# 藥物毒物一把抓(二): Lexi-Comp藥學資料庫

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資料庫為輔助醫療人員決策之用,應用時應綜合各文獻內容(包含**仿單.Lexicomp, Micromedex**等)及臨床判斷,以求問全。



#### **Outline**

- 什麼是 Lexicomp®
- 在 Lexicomp® Online™ 瀏覽與檢索
- 範例與討論



# 什麼是 Lexicomp®



#### Wolters Kluwer Health

- 屬於成立於 1836 年的荷蘭 Wolters Kluwer 集團
- 旗下品牌包含





Ovid



Facts & Comparisons®





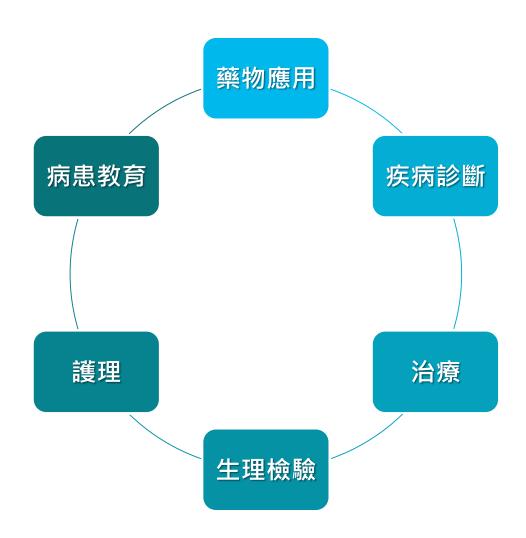
ProVation® Medical



Medi-Span®



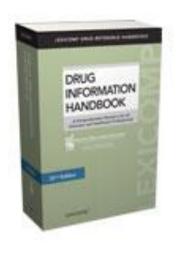
# Lexicomp® 的應用範圍





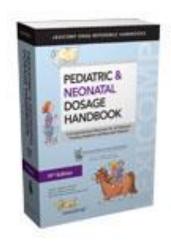
# Lexicomp® 的源起

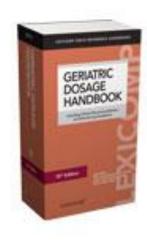
- 成立已逾 30 年的藥品與臨床醫學資訊出版公司
- 出版超過 30 本的專業藥學參考書
- 全球多達兩百人的團隊\* (醫、藥、護及資訊人員)
- 24/7 維護資料內容









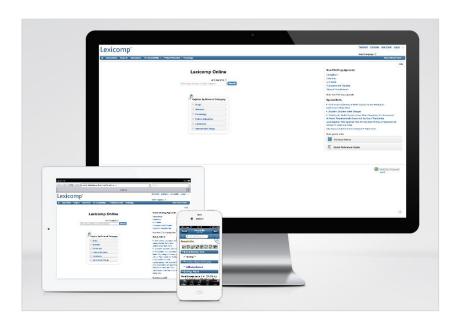




<sup>\*</sup> Clinical Team of Wolters Kluwer Health. From <a href="http://www.lexi.com/home/wk-health-clinical-solutions/clinical-team/">http://www.lexi.com/home/wk-health-clinical-solutions/clinical-team/</a>

## Lexicomp® 資料庫的優勢

- 提供多個資料來源
  - Lexicomp<sup>®</sup>
  - Facts & Comparisons®
  - AHFS®
- 基本版即包含所有模組
- 全球專業團隊每日更新
- 精簡、關鍵、快速、能解決臨床問題的資源

