



衛生福利部雙和醫院
(委託臺北醫學大學興建經營)
Taipei Medical University - Shuang Ho Hospital,
Ministry of Health and Welfare

實證醫學(EBM)種子教師培育課程

第一階段課程

衛生福利部雙和醫院
影像醫學部

蘇逸欣
2018.04.07



● 測試題



請問您有看過此部陸劇嗎？

- 1.有
- 2.沒有



● IRS練習題



請問你有用牙膏或醬油處理過燙傷的傷口嗎？

- 1.有
- 2.沒有
- 3.沒有，但是我覺得是可以的
- 4.沒有，而且我覺得是錯誤的

請問你覺得吃葡萄糖胺對於預防膝蓋退化性關節炎有效嗎？

1. 有
2. 沒有
3. 沒有，但是我覺得是可以的
4. 沒有，而且我覺得是錯誤的

請問你有被用線綁在門上或者用鉗子拔過牙齒嗎？

1. 有
2. 沒有
3. 沒有，但是我覺得是可以的
4. 沒有，而且我覺得是錯誤的

請問你認為癲癇發作時需要使患者嘴巴咬住物品嗎？

1. 需要
2. 不需要

請問你認為做完腰椎穿刺後，需要平躺6小時休息以避免頭痛嗎？

1. 需要
2. 不需要

● 有幾分證據，說幾

---引自胡適先生(19

有幾分證據，說幾
分話，有七分證據，不
能說八分話。

胡適

Outline

- 什麼是EBM?
- 流行病學簡介
- EBM五步驟

什麼是EBM?

- 請問什麼是EBM的縮寫?

Evidence- Based- Medicine

什麼是EBM?

- EBM :

實證醫學 (EBM, Evidence-based medicine) 是以**流行病學**和**統計學**的方法，從龐大的醫學資料庫中嚴格評讀、綜合分析找出**值得信賴**的部分，並將所能獲得的**最佳文獻證據**，應用於**臨床工作**中，使病人獲得最佳的照顧。

Fieldm & Lohrm研究報告發現醫師每天所作的決策：

- 4%是有強而有力的臨床研究證據所支持
- 45%是有謹慎的臨床研究證據，且醫師間有一定程度的共識
- 51%不但缺乏有力的證據支持，在醫師間亦無共識，肩灰色地帶

什麼是EBM?

- EBM :

西元1972年，英國臨床流行病學者Archie Cochrane提出「謹慎地、明確地、小心地採用目前最佳的證據，作為照顧病人臨床決策的參考」。

[Conscientious, explicit, and judicious use of current best evidence in making decisions about individual patients. ~ Archie Cochrane 1972]

什麼是EBM?

- EBM :

□ 實證醫學”此一名詞自1992年加拿大McMaster大學Gordon Guyatt教授所領導的小組正式命名後，1992英國國家衛生部成立實證醫學中心，以Archie Cochrane之名命名，並由David L. Sackett擔任實證醫學中心主任，進而促成1993年Cochrane Collaboration的設立。



Dave Sackett

什麼是EBM?

- EBM :

□ 目前世界各地有13個國家、15個實證醫學中心 (Cochrane Center) 在積極推動這個工作，其目標是從龐大的醫學資料庫中嚴格過濾、評讀這些文獻，並做**系統性文獻回顧**及綜合分析，以方便應用於臨床工作中，作為照護病患的依據。

什麼是EBM?

- EBM :



什麼是EBM?

- EBM :
56歲男性病人突然急性腹痛及背痛至急診就醫，做了KUB攝影發現左腎隱約有結石，因為影像不清楚因此又開立了IVP檢查，病人至影像醫學科檢查時問了問題：我從報導中得知低劑量電腦斷層也可以偵查出泌尿道結石，請問**低劑量電腦斷層與IVP檢查有什麼差異**以及他們的**準確度為何**？

什麼是EBM?

請

什麼是EBM?

- EBM :
A systematic review comparing the appropriateness of the intravenous urogram and the Computed Tomography Urogram in terms of diagnostic accuracy and risk of radiation dose for patients with urolithiasis.

Conclusions:
Non-enhanced spiral CT provided **greater diagnostic utility** in this **systematic review**.

Crompton G, Cosson P. Radiography 2011; 17(4): 304-310

什麼是EBM?

	Sensitivity	Specificity
NCCT	95-98%	96-98%
low dose CT	97%	95%
IVU	85.20%	90.40%

NCCT	7.3~10	mSv
low dose CT	1.4~1.97	mSv
KUB	0.67~1.1	mSv

- 近年來多家醫院使用**預充式導管沖洗器沖洗IV SET**，據說可以降低感染率，但是不曉得到底**可以降低多少感染率**？

引用自BD公司資料

使用預沖式導管沖洗器後 CRBSI Rate從6.3降為2.7 (per 1000 catheter days)

Journal of Hospital Infection 2013; 1-4
Available online at www.elsevier.com/locate/jhin

Journal of Hospital Infection
Journal of Hospital Infection - www.elsevier.com/locate/jhin

Short report
Pre-filled normal saline syringes to reduce totally implantable venous access device-associated bloodstream infection: a single institution pilot study
S. Bertoglio^{a,b,c}, R. Rezzo^a, F.D. Merlo^a, N. Solari^a, D. Palombo^a, F. Vassallo^d, S. Beltrami^e, A. DeMaria^{f,g}

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Infection
Microbiology
Syringes
Totally implantable venous access devices

SUMMARY
Flushing totally implantable venous access devices (TIVADs) with manually filled saline syringes may increase contamination and catheter-related bloodstream infection (CRBSI). We used a retrospective cohort study to assess the impact of changing from manually filled saline syringes to pre-filled normal saline syringes on the frequency of CRBSI in TIVADs. Manually filled syringes were used in 269 patients and pre-filled syringes in 449. The CRBSI rate was 6.3% per 1000 catheter days (95% CI 4.8-8.2) in the manually filled syringe group and 2.7% per 1000 catheter days (95% CI 1.8-3.6) in the pre-filled syringe group. CRBSI was independent risk factor for CRBSI.
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引用自BD
公司資料

BD預充式導管沖洗器文獻證實降低CRBSI 60%

- 2013 Journal of Hospital Infection
- Title: Pre-filled normal saline syringes to reduce totally implantable venous access device-associated bloodstream infection: a single institution pilot study
- Flushing totally implantable venous access devices (TIVADs) with manually filled saline syringes may increase contamination and catheter-related bloodstream infection (CRBSI).

以手工配置食鹽水沖管會增加汙染及導管相關血流感染發生率

- 此研究顯示：使用預充式導管沖洗器可降低60%導管相關血流感染率(CRBSI%)，從6.3(手工配置)降至2.7%(預充式)

S. Serrhini, A. P. Ferrero, E. P. Ferrero, A. N. Serrhini, F. Vassallo, S. Beltrami, A. DeMaria | Reference: 2013 The Healthcare Infection Society. Published by Elsevier Ltd.

Keywords: Central venous system; Equipment contamination; Infusion; Microbiology

Outline

- 什麼是EBM?
- 流行病學簡介
- EBM五步驟

流行病學簡介

- 流行病學 (epidemiology) 是研究特定人群中疾病、健康狀況的分布及其決定因素，並研究防治疾病及促進健康的策略和措施的科學。搜尋證據 (Evidence search)
- 流行病學的定義和特徵。描述分布的常用測量指標(發病率、罹患率、患病率、死亡率、病死率)的意義、用途與計算方法。描述疾病流行強度的常用語：爆發、流行和**大流行**；疾病的分布的概念及主要內容。

請問**霍亂**病毒主要感染途徑為？

1. 眼神接觸以及四目交接
2. 主要由飲水所傳染，污染來自嘔吐物或糞便，食物傳染但較少見
3. 血液
4. 接吻

流行病學簡介

John Snow與霍亂的大事記



- 流行病學發展的中心人物當屬**John Snow** (1813-1858) 這個人。他是一位臨床麻醉科醫師，但也是早期少數清楚瞭解到一個醫生的工作應該要超乎治療疾病的人之一。
- 透過一系列的觀察與研究，Snow發現1854年倫敦地區的**霍亂**流行是由**飲用水**受到**人類糞便**污染而引發的。

