Micromedex 資料庫的臨床使用及案例分享

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問題哪裡來？

- 醫生
- 護理師
- 藥師
- 一般民眾

問題有哪些？

醫師

- 特殊劑量或用法
- 藥物比較
- 交互作用

護理師

- 藥物配製及保存
- 藥物辨識

一般民眾

- 副作用
- 交互作用
- 懷孕或哺乳
- 用藥衛教

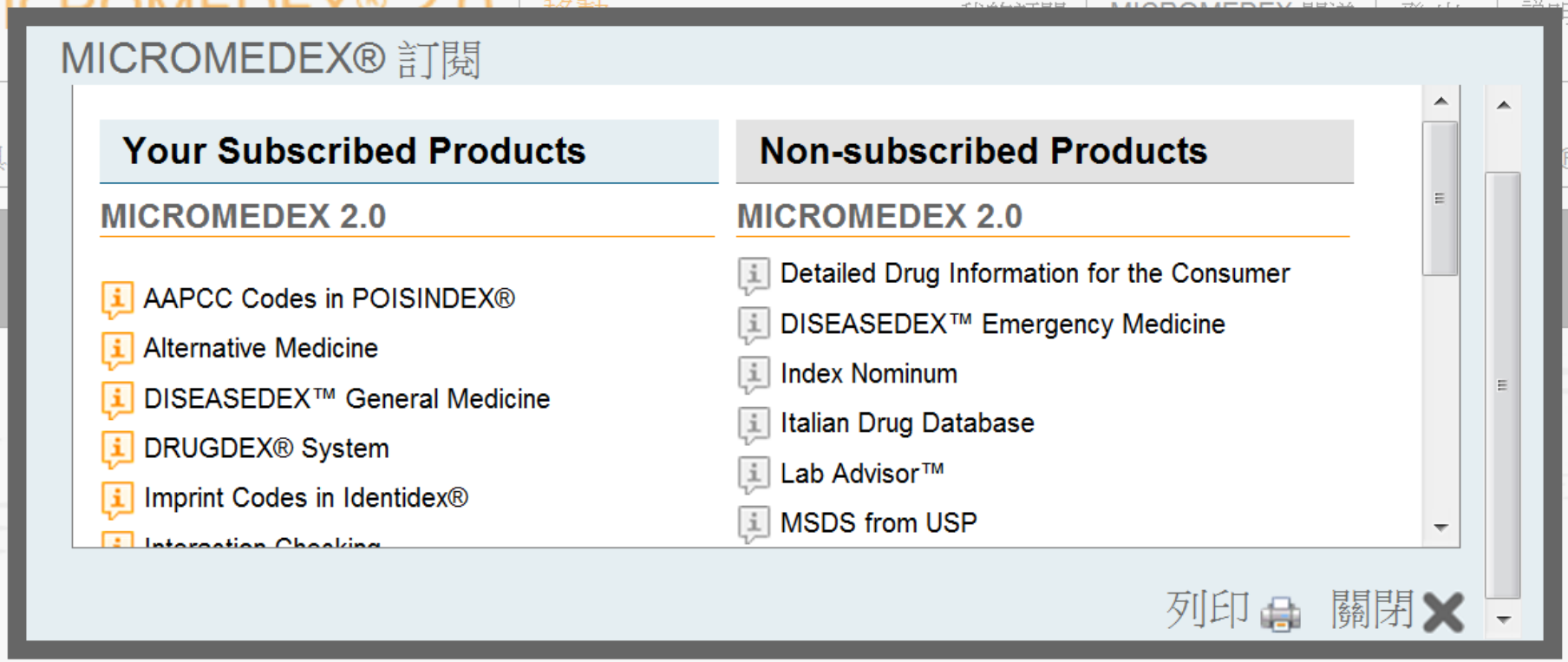
有哪些資料庫？

長庚紀念醫院圖書館
Chang Gung Memorial Hospital Medical Library
電子資源整合系統 E-Resources Management Gateway