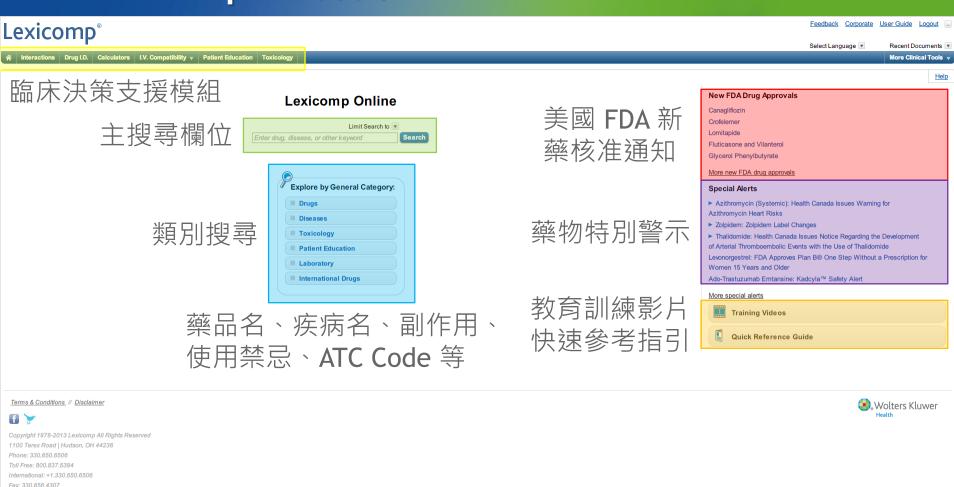




# 資料庫簡介



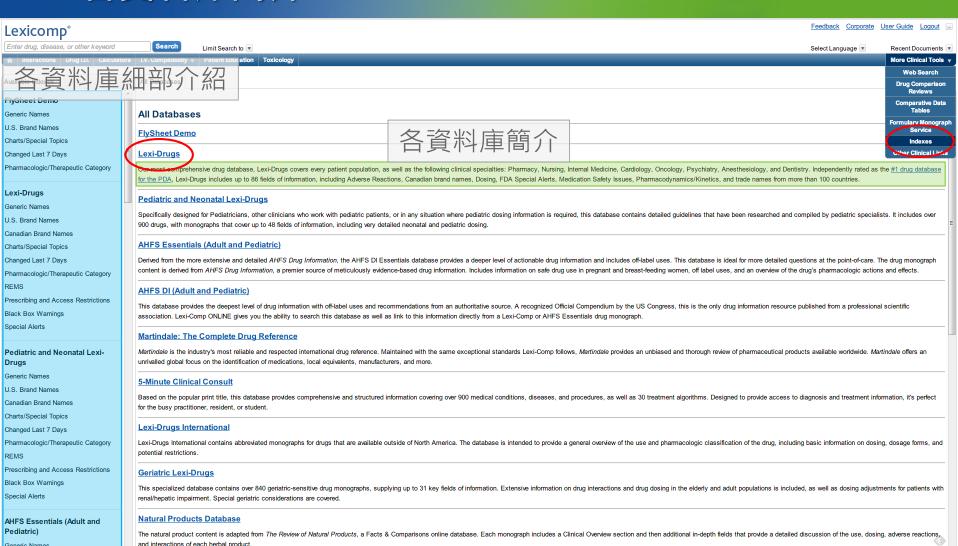
# Lexicomp® 主介面





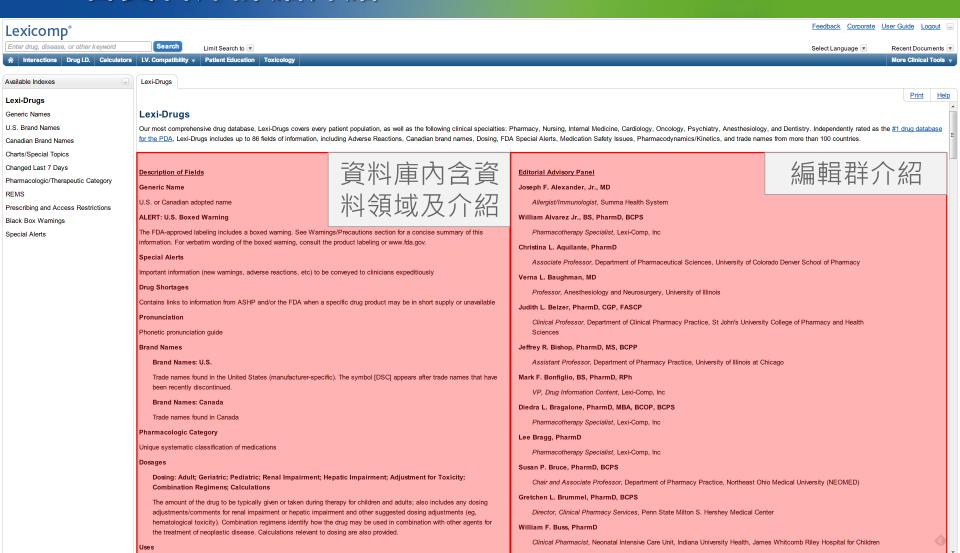
#### 各資料庫簡介

online.lexi.com/lco/action/index/type/all





#### 各資料庫詳細介紹





#### 資料庫內容

- Lexi-Drugs
- Pediatric and Neonatal Lexi-Drugs
- AHFS Essentials
- AHFS DI
- Martindale
- 5-Minute Clinical Consult
- Lexi-Drugs International
- Geriatric Lexi-Drugs
- Natural Products Database
- Pharmacogenomics
- Infectious Diseases
- Lab Test and Diagnostic Procedures

- Lexi-Patient Education Disease and Procedures (Multi Language)
- Lexi-Patient Education Adult Medications (Multi Language\*, Chinese)
- Lexi-Patient Education Pediatric
   Medications (Multi Language\*, Chinese)
- Lexi-Tox
- Drug Allergy and Idiosyncratic Reactions
- Pregnancy and Lactation, In-Depth
- Lexi-Interact
- US Drug Images
- IV Compatibility -King Guide

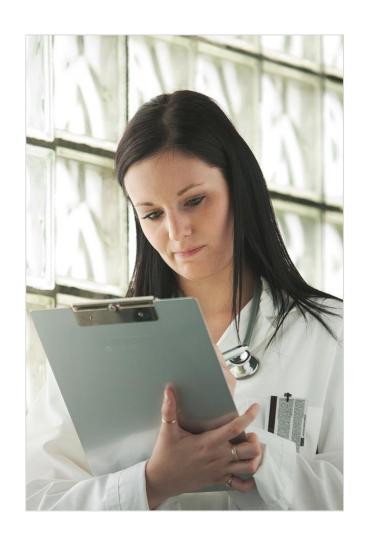


# 範例與討論



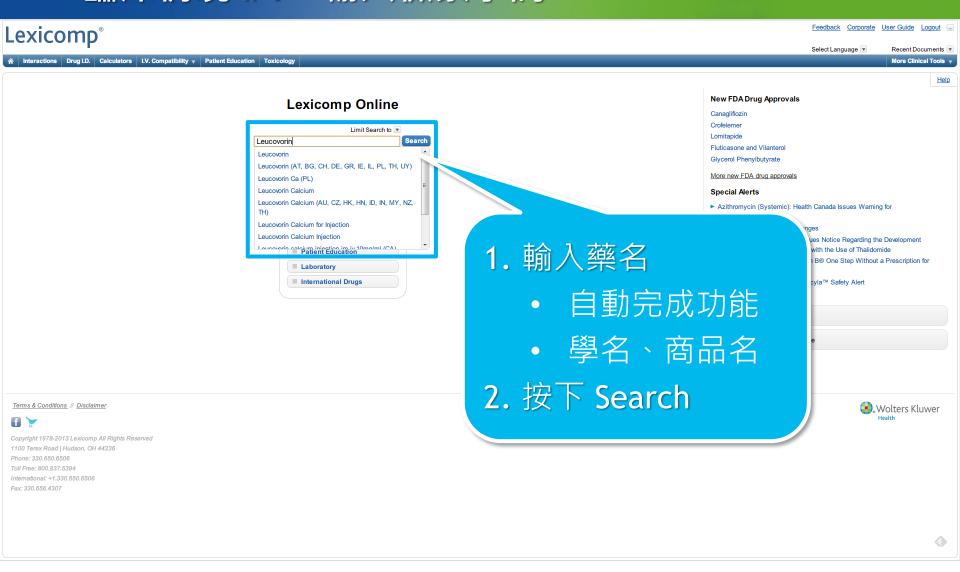
#### 臨床情境 #1 - 問題產生

 現在要開立 FOLFOX4
 (Oxaliplatin + 5-FU +
 Leucovorin) 給大陽直 陽癌病患,卻發現 Leucovorin 缺藥,請 問有替代藥品或其他 處理方式嗎?





### 臨床情境 #1 - 輸入檢索字詞



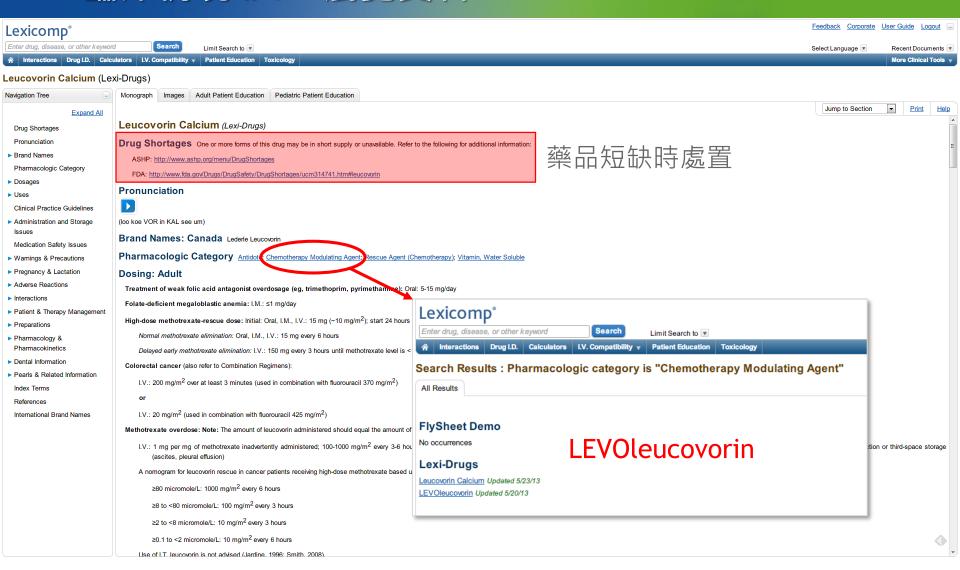


### 臨床情境 #1 - 選擇資料庫





#### 臨床情境 #1 - 瀏覽資料





### 臨床情境 #1 - 尋找答案

#### Alternative Agents & Management

#### ASHP 建議作法

- Reserve folinic acid products (racemic leucovorin, <u>levoleucovorin [Fusilev]</u>) for oncology patients receiving chemotherapy and patients with inadvertent folic acid antagonist overdose.<sup>10–12</sup>
- Folic acid is not an alternative for oncology uses or for folic acid antagonist overdose. Use folic acid for patients with megaloblastic anemias due to folic acid deficiency.<sup>13</sup>
- Reserve injectable folinic acid products for use in patients with colorectal cancer receiving combination therapy with fluorouracil. 10-12 Oral therapy has been evaluated in this setting, 17 but may be less practical because of the large number of tablets required. Consider use of lower-dose injectable folinic acid regimens in patients with colorectal cancer when possible. 18,19 If folinic acid injectable products are not available, treatment with fluorouracil alone may be considered and may allow for use of slightly higher fluorouracil doses (~10%) in patients with colorectal cancer as tolerated. 18,19
- Use oral leucovorin whenever possible for methotrexate rescue in osteogenic sarcoma, to reduce toxicity in patients with impaired methotrexate elimination, and to reduce toxicity after inadvertent folic acid antagonist overdose. However, injectable folinic acid products may be necessary when oral therapy is not an option in these patients (e.g., swallowing difficulty, gastrointestinal absorption problems).<sup>10-12</sup>
- The Table lists potential alternatives for folinic acid products.