流行病學簡介

John Snow與霍亂的大事記

- 這項發現比微生物學家發現霍亂弧菌 (Vibrio cholerae) 的時間**早32年**；也比Pasteur於1865年證明**微生物**會造成疾病流行的觀察**早了10年**。
- 1854年英倫敦地區爆發霍亂流行，當時倫敦的飲水是由**數家私人水公司**經營。

流行病學簡介



John Snow與霍亂的大事記

- Snow分析了所有霍亂死亡個案的飲水來源後發現飲用**Southwark & Vauxhall**這家公司供水的人有較高的**死亡率**。
- 當數據顯示Southwark & Vauxhall公司所供應的家戶其霍亂死亡率是其他公司的**5至10倍**後，他開始懷疑霍亂流行是與Southwark & Vauxhall公司所供應的水有關。

流行病學簡介

John Snow與霍亂的大事記

- Snow正確的使用「**比率**」描述疾病在族群中分佈的情形是他能夠始終在正確方向上的重要因素。他接著仔細觀察Southwark & Vauxhall公司供水的來源，它發現**Southwark & Vauxhall公司**的水源位於**河川的下游**，河川上游並有人類糞便的排泄。

流行病學簡介

John Snow與霍亂的大事記

- 當Snow有了這些觀察後，他接續進行了幾個流行病學研究過程中很重要的步驟。
- 當他將霍亂病例按居住地區繪於**地圖**上時，他發現個案有「**聚集**」於**Broadway Street**上**取水站**的現象，而這也更另他相信霍亂的發生與水有關。
- 透過人時地的描述嘗試發現**聚集 (clustering)**現象是描述性**流行病學研究**的核心工作。

流行病學簡介

John Snow與霍亂的大事記

- Snow的這項觀察實際上是融入了現代科學研究中**對照組 (control group)**的概念，也使用了現代流行病學研究中經常使用的**假說演繹**的推論 (hypothetico-deductive reasoning)。

流行病學簡介



John Snow與霍亂的大事記

- 雖然當時的生物學知識與技術並無法提供進一步的驗證支持Snow的發現，但當倫敦衛生當局於1854年9月8日將**Broadway Street**取水站的壓水手把**移除**後，霍亂死亡個案數隨即**急速減少**，到9月20日以後每日報告的死亡數便與9月1日暴發流行之前一樣。

流行病學簡介

John Snow與霍亂的大事記



流行病學簡介

近代流行病學

- ▣ 社區 **飲水加氯** 的試驗提供了能夠 **預防齲齒** 的氟濃度。
- ▣ **沙克疫苗** 的臨床試驗證據提供了人類消滅 **小兒麻痺** 的利器。
- ▣ Framingham Heart Study 讓人類更加瞭解 **心血管疾病** 的病因與預防之道。
- ▣ **吸菸與肺癌** 及其他健康效應的研究。
- ▣ **長崎廣島原子彈爆炸** **存活者的追縱研究** 都讓人類更加瞭解環境與健康的互動。

Outline

- 什麼是EBM?
- 流行病學簡介
- **EBM五步驟**

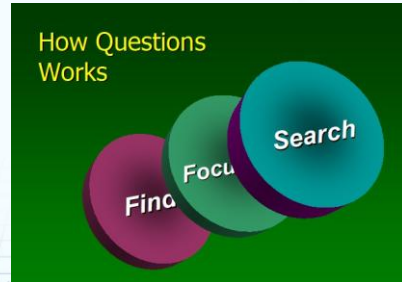
什麼是EBM?

- EBM五步驟：
 - ▣ 提出問題 (Question formulation)
 - ▣ 搜尋證據 (Evidence search)
 - ▣ 嚴格判讀 (Critical appraisal)
 - ▣ 恰當運用 (Evidence application)
 - ▣ 評估結果 (Outcome evaluation)

EBM五步驟

- EBM五步驟：
 - ▣ 提出問題 (Question formulation)
 - ▣ 搜尋證據 (Evidence search)
 - ▣ 嚴格判讀 (Critical appraisal)
 - ▣ 恰當運用 (Evidence application)
 - ▣ 評估結果 (Outcome evaluation)

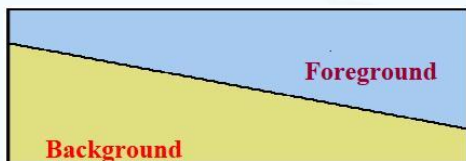
- 提出問題 (Question formulation)



EBM五步驟

- EBM五步驟：
 - ▣ 提出問題 (Question formulation)
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 - ▣ 嚴格判讀 (Critical appraisal)
 - ▣ 恰當運用 (Evidence application)
 - ▣ 評估結果 (Outcome evaluation)

- 提出問題 (Question formulation)



EBM五步驟

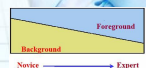
- EBM五步驟：
 - ▣ 提出問題 (Question formulation)
 - ▣ 搜尋證據 (Evidence search)
 - ▣ 嚴格判讀 (Critical appraisal)
 - ▣ 恰當運用 (Evidence application)
 - ▣ 評估結果 (Outcome evaluation)

- 提出問題 (Question formulation)

背景問題 (Background questions) : 5W1H

意指與疾病相關的知識性問題，問題的結構通常包括 (who、what、where、when、how、why)。

- Who** : 病患特性、危險因子等
- What** : 自然病程、症狀學等
- Where** : 影響的器官與系統、疾病分佈的區域等
- When** : 疾病好發的年齡、時間、季節等
- How** : 病理生理學
- Why** : 病因



EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

● **提出問題 (Question formulation)**
背景問題 (Background questions) :
 案例:急性心肌梗塞
Who : 老年人、男性、家族史
What : 胸口悶痛、流冷汗等等
Where : 心臟冠狀動脈阻塞的位置、程度等等
When : 氣溫變化劇烈、氣溫低.....等
How : 動脈硬化斑塊破裂、血栓形成
Why : 動脈硬化危險因子、糖尿病、高血壓、高血脂症、抽菸, 肥胖, 少運動

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

● **提出問題 (Question formulation)**
前景問題 (Foreground questions) :
 指與治療病患相關的特殊性問題，通常包括有**6個**項目：
Therapy/Prevention : 評估不同治療方式...
Harm/Etiology : 評估會造成的傷害...
Diagnosis (tests) : 不同診斷工具的準確度...
Prognosis : 評估疾病癒後...

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

● **提出問題 (Question formulation)**
Therapy/Prevention :
 研究治療或預防方法的有效性
 例如：服用“阿斯匹林”是否可以預防中風？
Harm/Etiology :
 研究暴露的危害或疾病的原因
 例如：停經婦女使用荷爾蒙治療是否會增加乳癌的**機會**？

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

● **提出問題 (Question formulation)**
Diagnosis (tests) :
 研究檢查方法或臨床表徵對疾病診斷的有效性
 例如：Low dose CT 診斷肺癌的**敏感度**及**特異度**為何？
Prognosis :
 建立疾病預後的預測模式，例如：利用 Ranson's criteria 預測急性胰臟炎**死亡率**為何？

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

● **提出問題 (Question formulation)**

Patient	Intervention	Comparison	Outcome
---------	--------------	------------	---------

- P : patient and/or problem(病患)
- I : intervention(處理)
- C : comparison of intervention(對照)
- O : clinical outcome(臨床結果)

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

● **提出問題 (Question formulation)**

Patient or Problem	Intervention	Comparison intervention	Outcome
Description of the patient or the target disorder of interest	Could include: -Exposure -Diagnostic test -Prognostic factor -Therapy -Patient perception etc.	Relevant most often when looking at therapy questions	Clinical outcome of interest to you and your patient

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

● 提出問題 (Question formulation)

Patient or Problem	Intervention	Comparison intervention	Outcome
65 year old man with stroke and moderate carotid stenosis	Carotid endarterectomy	Medical therapy	Functional Class


■ In a 65 year old man with stroke and moderate carotid stenosis, can carotid endarterectomy improve functional class after stroke compared with medical therapy?