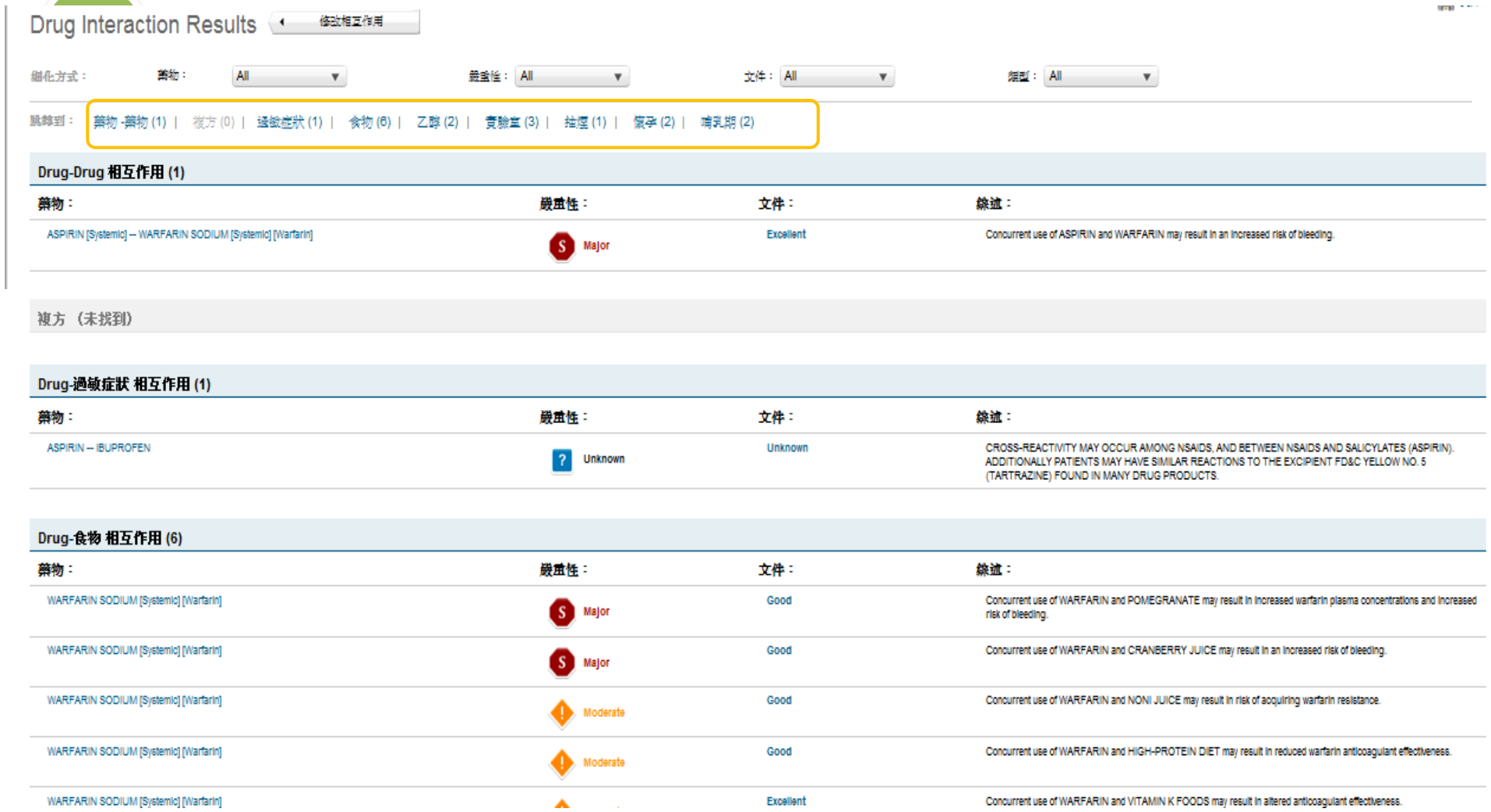
最新消息 | 個人化服務 | 線上說明 | 離開/登入

編號 No.	圖示 Icons	題名 Title	類型 Type	出版商 Publisher	收錄年代 Full Text Coverage	其他註記 Other Info.
1		Access Pharmacy	Database	McGraw-Hill		使用人數:林口8人;基隆3人；嘉義4人；高雄5人。
2		DynaMed	Database	EBSCO		
3		EBM Reviews (ALL)	Database	OVID		使用人數:林口4人;基隆2人；嘉義2人；高雄4人。
4		Harriet Lane Handbook: A Manual for Pediatric House Officers	Book	MD Consult	19th ed. 2011	
5		ICU Book	Book	Books@Ovid	3rd ed. 2007	
6		MD Consult	Database	Elsevier		
7		Micromedex(CCIS) 2.0版	Database	Thomson		使用人數：林口15人;基隆10人;嘉義10人;高雄15人。
8		PubMed (Intranet)	Database	National Library of Medicine, NLM	1948-	
9		UpToDate Online	Database	Uptodate		不提供院外連線