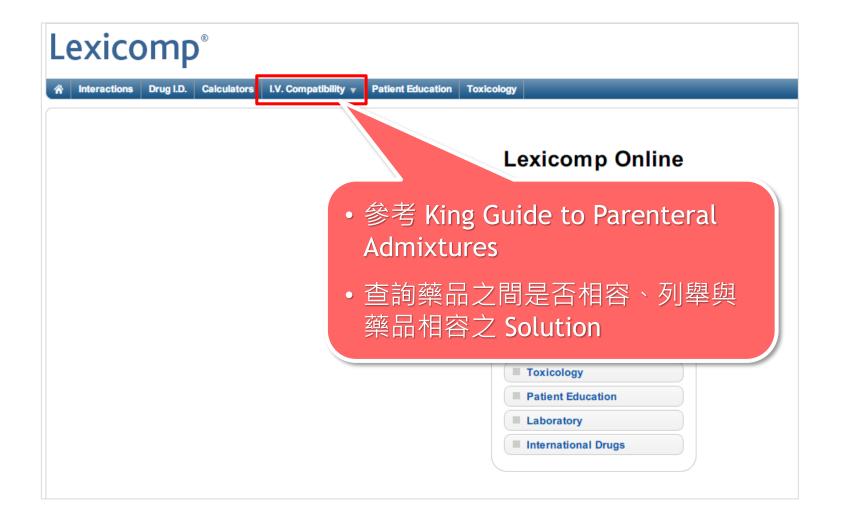
#### 臨床情境 #2 - 問題產生

- 王爺爺, 75 歲、165 cm / 65 kg, 懷疑人工關節 感染。
- 醫師開立 Daptomycin (Cubicin®) 來控制感染情形。查房時護理師詢問 Daptomycin 可否用 D5W 稀釋給藥?此外,病人還有使用抗生素 Ertapenem (Invanz®),這兩種抗生素是否可以同時滴注?