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

● 提出問題 (Question formulation)

張先生今年55歲，至影像醫學部做**骨質密度檢查**，詢問放射師說，有聽媒體報導說**喝咖啡會導致增加骨質流失之風險**，且增加，那像他很喜歡喝咖啡的人很多，難道**真的會**增加骨質流失之**風險嗎**？



(3) BJ4, G
 (4) 藍瘦

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
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● 提出問題 (Question formulation)

Patient	Intervention	Comparison	Outcome
55歲男性	咖啡	沒有喝咖啡	骨質流失

- P : patient and/or problem(病患)
- I : intervention(處理)
- C : comparison of intervention(對照)
- O : clinical outcome(臨床結果)

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

● 搜尋證據 (Evidence search)

- 關鍵字設定
- 資料庫選擇
- 學習各種資料庫的搜尋方法
- 多練習，熟能生巧

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

● 搜尋證據 (Evidence search)

Primary Term	Synonym 1	Synonym 2
P (OR	OR) AND
I (OR	OR) AND
C (OR	OR) AND
O (OR	OR

- 關鍵字設定
- 資料庫選擇
- 學習各種資料庫的搜尋方法
- 多練習，熟能生巧

EBM五步驟

EBM五步驟：

- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
- 嚴格判讀 (Critical appraisal)
- 恰當運用 (Evidence application)
- 評估結果 (Outcome evaluation)

EBM五步驟：

- 提出問題 (Question formulation)

● 搜尋證據 (Evidence search)

Category	Articles per Day
Biomedical	5,000?
MEDLINE	1,500
Trials	95
Diagnostic?	-

- 關鍵字設定
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EBM五步驟

EBM五步驟：

- 提出問題 (Question formulation)

EBM五步驟：

- 提出問題 (Question formulation)

Level	Research Type	Examples
Systems	Secondary pre-appraised research	Computerised decision support
Summaries	Secondary pre-appraised research	Critically appraised topics, evidence-based guidelines
Synopses	Secondary pre-appraised research	Critically appraised journal articles
Syntheses	Secondary pre-appraised research	Systematic reviews and meta-analysis
Studies	Primary original research	RCTs, Cohort studies, case-control studies, case series/reports

- 多練習，熟能生巧

5S EBM Resources (非關證據強弱!)

應用至臨床病人身上

1. Systems: 整合證據提供特定臨床問題之概述與建議 (ACP PIBB, BMJ Clinical Evidence, DynaMed, MDconsult, UpToDate) **Up to date**
2. Summaries: 對單篇研究或回顧性文章 (ACP Journal Club, Evid, PubMed, Ovid Medicine) **Evidence-Based Medicine**
3. Synopses: 特定臨床問題的系統性文獻 (Cochrane Database of Abstracts of Reviews of Effectiveness, Cochrane, PubMed, Ovid Medline) **Cochrane**
4. Syntheses: 原始文獻 original studies (PubMed, Ovid Medline, Cochrane CENTRAL, Cochrane, CEPS中文電子期刊, 中文期刊篇目索引) **PubMed**
5. Studies: 原始文獻 original studies

Model from: Haynes, R. B. (2006). Of studies, syntheses, synopses, summaries, and systems: the "5S" evolution of information services for evidence-based health care decisions. *ACP Journal Club*, 145(3), A8.

請問你會從哪一個層級開始搜尋？

1. Studies
2. Syntheses
3. Synopses
4. Summaries

EBM五步驟

EBM五步驟：

- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
- 嚴格判讀 (Critical appraisal)
- 恰當運用 (Evidence application)
- 評估結果 (Outcome evaluation)

EBM五步驟：

- 提出問題 (Question formulation)

● 搜尋證據 (Evidence search)

Search Results for "Intracranial aneurysms"

- 關鍵字設定
- 資料庫選擇
- 學習各種資料庫的搜尋方法
- 多練習，熟能生巧

EBM五步驟

EBM五步驟：

- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
- 嚴格判讀 (Critical appraisal)
- 恰當運用 (Evidence application)
- 評估結果 (Outcome evaluation)

EBM五步驟：

- 提出問題 (Question formulation)

● 搜尋證據 (Evidence search)

Treatment of aneurysmal subarachnoid hemorrhage

- 關鍵字設定
- 資料庫選擇
- 學習各種資料庫的搜尋方法
- 多練習，熟能生巧

EBM五步驟

- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
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- 評估結果 (Outcome evaluation)

● 搜尋證據 (Evidence search)

ACP Journal Club - Search Results

Search for: intracranial aneurysm, clipping, coiling

Phrases must be in "quotes"

Article type: Therapeutics, Diagnosis, Clinical Prediction Guide, Programs, Don't use synonyms

Improve your results
The following words don't appear in ACP Journal Club: clipping, aneurysm. Reprasing your query using different words may improve results.

Found 1 matches. Showing 1 - 1.

1. OAM: International subarachnoid aneurysm trial (ISAT) of neurosurgical clipping versus endovascular coiling in 2143 patients with ruptured intracranial aneurysms: a randomised comparison of effects on survival, dependency, seizures, rebleeding, subgroup, and aneurysm occlusion.

關鍵字設定
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EBM五步驟

- 提出問題 (Question formulation)
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- 評估結果 (Outcome evaluation)

● 搜尋證據 (Evidence search)

THE COCHRANE LIBRARY

Search Results

Found 1 results for 'intracranial aneurysm and coiling and clipping, from 1989 to 2011 in Cochrane Database of Systematic Reviews'

1. OAM: International subarachnoid aneurysm trial (ISAT) of neurosurgical clipping versus endovascular coiling in 2143 patients with ruptured intracranial aneurysms: a randomised comparison of effects on survival, dependency, seizures, rebleeding, subgroup, and aneurysm occlusion.

關鍵字設定
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- 搜尋證據 (Evidence search)
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- 評估結果 (Outcome evaluation)

● 搜尋證據 (Evidence search)

PubMed

Search: PubMed

Results: 1 to 20 of 364

1. Kinking anterior communicating artery aneurysms: diagnosis, clinical and management issues.

2. Loria VA, Chen B, Chen LY, Zhang S, Qian CQ. [A randomized aneurysmal treatment for knowledge: ISAT (intracranial aneurysm)].

3. [The influence of genetic factors on the occurrence of intracranial aneurysms: a meta-analysis].

4. [The influence of genetic factors on the occurrence of intracranial aneurysms: a meta-analysis].

5. [The influence of genetic factors on the occurrence of intracranial aneurysms: a meta-analysis].

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- 評估結果 (Outcome evaluation)

● 搜尋證據 (Evidence search)

Trip - Librating the literature

Try our newly improved Advanced Search

SEARCH PICO ADVANCED SEARCH

Population: patient
Intervention: TAE
Comparison: surgery
Outcome: outcome

關鍵字設定
資料庫選擇
學習各種資料庫的搜尋方法
多練習，熟能生巧

EBM五步驟

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- 搜尋證據 (Evidence search)
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- 恰當運用 (Evidence application)
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● 搜尋證據 (Evidence search)

Trip - Librating the literature

Search: (patient)(TAE)(surgery)(outcome)

284 results for "(patient)(TAE)(surgery)(outcome)", by quality

1. A Trial on SIRT After Incomplete TAE or TACE Versus Exclusive TAE or TACE For Treatment of Inoperable HCC

2. TAE and Surgery in Patients With Peptic Ulcer Bleeding Uncontrolled by Endoscopic Therapy

3. Pulmonary Protective Effects of Remote Ischemic Preconditioning with Postconditioning in Patients Undergoing Cardiac Surgery Involving Cardiopulmonary Bypass: A Substudy of the Remote Ischemic Preconditioning with Postconditioning Outcome Trial

Systematic review

關鍵字設定
資料庫選擇
學習各種資料庫的搜尋方法
多練習，熟能生巧

EBM五步驟

- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
- 嚴格判讀 (Critical appraisal)
- 恰當運用 (Evidence application)
- 評估結果 (Outcome evaluation)

● 搜尋證據 (Evidence search)

Trip - Librating the literature

Search: (patient)(TAE)(surgery)(outcome)

3 results for "(patient)(TAE)(surgery)(outcome)", by quality

1. Use of recombinant activated factor VII in patients without hemophilia: a meta-analysis of randomized control trials

2. Screening for Hepatocellular Cancer in Chronic Liver Disease: A Systematic Review

3. The views of young people in the UK about obesity, body size, shape and

Systematic review

關鍵字設定
資料庫選擇
學習各種資料庫的搜尋方法
多練習，熟能生巧

EBM五步驟

- EBM五步驟：
 - 提出問題 (Question formulation)
 - 搜尋證據 (Evidence search)
 - 嚴格判讀 (Critical appraisal)
 - 恰當運用 (Evidence application)
 - 評估結果 (Outcome evaluation)

● 搜尋證據 (Evidence search)

QUERI

Screening for Hepatocellular Cancer in Chronic Liver Disease: A Systematic Review

- 關鍵字設定
- 資料庫選擇
- 學習各種資料庫的搜尋方法
- 多練習、熟能生巧

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 - 恰當運用 (Evidence application)
 - 評估結果 (Outcome evaluation)

● 搜尋證據 (Evidence search)

METHODS

Data sources: Medline, PsycInfo, Cochrane Central Register of Controlled Trials, and Cochrane Database of Systematic Reviews to March 2013; clinical trial registries; reference lists; and technical advisors.