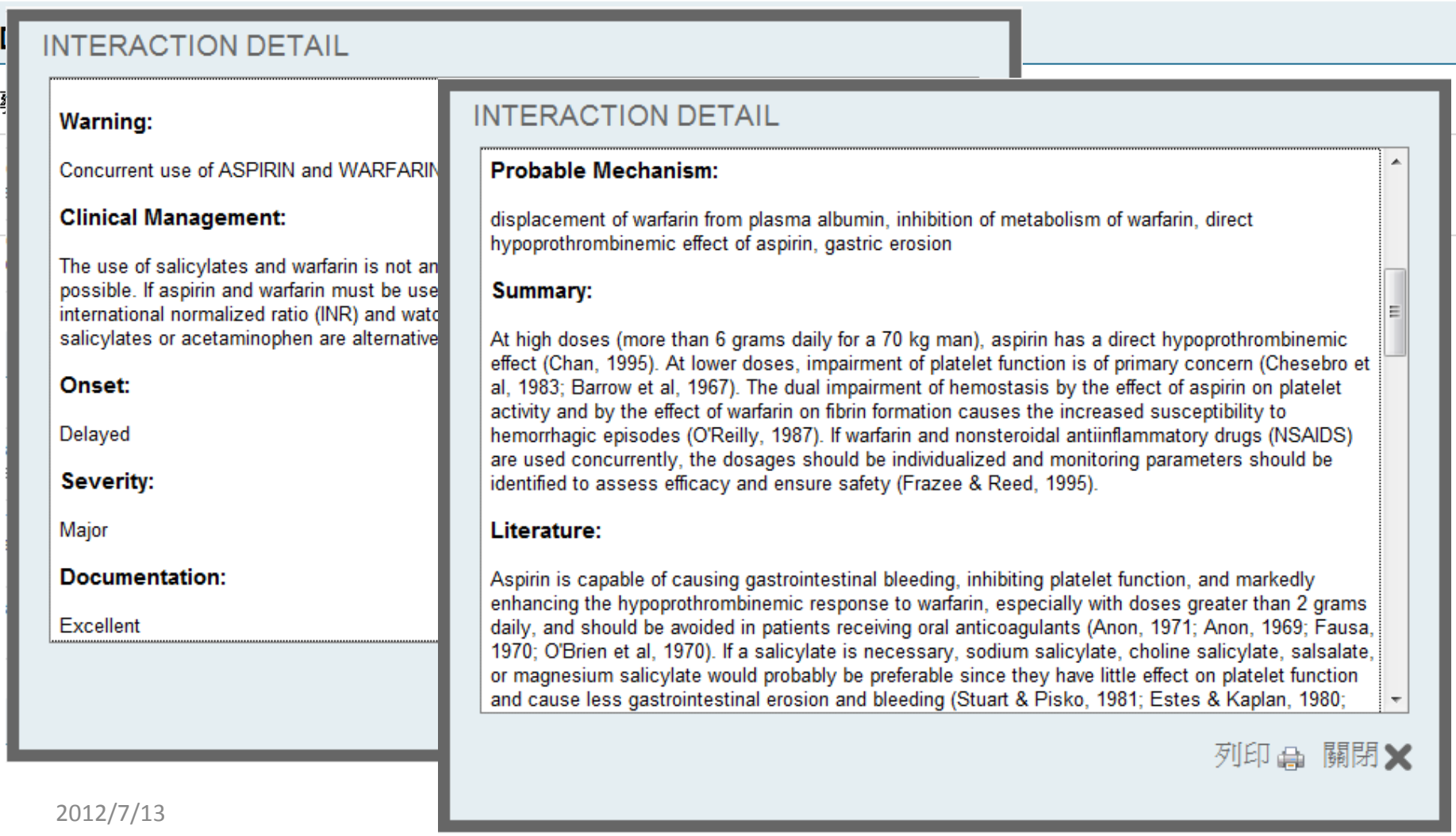
Micromedex 2.0 版面配置



Micromedex 操作與實例



藥物交互作用


INTERACTION DETAIL
Warning:
Concurrent use of ASPIRIN and WARFARIN
Clinical Management:
The use of salicylates and warfarin is not an
possible. If aspirin and warfarin must be use
international normalized ratio (INR) and watc
salicylates or acetaminophen are alternative
Onset:
Delayed
Severity:
Major
Documentation:
Excellent
INTERACTION DETAIL
Probable Mechanism:
displacement of warfarin from plasma albumin, inhibition of metabolism of warfarin, direct hypoprothrombinemic effect of aspirin, gastric erosion
Summary:
At high doses (more than 6 grams daily for a 70 kg man), aspirin has a direct hypoprothrombinemic effect (Chan, 1995). At lower doses, impairment of platelet function is of primary concern (Chesebro et al, 1983; Barrow et al, 1967). The dual impairment of hemostasis by the effect of aspirin on platelet activity and by the effect of warfarin on fibrin formation causes the increased susceptibility to hemorrhagic episodes (O'Reilly, 1987). If warfarin and nonsteroidal antiinflammatory drugs (NSAIDS) are used concurrently, the dosages should be individualized and monitoring parameters should be identified to assess efficacy and ensure safety (Frazee & Reed, 1995).
Literature:
Aspirin is capable of causing gastrointestinal bleeding, inhibiting platelet function, and markedly enhancing the hypoprothrombinemic response to warfarin, especially with doses greater than 2 grams daily, and should be avoided in patients receiving oral anticoagulants (Anon, 1971; Anon, 1969; Fausa, 1970; O'Brien et al, 1970). If a salicylate is necessary, sodium salicylate, choline salicylate, salsalate, or magnesium salicylate would probably be preferable since they have little effect on platelet function and cause less gastrointestinal erosion and bleeding (Stuart & Pisko, 1981; Estes & Kaplan, 1980;
列印
關閉

藥物交互作用

Drug-Drug 相互作用 (1)

藥物：	嚴重性：	文件：	綜述：
ASPIRIN [Systemic] -- WARFARIN SODIUM [Systemic] [Warfarin]	S Major	Excellent	Concurrent use of ASPIRIN and WARFARIN may result in an increased risk of bleeding.

定義

嚴重性：

禁忌
禁止同時使用這些藥物。

嚴重
這種相互作用可能危及生命和/或需要醫療干預以儘量減少或避免嚴重的不良影響。

中等
這種相互作用可能導致加重患者的病情和/或需要在治療中發生改變。

較弱
這種相互作用將限制臨床效果。 表現可能包括增加副作用的頻率或嚴重程度，但一般不需要在治療中發生重大改變。

未知
未知。

定義

文件：

卓越	對照研究明確確立了相互作用的存在。
良好	文件強烈建議相互作用的存在，但缺乏良好對照研究。
一般	可用文件不佳，但藥理考慮引導臨床醫生懷疑相互作用的存在性；或從藥理學講，文件可很好地用於類似的藥物。
未知	未知。

藥物交互作用

Drug-Drug 相互作用 (1)

Drug-過敏症狀 相互作用 (1)

Drug-食物 相互作用 (6)

Drug-乙醇 相互作用 (2)

Drug-實驗室 相互作用 (3)

Drug-懷孕 相互作用 (2)

Drug-哺乳期 相互作用 (2)

藥物：	嚴重性：	文件：	綜述：
ASPIRIN [Systemic]	Major	Unknown	According to the American Academy of Pediatrics, Aspirin should be given with caution during breast-feeding.
WARFARIN SODIUM [Systemic] [Warfarin]	Minor	Unknown	According to the American Academy of Pediatrics, Warfarin is compatible with breast-feeding. the benefits of therapy may outweigh the potential risk.