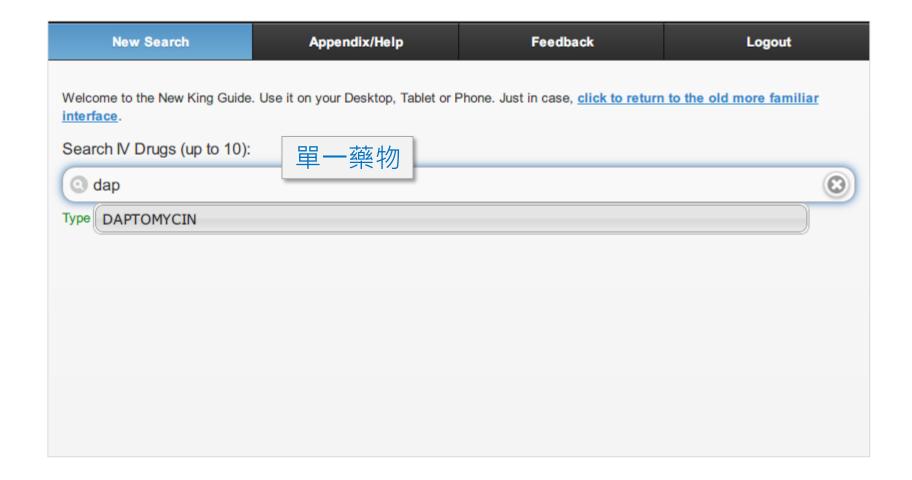


#### 臨床情境 #2 - 選擇檢索工具

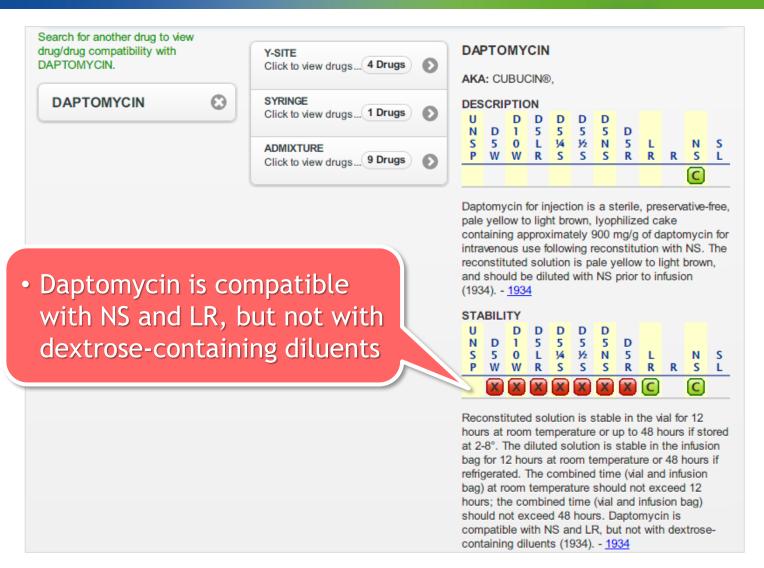




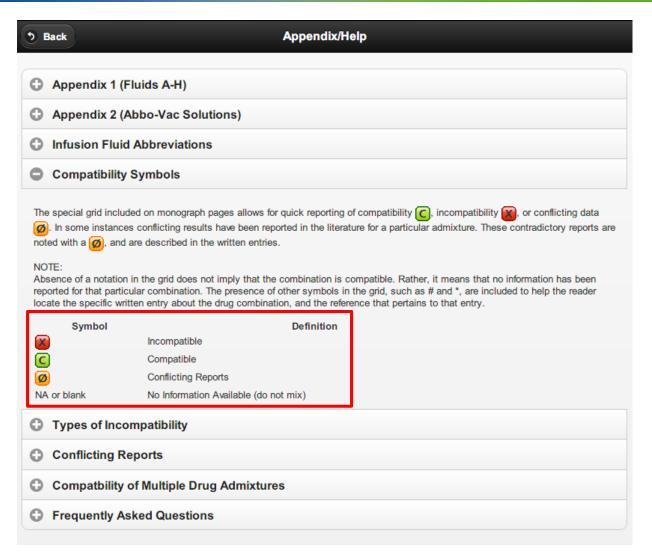
### 臨床情境 #2 - 輸入檢索字詞



#### 臨床情境 #2 - 尋找答案

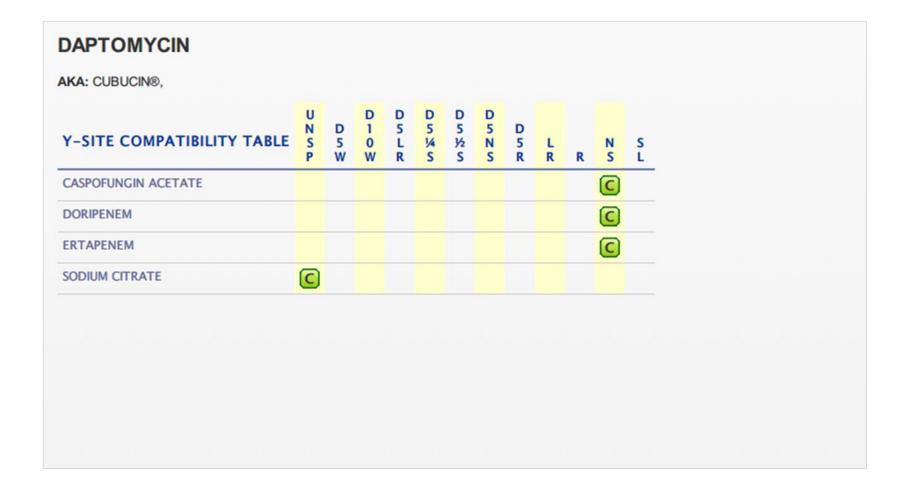


### 臨床情境 #2 - 圖示說明

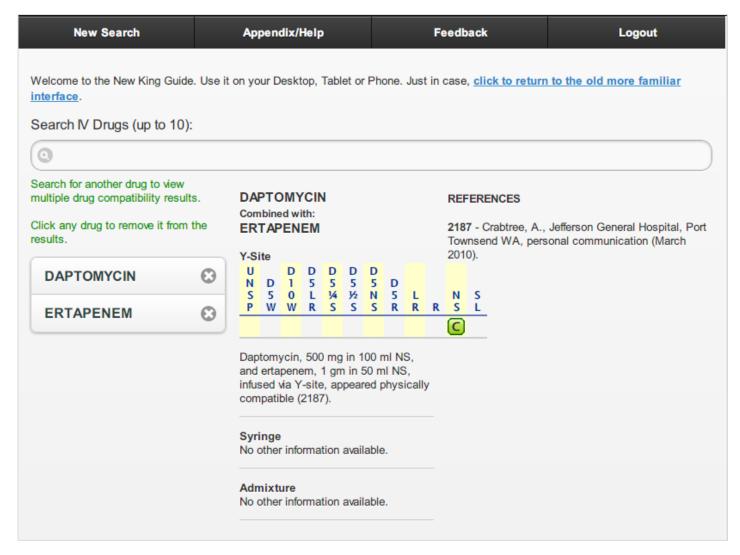




## 臨床情境 #2 - Y-Site 相容表

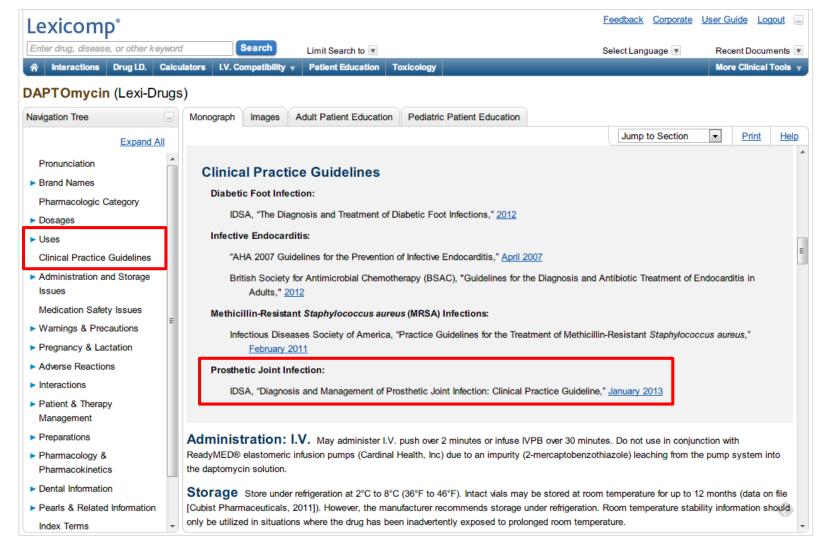


## 臨床情境 #2 - 兩種以上藥物混合





#### 臨床情境 #2 - 參考文獻





#### 臨床情境#3-產生問題

 林伯伯,60歲,過去病史為急性 骨髓性白血病,因感染及呼吸衰竭 而住進內科加護病房。護理師詢問 是否要調整給藥?



### • 目前給藥:

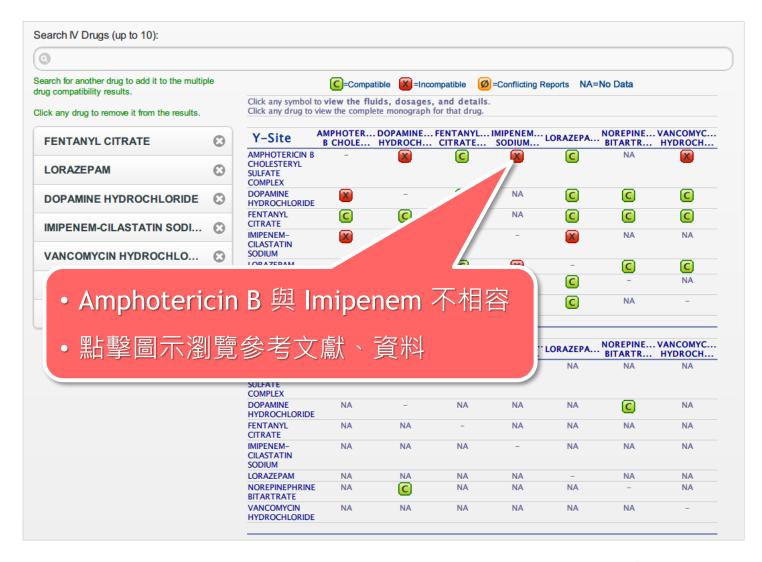
Fentanyl (cIF), Lorazepam (cIF), Norepinephrine (cIF), Dopamine (cIF), Imipenem/Cilastatin (IF), Vancomycin (IF), Amphotericin B (IF)