Study Selection We examined controlled clinical trials and observational studies comparing screening to no screening, and controlled clinical trials comparing different screening intervals. We also examined controlled clinical trials and observational studies comparing one of the following active treatments to conservative treatment in patients with early-stage HCC: transarterial chemoembolization (TACE), partial hepatic resection, orthotopic liver transplant (OLT), radiofrequency ablation (RFA), and sorafenib. Because of the dearth of studies for all treatments other than TACE comparing active to conservative treatments, we evaluated noncomparative observational studies for evidence on harms and long-term survival. The population of interest was patients with chronic liver disease with or without cirrhosis.

- 關鍵字設定
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Effects of screening on mortality: RCTs

EBM五步驟：

- 提出問題 (Question formulation)

Two trials, both conducted in China compared the effects of screening to no screening on mortality among participants mainly with hepatitis B. One trial used a cluster-randomized design to assign factories, business, and schools to screening or no screening groups. Screening group participants (n = 9,757) were offered serum AFP testing and ultrasonography every 6 months. The primary outcome of HCC mortality occurred less frequently in the screening group (83.2/100,000 person-years vs 131.5/100,000 person-years; rate ratio 0.63, 95% CI 0.41–0.98). However, this trial, carried a high-risk of bias because of several serious methodological limitations that threaten the validity of the results. The second trial used patient-level randomization stratified by township to assign hepatitis B patients to the screening intervention (n = 3,712), which consisted of serial AFP tests followed by ultrasound for high AFP values, or the usual care group (n = 1,869). HCC mortality was similar in both groups (1,138/100,000 person-years vs 1114/100,000 person-years, p = 0.86), as was all-cause mortality (1,843/100,000 person-years vs 1,788/100,000 person-years, p = NS). This trial carried an unclear risk of bias because of poor reporting of randomization and allocation concealment techniques.

Two additional trials compared different ultrasound screening intervals. One unclear risk of bias trial found no survival advantage comparing 4-month to 12-month ultrasound screening intervals in patients with serologic evidence of hepatitis B or C. A trial with low risk-of-bias compared 3-month to 6-month ultrasound screening intervals in 1,278 patients with cirrhosis from alcohol use and/or viral hepatitis and found similar all-cause mortality rates in both groups.

- 學習各種資料庫的搜尋方法
- 多練習、熟能生巧

EBM五步驟

- EBM五步驟：
 - 提出問題 (Question formulation)
 - 搜尋證據 (Evidence search)
 - 嚴格判讀 (Critical appraisal)
 - 恰當運用 (Evidence application)
 - 評估結果 (Outcome evaluation)

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 (survey or consensus)	Local non-random sample**	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 standard**	Case-control studies, or poor quality prognostic cohort study**	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 n-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, n-of-1 trial with the patient you are posing 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 studies, or historically controlled studies**	Mechanism-based reasoning
What are the RARE harms? (Treatment harms)	Systematic review of randomized trials or n-of-1 trials	Randomized trial or (exceptionally) observational study with dramatic effect	Non-randomized controlled cohort/follow-up study	Case series, case-control, or historically controlled studies**	Mechanism-based reasoning
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

- 關鍵字設定
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Expert

EBM五步驟

- EBM五步驟：
 - 提出問題 (Question formulation)
 - 搜尋證據 (Evidence search)
 - 嚴格判讀 (Critical appraisal)
 - 恰當運用 (Evidence application)
 - 評估結果 (Outcome evaluation)

● 搜尋證據 (Evidence search)

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 (survey or consensus)	Local non-random sample**	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 standard**	Case-control studies, or poor quality prognostic cohort study**	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, systematic review of nested case-control studies, n-of-1 trial with the patient you are posing the question about, or real study with dramatic effect	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 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, n-of-1 trial with the patient you are posing 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 studies, or historically controlled studies**	Mechanism-based reasoning
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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

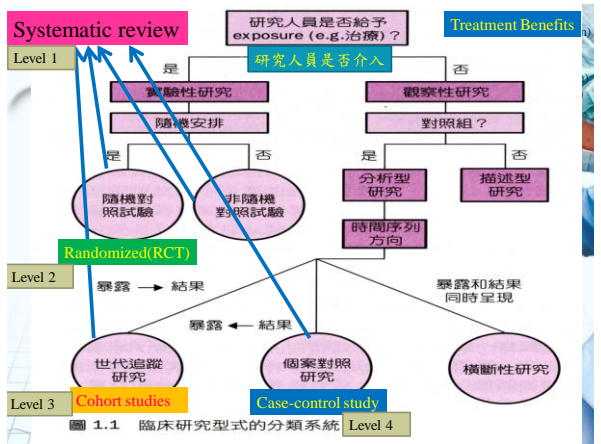
Systematic review

Cohort studies

Randomized (RCT)

Case-control study

- 關鍵字設定
- 資料庫選擇
- 學習各種資料庫的搜尋方法
- 多練習、熟能生巧



● 搜尋證據 (Evidence search)

原始研究 (Original Study)

■ 隨機對照實驗 (Randomized Control Trial, **RCT**)

給**實驗組**及**對照組**不同的治療，觀察其後果。
 例如：實驗組吃**aspirin**，對照組吃**澱粉**，比較兩組**五年後中風的機率**。為目前臨床流行病學中公認**證據力最強**之原始介入性研究設計 (primary interventional study)。在此設計中，如果能夠採行**雙盲**對照 (double blinded, placebo-controlled) 則干擾因素的影響可以進一步減少

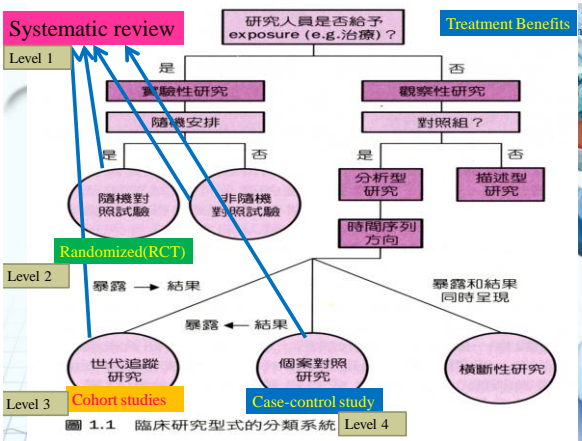
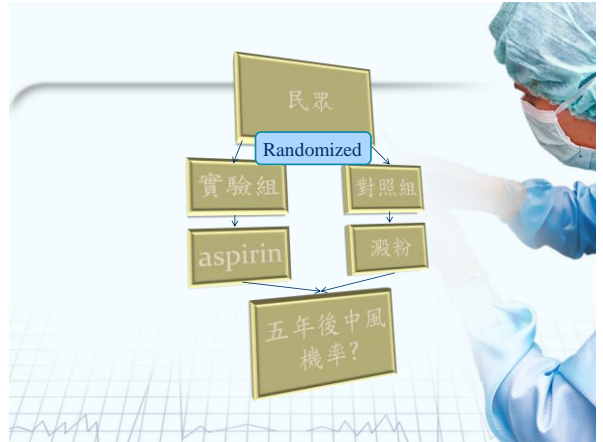
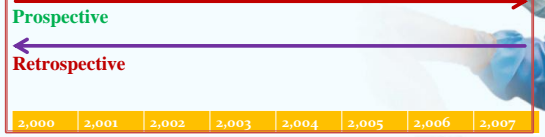