交互作用｜實例1

- 75歲，女性，4/17因顱內出血入院，以前額開顱術移除血塊後，並以Phenytoin預防癲癇
- 4/28 開始以Ertapenem治療泌尿道感染（細菌培養為E. coli-ESBL strain）
- 5/4 因臉部及四肢仍有局部癲癇，更換Phenytoin為 Valproic acid 400mg q8h IV，但仍持續間斷式癲癇，Valproic acid血中濃度偏低（5/5：15.62mg/L，5/7：3.27mg/L，5/9：2.27mg/L）
- 5/5起逐步加入Levetiracetam、Oxcarbazepine及Topiramate以控制癲癇

交互作用｜實例1

INTERACTION DETAIL

因已完成抗生素療程（7-10天）及因交互作用造成藥物療效不佳，建議停用Ertapenem，其後癲癇漸歇，並逐步調降其他抗癲癇藥物

recommended as this may cause decreased valproic acid plasma concentrations and increase the risk for breakthrough seizures. Increasing the valproic acid or divalproex sodium dose may not be adequate to achieve desired levels. Consider using an alternative antibiotic (other than a carbapenem) which does not affect valproic acid serum levels. If concomitant administration is unavoidable, consider supplemental anticonvulsant therapy (Prod Info IVANZ® injection, 2009).

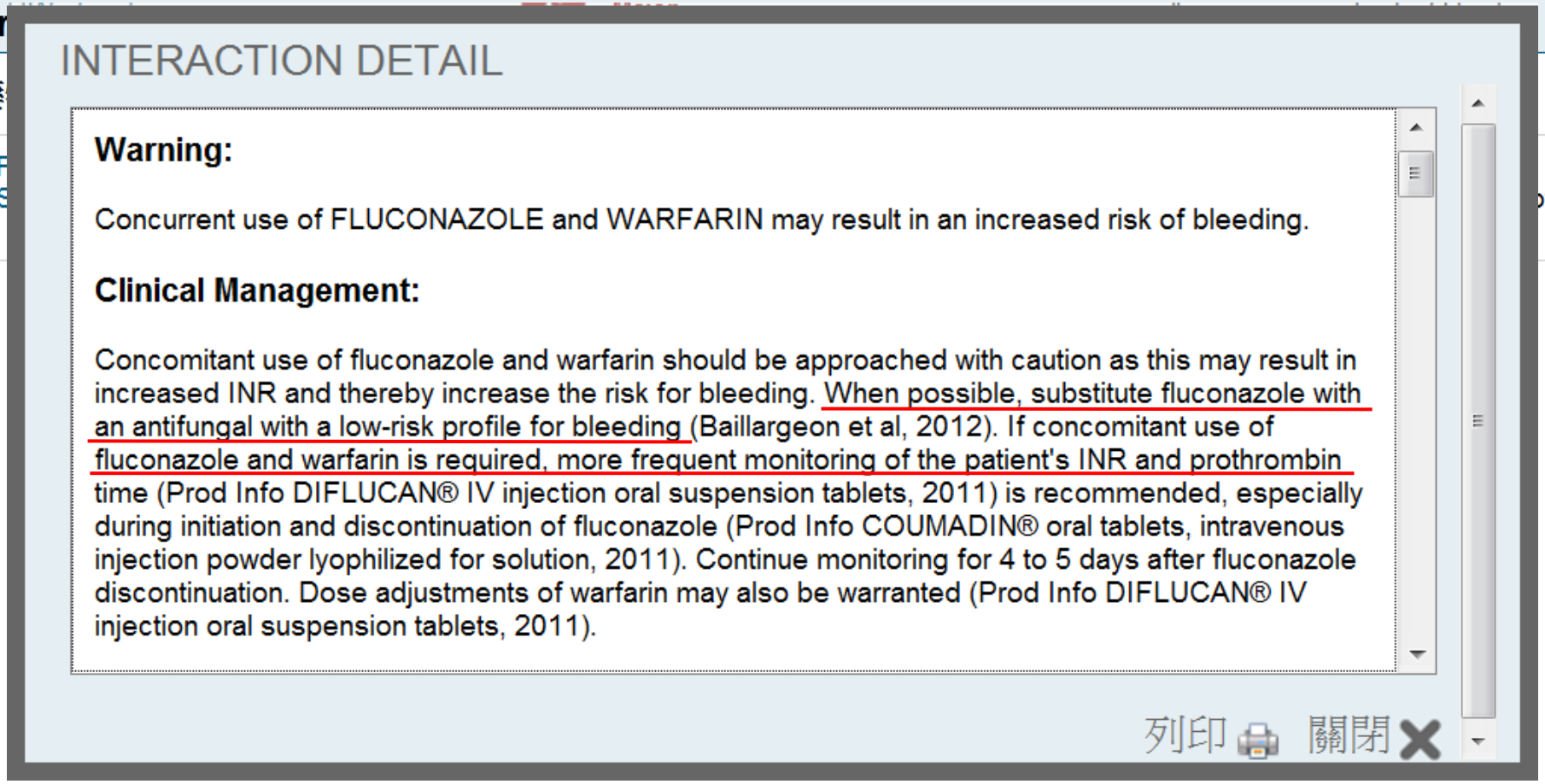
Onset:

列印 關閉

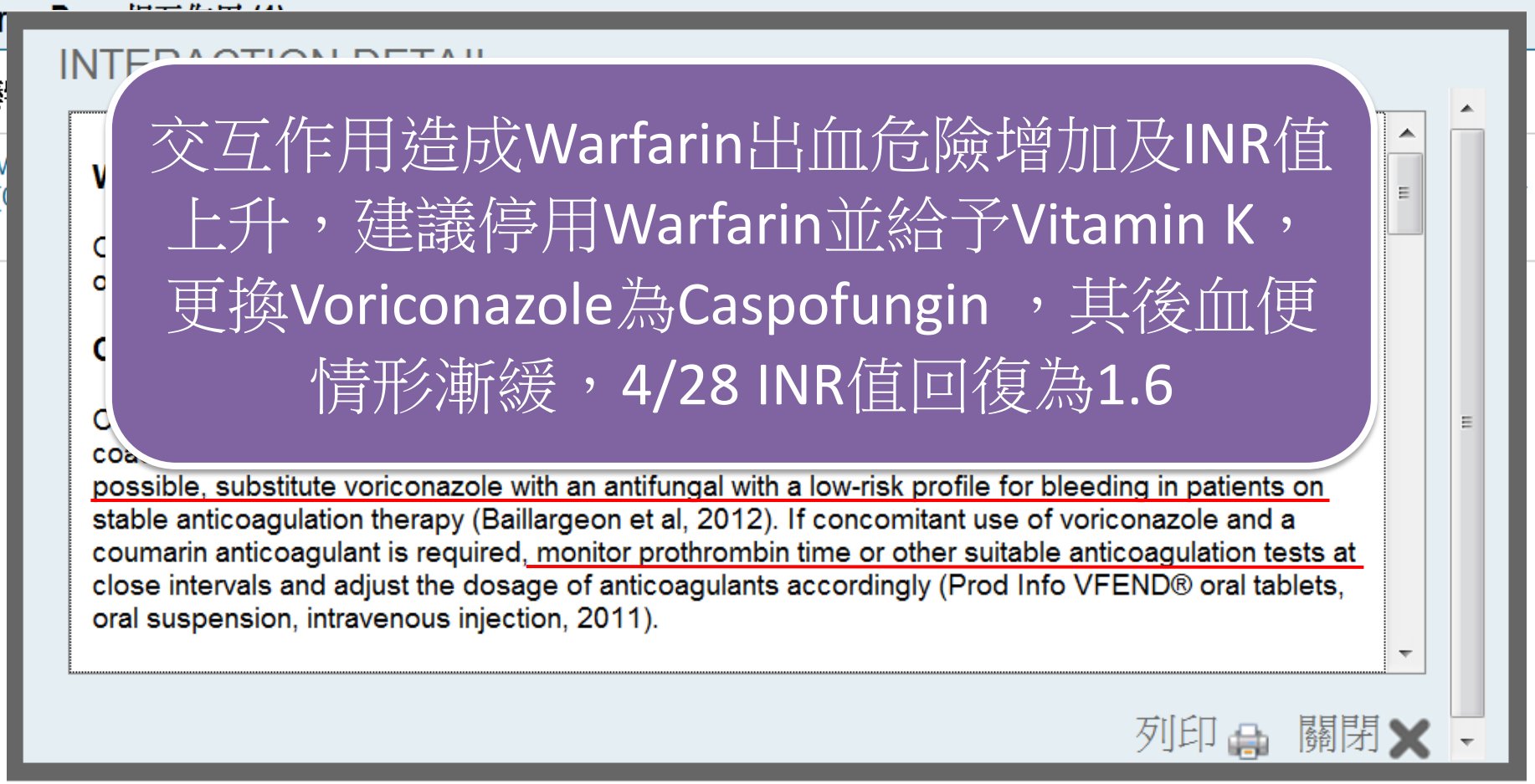
交互作用｜實例2

- 73歲，女性，有中風及瓣膜性心臟病史，長期服用Warfarin 5mg/tab 0.5# QD
- 4/14因敗血性休克入院，入院後發現有侵入性黴菌感染，4/15-4/23使用Fluconazole，並於4/24更換為Voriconazole
  - ✓4/13 血液培養：Candida albicans
  - ✓4/20 傷口培養：Candida albicans
  - ✓4/21 腦脊髓液：Yeast like
  - ✓4/23 尿液培養：Candida glabrata
- 4/25開始有血便，檢驗INR值為5.4（4/20為2.0），

交互作用｜實例2


INTERACTION DETAIL
Warning:
Concurrent use of FLUCONAZOLE and WARFARIN may result in an increased risk of bleeding.
Clinical Management:
Concomitant use of fluconazole and warfarin should be approached with caution as this may result in increased INR and thereby increase the risk for bleeding. When possible, substitute fluconazole with an antifungal with a low-risk profile for bleeding (Baillargeon et al, 2012). If concomitant use of fluconazole and warfarin is required, more frequent monitoring of the patient's INR and prothrombin time (Prod Info DIFLUCAN® IV injection oral suspension tablets, 2011) is recommended, especially during initiation and discontinuation of fluconazole (Prod Info COUMADIN® oral tablets, intravenous injection powder lyophilized for solution, 2011). Continue monitoring for 4 to 5 days after fluconazole discontinuation. Dose adjustments of warfarin may also be warranted (Prod Info DIFLUCAN® IV injection oral suspension tablets, 2011).
列印
關閉