#### IV Sets:

- 3 way Central Venous Catheter x 1 + Cath x 1

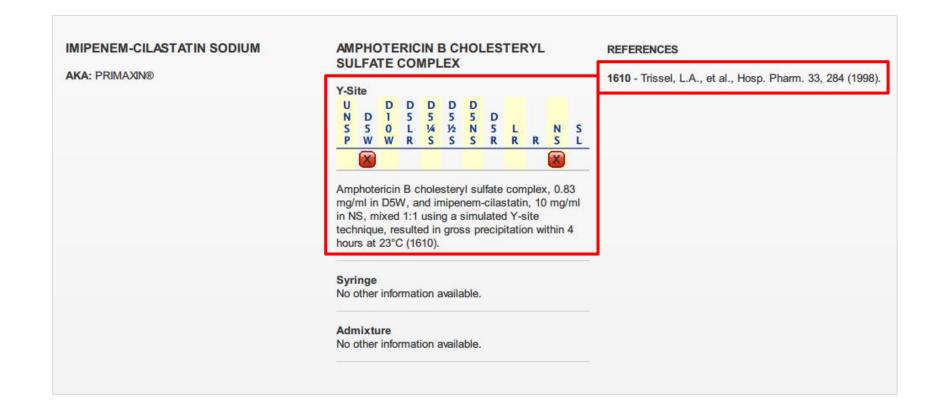


#### 臨床情境 #3 - 兩種以上藥物混合





### 臨床情境#3-參考文獻



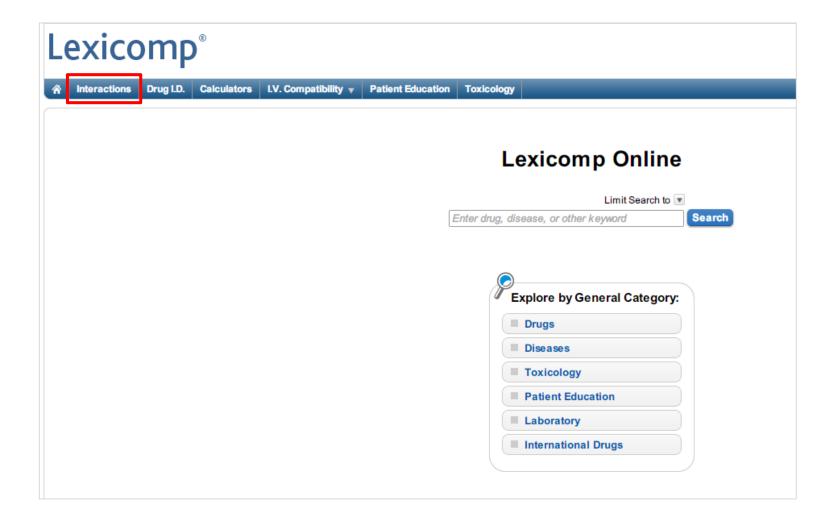


#### 臨床情境 #4 - 產生問題

- 翁先生,有癲癇的病史,長期使用抗癲癇藥物 Valproic Acid,控制良好 (Valproic Acid level = 50mg/L)。
- 此次因嚴重感染而插管進入加護病房,並使用 Meropenem 來控制感染,入住的隔天發生新的 癲癇, Valproic Acid level = 5mg/L。
- 會是什麼原因導致 Valproic Acid 濃度降低?