圖 1.1 臨床研究型的分類系統

EBM五步驟

- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
- 嚴格判讀 (Critical appraisal)
- 恰當運用 (Evidence application)
- 評估結果 (Outcome evaluation)

longitudinal studies - Cohort studies



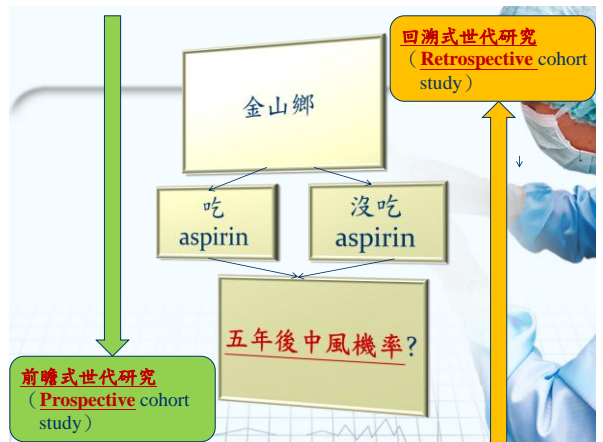
- 關鍵字設定
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- 多練習，熟能生巧

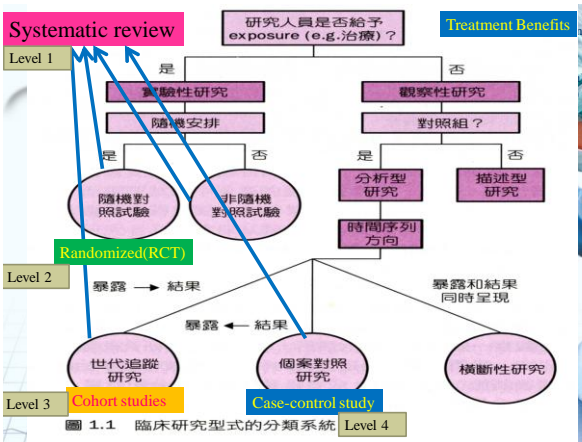
● 搜尋證據 (Evidence search)

原始研究 (Original Study)

■ 世代研究 (Cohort Study)

觀察自然暴露/治療方式的影響，長期追蹤其結果。例如：比較金山鄉有吃**aspirin**及沒有吃 aspirin 的人，五年後新發中風的機率。提供**比隨機對照試驗**證據力較**次一級**之研究證據，是屬於臨床流行病學中之觀察性研究。針對幾個子群，由**接受暴露因子開始**，一直**追蹤到結果**。





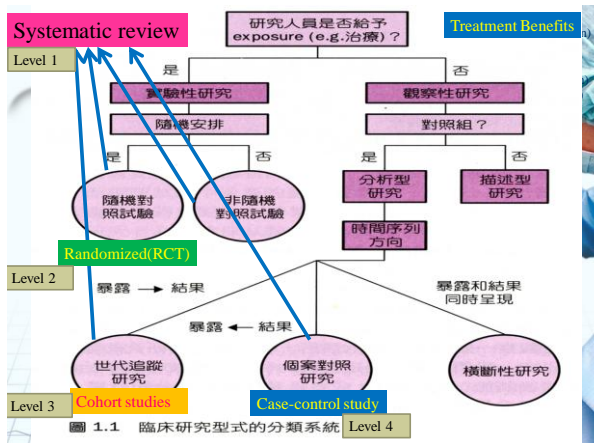
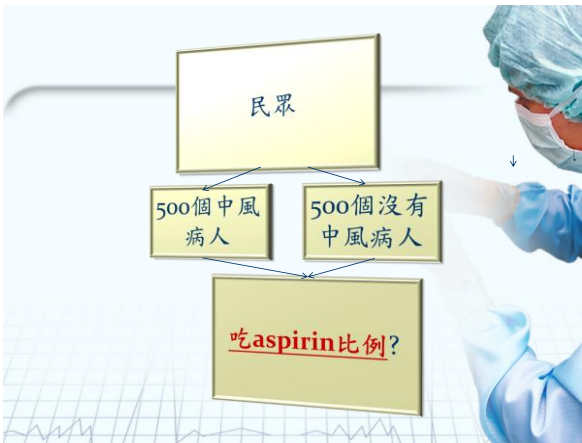
● 搜尋證據 (Evidence search)

原始研究 (Original Study)

■ 個案對照研究 (Case Control Study)

選擇病人組及對照組，研究其暴露/治療的影響。

例如：比較500個有中風的個案及500個沒有中風的個案，他們吃 aspirin 的比例。這是**流行病學中極重要的研究方式**，雖然它的臨床**證據力**較世代研究為低，但可以在**短時間內**以**少許資金與努力**，就能得到重要的科學發現，是最有效率的研究設計，但也容易受到偏見的影响。



● 搜尋證據 (Evidence search)

文獻回顧 (Review of Literature)

■ 系統性回顧 (systemic review)

系統性的文獻回顧，將個人好惡及偏差減至最低。需引用各種文獻資料庫，並說明查詢的關鍵字，有引用文獻的**明確標準**，不能依作者喜好選取文獻，通常會使用統計方法 (Meta-Analysis 統合分析)，以解決臨床爭議為目的。

EBM五步驟：

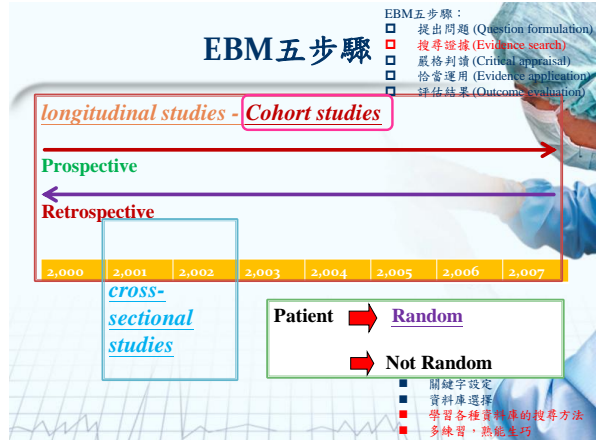
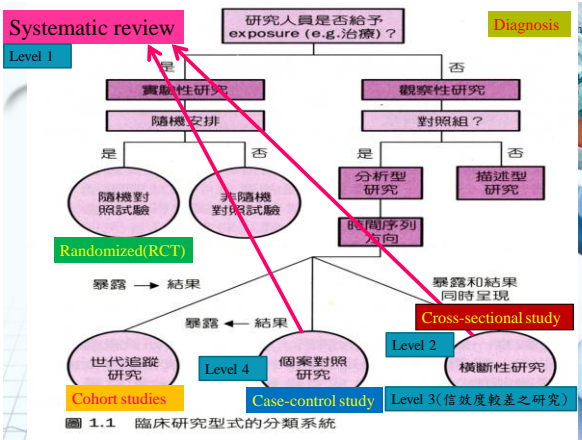
- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
- 嚴格判讀 (Critical appraisal)
- 恰當運用 (Evidence application)
- 評估結果 (Outcome evaluation)

EBM五步驟

Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence

Question	Systematic review	信度較差之研究	Survey	Case-control study
How common is the problem?	Systematic review	Individual cross sectional studies with consistently applied reference standard and blinding	Survey	Case-control studies, or cohort studies, or clinical arm of randomized trial
What are the diagnostic or monitoring test (accuracy)?	Systematic review of randomized trials or n-of-1 trials	Individual cross sectional studies with consistently applied reference standard and blinding	Survey	Case-control studies, or cohort studies, or clinical arm of randomized trial
What will happen if... (Treatment/Benefits)?	Systematic review of randomized trials or n-of-1 trials	Individual cross sectional studies with consistently applied reference standard and blinding	Survey	Case-control studies, or cohort studies, or clinical arm of randomized trial
What are the RARE harms? (Treatment/Harms)?	Systematic review of randomized trials or n-of-1 trials	Individual cross sectional studies with consistently applied reference standard and blinding	Survey	Case-control studies, or cohort studies, or clinical arm of randomized trial
Is this (early detection) test worthwhile? (Screening)?	Systematic review of randomized trials	Individual cross sectional studies with consistently applied reference standard and blinding	Survey	Case-control studies, or cohort studies, or clinical arm of randomized trial

- 關鍵字設定
- 資料庫選擇
- 學習各種資料庫的搜尋方法
- 多練習，熟能生巧



research design

EBM五步驟:

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PubMed.gov

Search: PubMed

Longitudinal study of smoking cessation before pregnancy and children's cognitive abilities at 56months of age.

