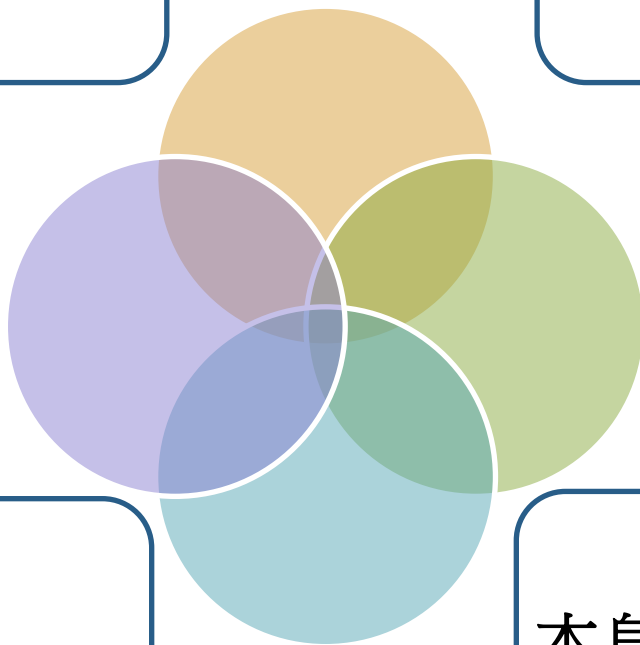
Environment

Experience

最佳證據等級
現有臨床研究資料

臨床經驗
本身的臨床技能、經驗、判斷

Evidence



臨床回覆

經過熱烈的討論，讓我們來回答您的問題



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林奶奶您好!我們團隊以實證醫學方法來回答您的問題。根據目前的臨床研究的結果，長期使用一年以上質子幫補抑制劑(PPI)會增加骨折風險；請林奶奶回骨科檢查您的骨密度及有無骨質疏鬆的症狀，先不用擔心，另外雙重抗血小板藥物超過一年，已達到治療準則，也請林奶奶回心臟科評估是否需要續用雙重抗血小板藥物。

Thank You