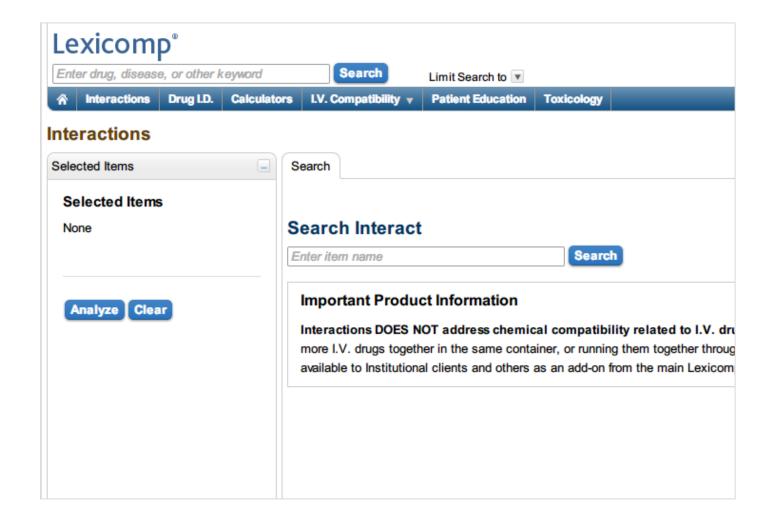


## 臨床情境 #4 - 選擇檢索工具



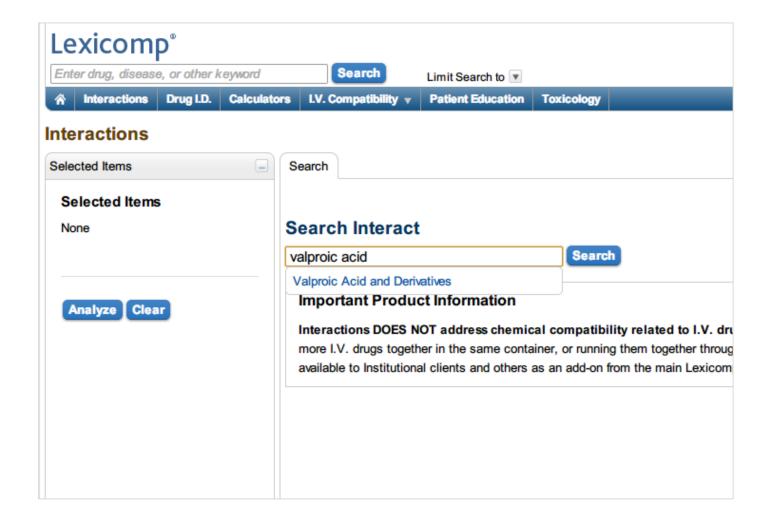


### 臨床情境 #4 - 輸入檢索字詞



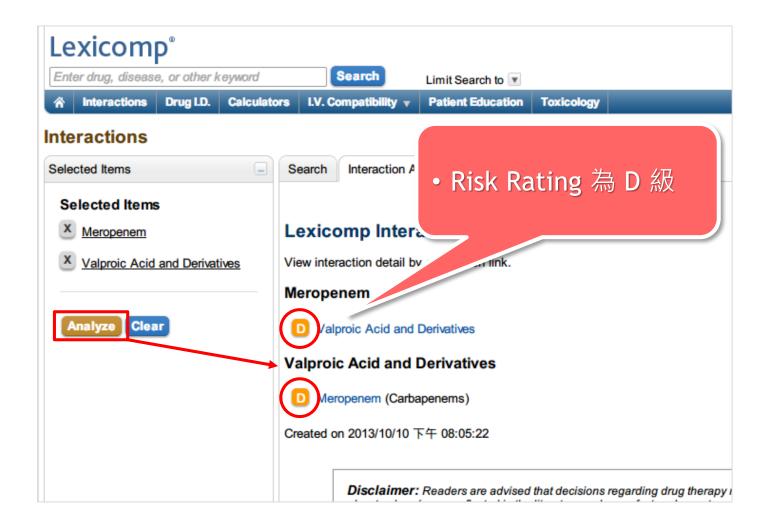


### 臨床情境 #4 - 輸入檢索字詞





### 臨床情境 #4 - 藥物交互作用比對結果



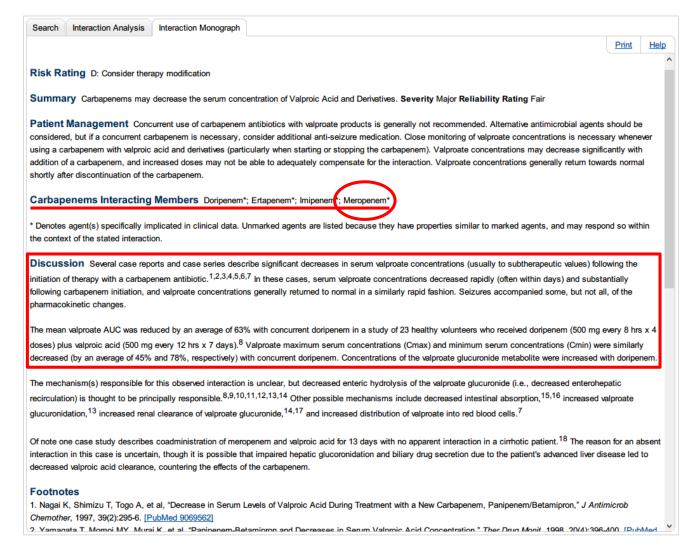


# 臨床情境 #4 - Risk Rating 參考表

Risk Rating	Action	Description
A	No Known Interaction	Data have not demonstrated either pharmacodynamic or pharmacokinetic interactions between the specified agents
В	No Action Needed	Data demonstrate that the specified agents may interact with each other, but there is little to no evidence of clinical concern resulting from their concomitant use.
C	Monitor Therapy	Data demonstrate that the specified agents may interact with each other in a clinically significant manner. The benefits of concomitant use of these two medications usually outweigh the risks. An appropriate monitoring plan should be implemented to identify potential negative effects. Dosage adjustments of one or both agents may be needed in a minority of patients.
D	Consider Therapy Modification	Data demonstrate that the two medications may interact with each other in a clinically significant manner. A patient-specific assessment must be conducted to determine whether the benefits of concomitant therapy outweigh the risks. Specific actions must be taken in order to realize the benefits and/or minimize the toxicity resulting from concomitant use of the agents. These actions may include aggressive monitoring, empiric dosage changes, choosing alternative agents.
x	Avoid Combination	Data demonstrate that the specified agents may interact with each other in a clinically significant manner. The risks associated with concomitant use of these agents usually outweigh the benefits. These agents are generally considered contraindicated.



### 臨床情境 #4 - 參考檢索結果

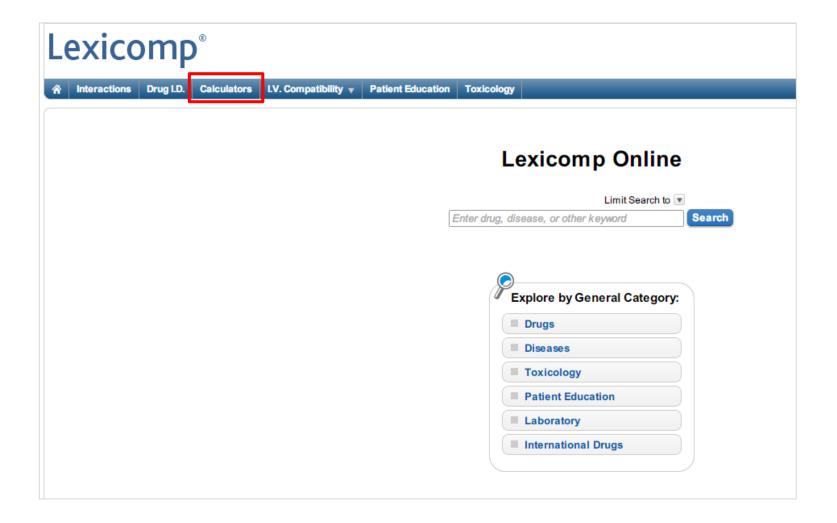




#### 臨床情境 #5 - 產生問題

- 陳爺爺, 80 歲, 170 cm / 75 kg, Cr 0.8 mg/dl, 懷疑為院內肺炎感染。
- 醫師想開立 Imipenem 和 Amikacin 經驗性使用, 來電詢問 Amikacin 之使用劑量?

# 臨床情境 #5 - 選擇檢索工具





#### 臨床情境 #5 - 常用計算工具

- Absolute Neutrophil Count
- Apgar Score
- Calcium Correction in Hypoalbuminemia
- CHA<sub>2</sub>DS<sub>2</sub>-VASc Score
- Child Pugh Classification
- Creatinine Clearance by Cockcroft-Gault
- Glomerular Filtration Rate by MDRD
- Glomerular Filtration Rate by Schwartz (兒童劑量)
- HAS-BLED Bleeding Risk Score
- TIMI Risk Score (STEMI)

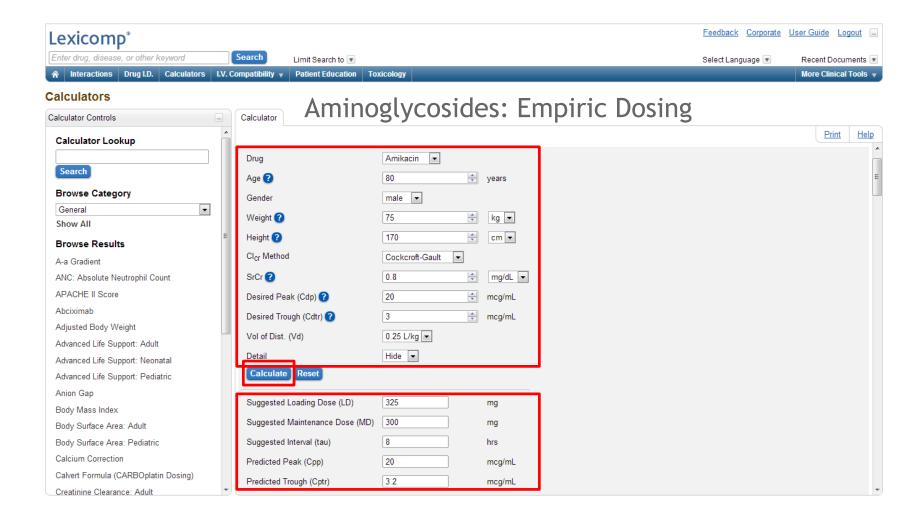


### 臨床情境 #5 - 選擇計算工具





# 臨床情境 #5 - 輸入計算值



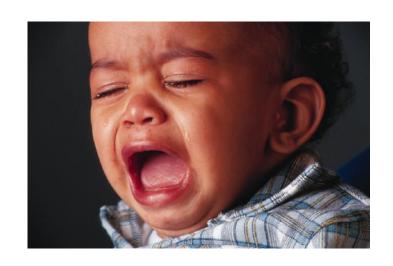


#### 臨床情境 #6 - 產生問題

- 邱小弟,4 歲,Acute Lymphoblastic Leukemia, Precursor T-cell Type, VHR。
- 自 4/25 晚上起開始說不出話,當想說話時只能大哭,這跟他的藥品使用有相關嗎?

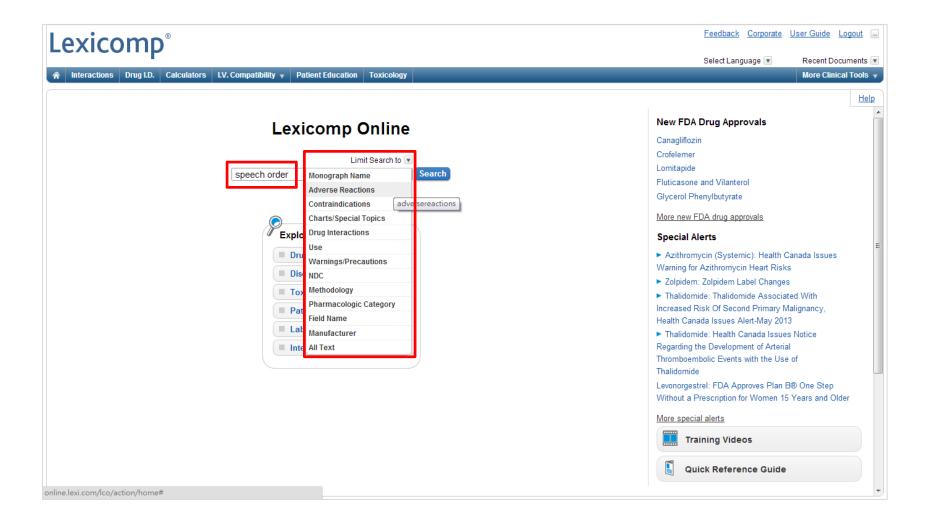
#### 用藥

- Etoposide 61 mg IVA on 4/15 4/19
- Cylophosphamide 268 mg IVA on 4/15 4/19
- Nelarabine 394 mg IVA on 4/24 4/28
- Allopurinol 0.5 tab bid on 4/14 4/28
- Ciprofloxacin 0.5 tab qd on 4/15 4/22