Heinonen K, Raitikainen K, Pesonen AK, Andersson S, Kajantie E, Eriksson JG, Wolke D, Lano A. Institute of Behavioral Science, P.O. Box 9, FI-00014, University of Helsinki, Finland.

Abstract

BACKGROUND: An inverse relationship exists between the rates of maternal smoking during pregnancy and children's cognitive abilities. The effect of maternal cessation of smoking before pregnancy on child's cognitive development is less clear.

AIMS: To study whether maternal cessation of smoking before pregnancy is associated with children's cognitive abilities.

STUDY DESIGN AND SUBJECTS: The original cohort included all 1535 live-born infants admitted to the neonatal wards during 1 year and 958 randomly recruited non-admitted infants. The present study sample comprised 1019 (66.2%) children of the original sample born at term and free of any major impairment followed up to 56 months.

OUTCOME MEASURES: Child's general reasoning, visual-motor integration, verbal competence, and language comprehension

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research design

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PubMed.gov

Search: PubMed

The impact of the metabolic syndrome on health-related quality of life: A cross-sectional study in Greece.

Tziallas D, Kastanioti C, Kostapanos MS, Stratakis P, Elisaf MS, Mavreas V. Department of Internal Medicine, University of Ioannina, Ioannina, Greece.

Abstract

BACKGROUND: Metabolic syndrome (MetS) is a chronic, progressive and multi-complex health problem that can trigger physical, emotional and psychosocial problems. The aim of this study is to investigate the association between MetS and health-related quality of life (HRQoL) as well as depressive and anxiety disorders.

METHODS: New consecutive patients who attended an outpatient lipid clinic for evaluation for MetS were eligible for inclusion in the study. The MetS was defined according to the new definition of International Diabetes Federation (IDF). The Medical Outcomes Study Short Form-36 (SF-36) was used to assess HRQoL. Anxiety and depressive symptoms were assessed by a validated Greek version of the Hospital Anxiety and Depression Scale (HADS).

- 多練習, 熟能生巧

research design

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PubMed.gov

Search: PubMed

Systematic review of the concurrent and predictive validity of MRI biomarkers in OA.

Hunter DJ, Zhang W, Conaghan PG, Hinke K, Menashe L, Li L, Reichmann WM, Losina E. Rheumatology Department, Royal North Shore Hospital and Northern Clinical School, University of Sydney, Sydney, NSW Australia; Division of Research, New England Baptist Hospital, Boston MA USA.

Abstract

OBJECTIVE: To summarize literature on the concurrent and predictive validity of MRI-based measures of osteoarthritis (OA) structural change.

METHODS: An online literature search was conducted of the OVID, EMBASE, CINAHL, PsycInfo and Cochrane databases of articles published up to the time of the search, April 2009. 1,338 abstracts obtained with this search were preliminarily screened for relevance by two reviewers. Of these, 243 were selected for data extraction for this analysis on validity as well as separate reviews on discriminative validity and diagnostic performance. Of these 142 manuscripts included data pertinent to concurrent validity and 61 manuscripts for the predictive validity review. For this analysis we extracted data on criterion (concurrent and predictive) validity from both longitudinal and cross-sectional studies for all synovial joint tissues as it relates to MRI

- 多練習, 熟能生巧

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● 搜尋證據 (Evidence search)



- 關鍵字設定
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■ 請問你個人比較喜歡的可樂是？

1. 可口可樂
2. 百事可樂
3. 他牌可樂

EBM五步驟

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● 搜尋證據 (Evidence search)



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● **Coffee and Cancer of the Pancreas**
 每天喝**三杯咖啡者**得**胰臟癌**的風險為不喝咖啡者的**2.7倍** (1.6 to 4.7).

But it's has occur → **Select bias**

被選擇參與研究者皆為**腸胃科病人**

Brian MacMahon, M.D., Stella Yen, M.D., Dimitrios Trichopoulos, M.D., Kenton W. Kinzler, M.D., and George Nardi, M.D. N Engl J Med 1981; 304:630-633 March 12, 1981. ■ 學習各種資料的搜尋方法 ■ 多練習，熟能生巧

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● **嚴格判讀 (Critical appraisal)-簡單判讀**

■ **Oxford Evidence-Based Medicine Levels-Level 1-5**

最主要有三個主要步驟，即為**VIP**：

■ **V (Validity/Reliability)** 效度/信度：文獻研究收集個案方式**是否嚴謹**，是否具有**有效度 (Validity)**？

■ **I (Importance/Impact)** 重要性、文獻統計方法是**否正確**，**結果是否具有重要性**？

■ **P (Practice/Applicability)** 臨床適用性。

EBM五步驟

- 提出問題 (Question formulation)
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● **嚴格判讀 (Critical appraisal)**

■ 文獻個案收集方式是否**隨機取樣 (Randomization)**？

Randomization、case-control study、case-series

■ 個案**追蹤成功率**是否高？

■ 是否進行**單盲 (Single-blind)**或**雙盲 (Double-blind)**測試？

■ 研究進行中個案是否經由**嚴謹管制**？

■ 個案是否**追蹤遺失**？

■ 文獻研究收集個案方式是否嚴謹，是否具有有效度 (Validity)？

■ 文獻統計方法是否正確，結果是否具有重要性 (Importance)？

■ 文獻是否適合應用在您病人身上？

EBM五步驟

- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
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I

不同的問題利用不同的統計量

Therapy/Prevention	Diagnosis
RRR	Sensitivity
ARR	Specificity
NNT	PPV
Relative risk	NPV
Odds ratio (Case-control study)	LR

■ 文獻研究收集個案方式是否嚴謹，是否具有有效度 (Validity)？

■ 文獻統計方法是否正確，結果是否具有重要性 (Importance)？

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- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
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I

Diagnostic test	Disease	
	Present (有病)	Absent (沒病)
Positive	731 a	270 b
Negative	78 c	1500 d

Sensitivity (敏感度) 為**有病者**診斷結果為**陽性**的比率=真陽性率=真陽性 / 生病 = $a / a+c = 731/809 = 90\%$

Specificity (特異性) 為**沒病者**診斷結果為**陰性**的比率 $d/b+d =$ 真陰性率=真陰性 / 健康 = $d / b+d = 1500/1770 = 85\%$

■ 文獻統計方法是否正確，結果是否具有重要性 (Importance)？

■ 文獻是否適合應用在您病人身上？

EBM五步驟

- 提出問題 (Question formulation)
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I

Diagnostic test	Disease	
	Present (有病)	Absent (沒病)
Positive	731 a	270 b
Negative	78 c	1500 d

Positive Predictive Value, PPV (陽性預測值) 診斷試驗結果呈現**陽性且確實有病者**的比率=真陽性 / 陽性試驗結果 = $a / a+b = 731/1001 = 73\%$

Negative Predictive Value, NPV (陰性預測值) 診斷試驗結果呈**陰性且確實無患病者**的比率=真陰性 / 陰性試驗結果 = $d / c+d = 1500/1578 = 95\%$

■ 文獻研究收集個案方式是否嚴謹，是否具有有效度 (Validity)？

■ 文獻統計方法是否正確，結果是否具有重要性 (Importance)？

■ 文獻是否適合應用在您病人身上？

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
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 恰當運用 (Evidence application/evaluation)

Diagnostic test	Disease	
	Present(有病)	Absent(沒病)
Positive	73 ^a	270 ^b
Negative	7 ^c	1500 ^d

prevalence $a+c/a+b+c+d=31\%$

Likelihood Ratios (相似比)
 分子：疾病中診斷試驗(陽性或陰性)比率
 分母：無疾病中診斷試驗(陽性或陰性)比率

LR(+) **真陽性率 / 假陽性率** = Sensitivity / (1-Specificity) = $(a/a+c) / (b/b+d) = 90\%/15\% = 6$

LR(-) **假陰性率 / 真陰性率** = (1-Sensitivity) / Specificity = $(c/a+c) / (d/b+d) = 10\%/85\% = 0.12$

■ 文獻研究收集個案方式是否嚴謹，是否具有效度(Validity)?
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Likelihood Ratios (相似比) 數值所代表的臨床意義

Likelihood Ratio	Interpretation
>10	Strong evidence to rule in disease
5-10	Moderate evidence to rule in disease
2-5	Weak evidence to rule in disease
0.5-2.0	No significant change in the likelihood
0.2-0.5	Weak evidence to rule out disease
0.1-0.2	Moderate evidence to rule out disease
<0.1	Strong evidence to rule out disease

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EBM五步驟

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Treatment(Treatment Benefits)	Event	
	Positive	Negative
experimental -(RCT 或 Cohort studies)	A = 1	B = 29
control -(RCT 或 Cohort studies)	C = 9	D = 21

實驗組事件發生率 (EER, Experimental Event Rate) $a/a+b = 0.033$

對照組事件發生率 (CER, Control Event Rate) $c/c+d = 0.30$

相對風險比率差 (RRR, Relative Risk Reduction) $|EER - CER| / CER$ ，實驗組與對照組間產生的風險比率所降低的相對百分比
 $|0.033 - 0.3| / 0.3 = 0.267 / 0.3 = 0.89 = 89\%$

■ 文獻研究收集個案方式是否嚴謹，是否具有效度(Validity)?
 ■ 文獻統計方法是否正確，結果是否具有重要性(Importance)?
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EBM五步驟

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Treatment(Treatment Benefits)	Event	
	Positive	Negative
experimental -(RCT 或 Cohort studies)	A = 1	B = 29
control -(RCT 或 Cohort studies)	C = 9	D = 21

絕對風險比率差 (ARR, Absolute Risk Reduction) $|EER - CER| = |0.033 - 0.3| = 0.267$
 實驗組與對照組間不良結果機率差的絕對值，伴隨95%信賴區間(CI)

需要被治療的病人數目 (NNT, Number Needed to Treat) $1/ARR = 1/0.267 = 3.75$ ，為減少一個不良結果所需治療4病人，伴隨95%信賴區間(CI)

■ 文獻研究收集個案方式是否嚴謹，是否具有效度(Validity)?
 ■ 文獻統計方法是否正確，結果是否具有重要性(Importance)?
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EBM五步驟

EBM五步驟：
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 恰當運用 (Evidence application/evaluation)

Treatment(Treatment Harms)	Event	
	Positive	Negative
experimental -(RCT 或 Cohort studies)	A = 1	B = 29
control -(RCT 或 Cohort studies)	C = 9	D = 21

Relative risk (RR) 相對危險比 $EER/CER = (a/a+b)/(c/c+d) = 0.11$ ，接受治療病患相對未接受治療病患的不良事件風險，用於隨機對照試驗 (RCT) 與世代研究 (cohort study)

■ 文獻研究收集個案方式是否嚴謹，是否具有效度(Validity)?
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 恰當運用 (Evidence application/evaluation)

Treatment(Treatment Harms)	Event	
	Positive	Negative
Exposed (Case-control study)	A = 1	B = 29
Not exposed (Case-control study)	C = 9	D = 21

Experimental event Odds $a/b = 0.034$

Control event Odds $c/d = 0.43$

Odds ratio-勝算比 $(a/b)/(c/d) = ad/bc = 0.080$ ，通常被使用於個案對照研究之中。為試驗組中發生結果的勝算 (Odds) 與對照組中發生結果的勝算，此兩者間的比值就稱為勝算比 (OR)

■ 文獻研究收集個案方式是否嚴謹，是否具有效度(Validity)?
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I **EBM五步驟**

EBM五步驟：
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- 嚴格判讀 (Critical appraisal)-有深度判讀-CASP
- Systematic reviews之評讀

Q1. Did the review ask a clearly-focused question?
 Q2. Did the review include the right type of study?
 Q3. Did the reviewers try to identify all relevant studies?

■ 文獻研究收集個案方式是否嚴謹，是否具有效度 (Validity)?
 ■ 文獻統計方法是否正確，結果是否具有重要性 (Importance)?
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I **EBM五步驟**

EBM五步驟：
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- 嚴格判讀 (Critical appraisal)-有深度判讀
- Systematic reviews之評讀

Q4. Did the reviewers assess the quality of the included studies?
 Q5. If the results of the studies have been combined, was it reasonable to do so?
 Q6. How are the results presented and what is the main result?
 Q7. How precise are these results?

■ 文獻研究收集個案方式是否嚴謹，是否具有效度 (Validity)?
 ■ 文獻統計方法是否正確，結果是否具有重要性 (Importance)?
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- 嚴格判讀 (Critical appraisal)-有深度判讀
- Systematic reviews之評讀

Q8. Can the results be applied to the local population?
 Q9. Were all important outcomes considered?
 Q10. Should policy or practice change as a result of the evidence contained in this review?

■ 文獻研究收集個案方式是否嚴謹，是否具有效度 (Validity)?
 ■ 文獻統計方法是否正確，結果是否具有重要性 (Importance)?
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P **EBM五步驟**

EBM五步驟：
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 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

- 嚴格判讀 (Critical appraisal)
- P (Practice/Applicability) **臨床適用性**。

如果我們相信這個研究，它的結果**是否可以應用**在我們的**病患身上**？”其中要考量的是病患的差異、可運用的資源以及病患的偏好。在這個部份我們可以考量病患的生物因素 (biologic issues) 即是”同樣的治療應用在**不同的病患族群**是否有不同的反應？”

■ 文獻研究收集個案方式是否嚴謹，是否具有效度 (Validity)?
 ■ 文獻統計方法是否正確，結果是否具有重要性 (Importance)?
 ■ 文獻是否適合應用在您病人身上?

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
 搜尋證據 (Evidence search)
 嚴格判讀 (Critical appraisal)
 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

- 恰當運用 (Evidence application)

■ **Evidence is never enough**
 證據，永遠是不足的

■ Can the results be applied to my patient?
 -有效且重要的證據**能實際應用**到我照顧的**病人**身上嗎？

■ **Evidence Applicability** -證據適用性

■ 實際應用到你的病人
 ■ 將證據“外推”應用於個案？
 ■ 個案自己的價值觀與喜好？

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- 恰當運用 (Evidence application)

■ 病人與研究文獻所收錄的病人，有無明顯差異？
 - 研究族群為**60-70歲**有效，但是你的病人為**40歲**

■ 評估病人接受與研究文獻所施行**相同的治療** (或處置)，所得**益處** (及害處) 將有多大？
 - 應用到您的個案前，需先藉此**修正文獻結果**
 - 單位或是你自己**是否有能力 (資源) 施行相同的治療** (或處置)？執行品質為何？

■ 實際應用到你的病人
 ■ 將證據“外推”應用於個案？
 ■ 個案自己的價值觀與喜好？

EBM五步驟

EBM五步驟：
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 恰當運用 (Evidence application)
 評估結果 (Outcome evaluation)

- 恰當運用 (Evidence application)
 - 是否清楚與個案 (及家屬) 說明溝通 ?
 - 個案對治療 (或處置) 的 遵從性 ?
 - 實際 追蹤 你的個案的 成果 (outcome)

實際應用到你的病人
 將證據“外推”應用於個案？
 個案自己的價值觀與喜好？

EBM五步驟

EBM五步驟：
 提出問題 (Question formulation)
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 評估結果 (Outcome evaluation)

- 評估結果 (Outcome evaluation)
 - Self - Evaluation (自我評估)
 - 所遇到的臨床問題是 可以回答 的嗎？
 - 搜尋文獻及評讀證據的 速度夠快 嗎？
 - 這些證據應用在 適當 的臨床病人嗎
 - Evaluation (Audit) by Expert or peer
- 專家監督或同儕彼此評估

參考文獻

1. 楊培銘：實證醫學與健康照護。臺灣醫學 2004; 8: 862-4。
2. 陳杰峰、蔡宛真、邱文達：實證醫學於健康照護之應用。臺灣醫學 2004; 8: 235-40。
3. Sackett DL, Rosenberg WM, Gray JA, et al: Evidence based medicine: what it is and what it isn't. BMJ 1996; 312: 71-2.
4. Levels of evidence. Oxford Centre for Evidence-Based Medicine. Web site. http://www.cebm.net/levels_of_evidence.asp. Accessed Sep 01, 2008.