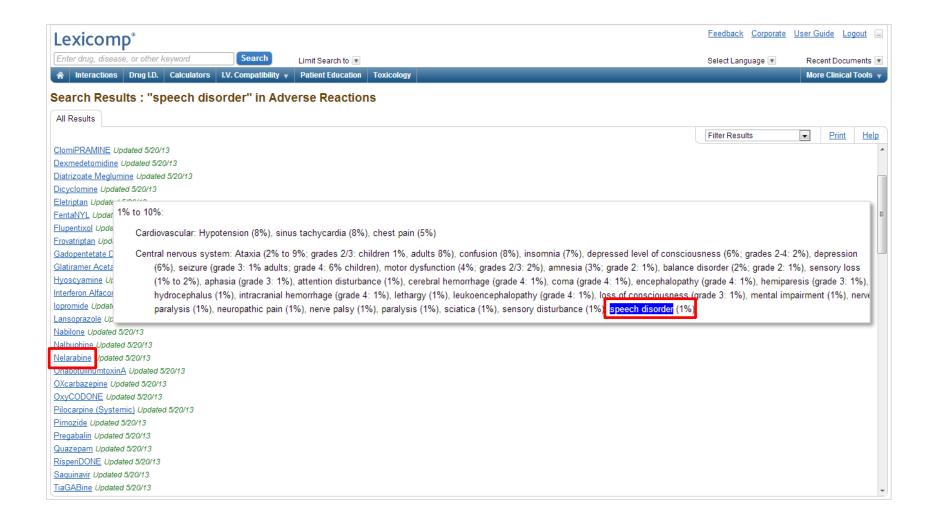


# 臨床情境 #6 - 輸入檢索字詞並限制條件





#### 臨床情境 #6 - 尋找答案





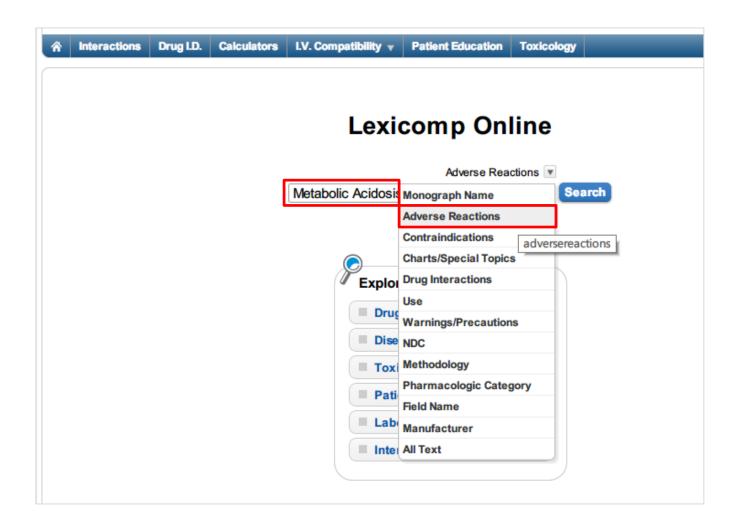
#### 臨床情境 #7 - 產生問題

- 呂爺爺,75歳,有顱內出血病史,長期使用 Valproic Acid、Topiramate、Acetazolamide等 藥物控制。
- 此次因呼吸衰竭而插管住院,實驗室檢查發現病人有代謝性酸中毒(Metabolic Acidosis)現象,排除其他常見原因後懷疑是藥物引起,醫師詢問可能是何種藥物?





# 臨床情境 #7 - 輸入檢索字詞並限制條件





#### 臨床情境 #7 - 尋找答案



Adverse Reactions Adverse events are reported for placebo-controlled trials of adjunctive therapy in adult and pediatric patients. Unless otherwise noted, the percentages refer to incidence in epilepsy trials. Note: A wide range of dosages were studied; incidence of adverse events was frequently lower in the pediatric population studied.

>10%:

Central nervous system: Somnolence (15% to 29%), dizziness (4% to 25%; dose dependent), fatigue (9% to 16%; dose-dependent), nervousness (9% to 18%), ataxia (6% to 16%), psychomotor slowing (3% to 13%; dose dependent), speech problems (2% to 13%), memory difficulties (2% to 12%), behavior problems (children 11%), confusion (4% to 11%)

Endocrine & metabolic: Serum bicarbonate decreased (dose related: 7% to 67%; marked reductions [to <17 mEq/L] 1% to 11%)

Gastrointestinal: Anorexia (4% to 24%; dose dependent), nausea (6% to 10%; migraine trial: 9% to 14%)

Neuromuscular & skeletal: Paresthesia (1% to 11%; migraine trial: 35% to 51%)

Ocular: Abnormal vision (2% to 13%)

Respiratory: Upper respiratory infection (migraine trial: 12% to 14%)

Miscellaneous: Injury (14%)

Teniposide Updated 10/4/13

Tinzaparin Updated 10/7/13

Topiramate Updated 10/7/13

Total Parenteral Nutrition Updated 8/19/13

Zonisamide Updated 10/4/13



#### 臨床情境 #8 - 產生問題

• 47 歲的柯小姐患有精神分裂症,此次因吞服約 100 顆 Norvasc® (AmLODIPine) 企圖自殺而住進加護病房觀察。此時該如何處理 Calcium Channel Blocker 中毒?



# 臨床情境 #8 - 輸入檢索字詞





### 臨床情境 #8 - 參考臨床指引

#### Lexicomp<sup>®</sup>

**Treatment: Stabilization** Initially evaluate and correct immediate life-threatening complications (eg, airway, breathing, and circulation). The most common serious complications are hypotension and bradycardia. Laryngoscopy may induce a vagal response; may administer atropine prior to intubation.

Treatment: Decontamination Ingestion: If the patient presents within 1 hour of ingestion, consider the following decontamination procedure(s):

- Gastric lavage: In rare situations when gastric lavage is deemed appropriate, it is most effective if initiated within 1 hour of the ingestion; however, gastric lavage has not
  been proven to be beneficial and is not routinely recommended due to the risk of complications and the lack of demonstrated efficacy. Use is contraindicated in a
  patient with an unprotected airway, in a patient in whom its use increases the risk and severity of aspiration, and in a patient who is at risk of hemorrhage or
  gastrointestinal perforation due to pathology (Benson, 2013; Vale, 2004).
- Single-dose activated charcoal: Use may be considered in a patient who presents within 1 hour of the ingestion (Chyka, 2005). Use is contraindicated in a patient who
  has a diminished level of consciousness unless the airway is protected.

Activated charcoal in water: Single dose: Oral or NG:

Infants <1 year: 10-25 g; Note: Although dosing by body weight is reported in children (0.5-1 g/kg) and published in many resources, there are no data or scientific rationale to support this recommendation (Chyka, 2005).

Infants and Children 1-12 years: 25-50 g
Children >12 years and Adults: 25-100 g

Calcium Channel Blockers - Comparative Pharmacokinetics Updated 7/31/13

#### Lexi-Tox

Calcium Channel Blockers Updated 10/2/13

#### **Drug Allergy and Idiosyncratic Reactions**

Calcium Channel Blocker, Dihydropyridine Allergy



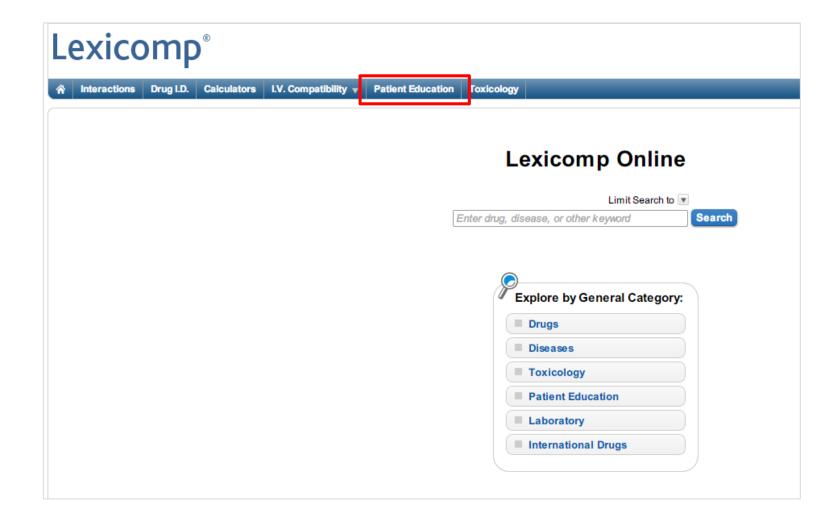
### 臨床情境 #9 - 產生問題

- 李先生,65 歲,新診斷為肺腺癌,EGFR (-),且 有縱隔腔淋巴結轉移和肋骨轉移的情形,屬 Stage IV。
- 此次住院準備接受第一次的化學 治療 (Alimta® + Carboplatin®), 藥師接到醫師開立的住院首次化 療用藥指導單,準備對李先生進 行用藥衛教。



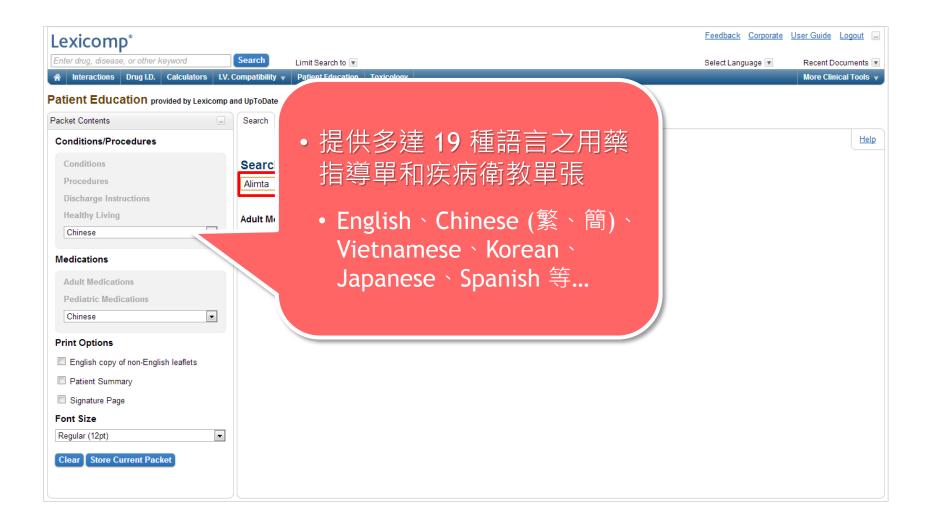


# 臨床情境 #9 - 選擇檢索工具



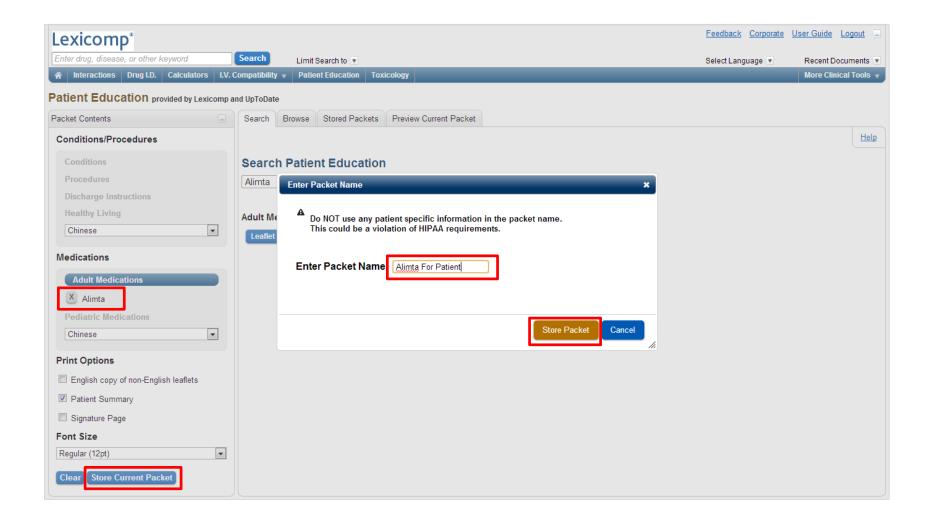


#### 臨床情境 #9 - 輸入檢索字詞



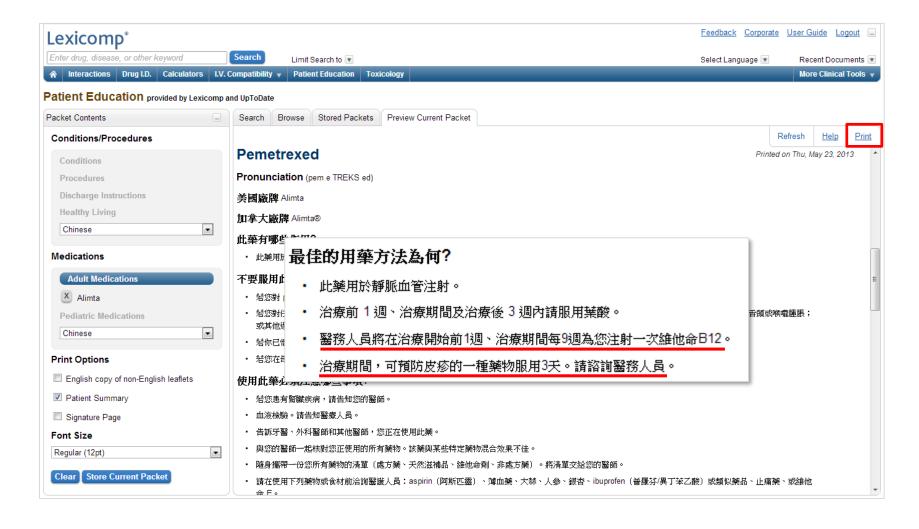


# 臨床情境 #9 - 選擇單張內容並儲存





### 臨床情境 #9 - 預覽內容並列印





# **Q&A**

業務專員 陳永祥 tesochen@flysheet.com.tw



資料庫為輔助醫療人員決策之用,應用時應綜合各文獻內容(包含**仿單.Lexicomp, Micromedex**等)及臨床判斷,以求問全。