參考文獻

5. 林愉珊：實證醫學相關資料庫檢索策略之探討。臺灣醫學 2003; 7: 568-74。
2. 陳杰峰、蔡宛真、邱文達：實證醫學於健康照護之應用。臺灣醫學，2004; 8: 235-40。
6. Straus SE, Sackett DL: Using research findings in clinical practice. BMJ 1998; 317: 339-42.
7. Staunton M: Evidence-based radiology: steps 1 and 2-asking answerable questions and searching for evidence. Radiology, 2007; 242: 23-31.

參考文獻

8. Barratt A, Wyer PC, Hatala R, et al: Tips for learners of evidence-based medicine: Relative risk reduction, absolute risk reduction and number needed to treat. CMAJ. 2004; 171: 353-8.
9. Haynes RB: Of studies, syntheses, synopses, summaries, and systems: the "5S" evolution of information services for evidence-based healthcare decisions. Evid Based Med 2006; 11: 162-4.

Thank's for your attention

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Evidence-Based Medicine

科別：影像醫學科

報告人：蘇逸欣

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日期：105.06.18

Outline

- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
- 嚴格判讀 (Critical appraisal)
- 恰當運用 (Evidence application)
- 評估結果 (Outcome evaluation)

Question formulation

◆ Scenario(臨床情境)

臉部外傷病人，因被懷疑 zygomatic arch fracture，而執行 一般X光檢查，有時因病人某些特殊狀況，如

➡ 嬰幼兒發育未完全 ➡ 病人躁動無法配合

➡ 病人佩帶頸圈 ➡ 病人無法使頭轉正

造成檢查影像無法完整判斷 zygoma 有無 fracture，在 不做CT 的情況下，想要知道使用 ultrasound 診斷的可行性

3

Question formulation

◆ Ask(形成問題)

病人被懷疑 zygomatic arch fracture，是否可使用 ultrasound 代替 一般X-ray 的檢查，並提供足夠的 診斷準確率 並 減低輻射劑量？

This is a diagnostic problem

4

Question formulation

◆ PICO

P Patient/Problem	R/O zygomatic arch fracture
I Intervention	Ultrasound examination
C Comparison	Routine X-ray examination
O Outcome	Diagnostic accuracy

5

Outline

- 提出問題 (Question formulation)
- **搜尋證據 (Evidence search)**
- 嚴格判讀 (Critical appraisal)
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- 評估結果 (Outcome evaluation)

Evidence search

◆ Database source(資料庫資源)

PubMed (www.ncbi.nlm.nih.gov/pubmed)

ClinicalKey (<https://www.clinicalkey.com/>)

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Evidence search

◆ Search key word(搜尋關鍵字)

➤ diagnosis

➤ sonography

➤ zygomatic arch fracture

8

Evidence search

◆ Search result(搜尋結果)

➤ PubMed search

Key word :

Diagnosis and sonography and zygomatic fracture

→ 17篇

Article Type :

Systematic Reviews → 2篇

Search time :

103.10.10

9

Evidence search

◆ Search result(搜尋結果)

➤ ClinicalKey search

Key word :

Diagnosis , sonography , zygomatic arch fracture

→ 1965篇

Study Type :

Systematic reviews → 3篇

Search time :

103.10.10

10

Outline

- 提出問題 (Question formulation)
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Critical appraisal

◆ Papers appraised(評審文獻)

◎ 篇名 :

A systematic review of the diagnostic role of ultrasonography in maxillofacial fractures

W. L. Adeyemo, O. A. Akadiri: A systematic review of the diagnostic role of ultrasonography in maxillofacial fractures. Int. J. Oral Maxillofac. Surg. 2011; 40: 655-661.

◎ 文獻等級 :

Systematic reviews + Randomized controlled trial

→ Level 1

12

Critical appraisal

V

◆ Materials and methods :

Step 1 :

搜尋 systematic reviews (系統性回顧) 和 meta-analyse (統合分析) 的文獻 - Cochrane Library

Step 2 :

運用多種資料庫，以 ultrasound and maxillofacial fractures 的相關關鍵字，運用布林(Boolean)運算子 'and' 交互搜尋，縮小範圍 - MEDLINE, PubMed and GoogleMed databases

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Critical appraisal

V

◆ Materials and methods :

Step 3 : 手動搜尋滿足兩個條件

1. 運用 CT or conventional radiography or intraoperative findings 等方法跟 ultrasonography 比較
2. 運用 sensitivity and specificity 等統計方法來呈現結果

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Critical appraisal

!

◆ Summary-Patients :

→ maxillofacial fractures

→ midfacial fractures

→ zygomatic complex fractures

→ nasal bone fractures

→ orbital fractures

→ mandibular fractures

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Critical appraisal

!

◆ Summary-Intervention :

→ ultrasound

◆ Summary-Comparison :

→ CT or conventional radiography

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Critical appraisal

!

◆ Summary-Outcome :

Specificity : 100%

Sensitivity : 94%

Limits :

→ Detailed bony imaging may be precluded in acute situations with extensive facial oedema, and emphysema

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Critical appraisal

P

◆ Summary-Conclusion :

※ The use of diagnostic ultrasonography in zygomatic arch fractures has been well investigated and it is found very accurate in all cases of displaced arch fractures.

※ Ultrasonography may not be sufficient to diagnose complex maxillofacial fractures, such as multiple or pan facial fractures, and the use of CT in such cases is obligatory.

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Outline

- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
- 嚴格判讀 (Critical appraisal)
- **恰當運用 (Evidence application)**
- 評估結果 (Outcome evaluation)

Evidence application

◆ 回答臨床問題：

顱骨弓骨折可以使用超音波診斷，有94%的敏感度和100%的特異度，如果診斷後發現有骨折，幾乎能**確定有骨折**，即可以不進行一般X光的檢查，減少輻射的曝露，但如果發現沒有，卻仍然懷疑有骨折的可能，就建議使用一般X光或電腦斷層檢查來做更進一步的確認。

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Evidence application

◆ 優缺點：

•優點：

- 1.可**減少該類病患醫療輻射曝露**，尤其針對**嬰幼兒**、**懷孕婦女**等，需減低或不可接受輻射曝露之患者
- 2.超音波檢查**時間較短、便利性高且成本低**
- 3.對於**躁動病患與繫帶頸圍的頸椎骨折患者**，相較於一般X光檢查，超音波可提供較好的診斷價值

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Evidence application

◆ 優缺點：

•缺點：

- 1.有**偽陰性**的狀況存在
- 2.只能針對僅顱骨弓骨折的**少數群體**
- 3.超音波影像**解析度較差**
- 4.受操作者的**經驗與技術**影響其成像與診斷
- 5.需壓迫病患傷處，可能造成**病人不適感提升**

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Evidence application

◆ 醫療建議：

針對僅懷疑zygomatic arch fracture的病患，可使用ultrasound做為初步的診斷工具，如無法確認，再進行routine X-ray或CT等更高階的檢查，以合理抑低病患醫療輻射劑量，並提高檢查成功率和診斷準確性

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Outline

- 提出問題 (Question formulation)
- 搜尋證據 (Evidence search)
- 嚴格判讀 (Critical appraisal)
- 恰當運用 (Evidence application)
- **評估結果 (Outcome evaluation)**

Outcome evaluation

◆ 本篇EBM的自我評估：

•優點：

- 1.列出**正確的PICO**，訂定良好的**搜尋策略**，很快的縮減搜尋的結果，並找到需要的文獻
- 2.找到符合問題的**系統性回顧**文獻，作者運用嚴密的篩選，是可評為**level 1**的文獻內容
- 3.文獻運用**良好的統計**呈現出結果，並給出能回答問題的結論
- 4.可以回答臨床問題，並**可應用在臨床**適當的病人身上

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Outcome evaluation

◆ 本篇EBM的自我評估：

•缺點：

文獻中共有17篇回顧性文章，但只有**其中1篇**的結果可回答此臨床問題，其餘16篇為其它面部骨折部位的統計與結果

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Thanks for your attention