交互作用｜實例2

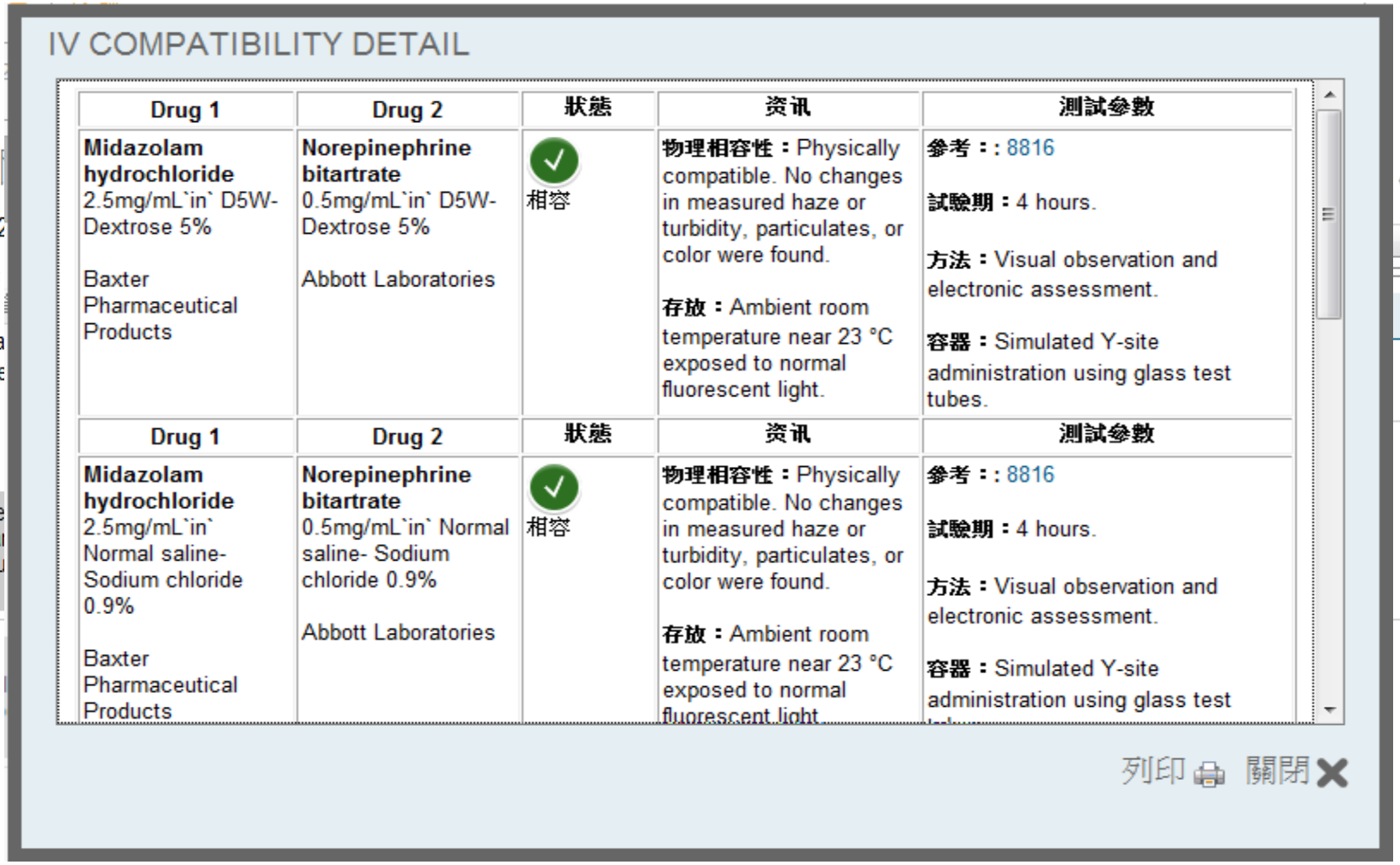

交互作用造成Warfarin出血危險增加及INR值上升，建議停用Warfarin並給予Vitamin K，更換Voriconazole為Caspofungin ，其後血便情形漸緩，4/28 INR值回復為1.6
possible, substitute voriconazole with an antifungal with a low-risk profile for bleeding in patients on stable anticoagulation therapy (Baillargeon et al, 2012). If concomitant use of voriconazole and a coumarin anticoagulant is required, monitor prothrombin time or other suitable anticoagulation tests at close intervals and adjust the dosage of anticoagulants accordingly (Prod Info VFEND® oral tablets, oral suspension, intravenous injection, 2011).
列印
關閉

Micromedex 操作與實例

IV相容性｜實例1

請問 Midazolam與 Levophed 在 Y-set是否相容？

IV相容性｜實例1



IV COMPATIBILITY DETAIL

Drug 1	Drug 2	狀態	資訊	測試參數
Midazolam hydrochloride 2.5mg/mL`in` D5W-Dextrose 5% Baxter Pharmaceutical Products	**Norepinephrine bitartrate** 0.5mg/mL`in` D5W-Dextrose 5% Abbott Laboratories	相容	**物理相容性：**Physically compatible. No changes in measured haze or turbidity, particulates, or color were found. **存放：**Ambient room temperature near 23 °C exposed to normal fluorescent light.	**參考：**: 8816 **試驗期：**4 hours. **方法：**Visual observation and electronic assessment. **容器：**Simulated Y-site administration using glass test tubes.
Drug 1	**Drug 2**	**狀態**	**資訊**	**測試參數**
Midazolam hydrochloride 2.5mg/mL`in` Normal saline-Sodium chloride 0.9% Baxter Pharmaceutical Products	**Norepinephrine bitartrate** 0.5mg/mL`in` Normal saline- Sodium chloride 0.9% Abbott Laboratories	相容	**物理相容性：**Physically compatible. No changes in measured haze or turbidity, particulates, or color were found. **存放：**Ambient room temperature near 23 °C exposed to normal fluorescent light	**參考：**: 8816 **試驗期：**4 hours. **方法：**Visual observation and electronic assessment. **容器：**Simulated Y-site administration using glass test

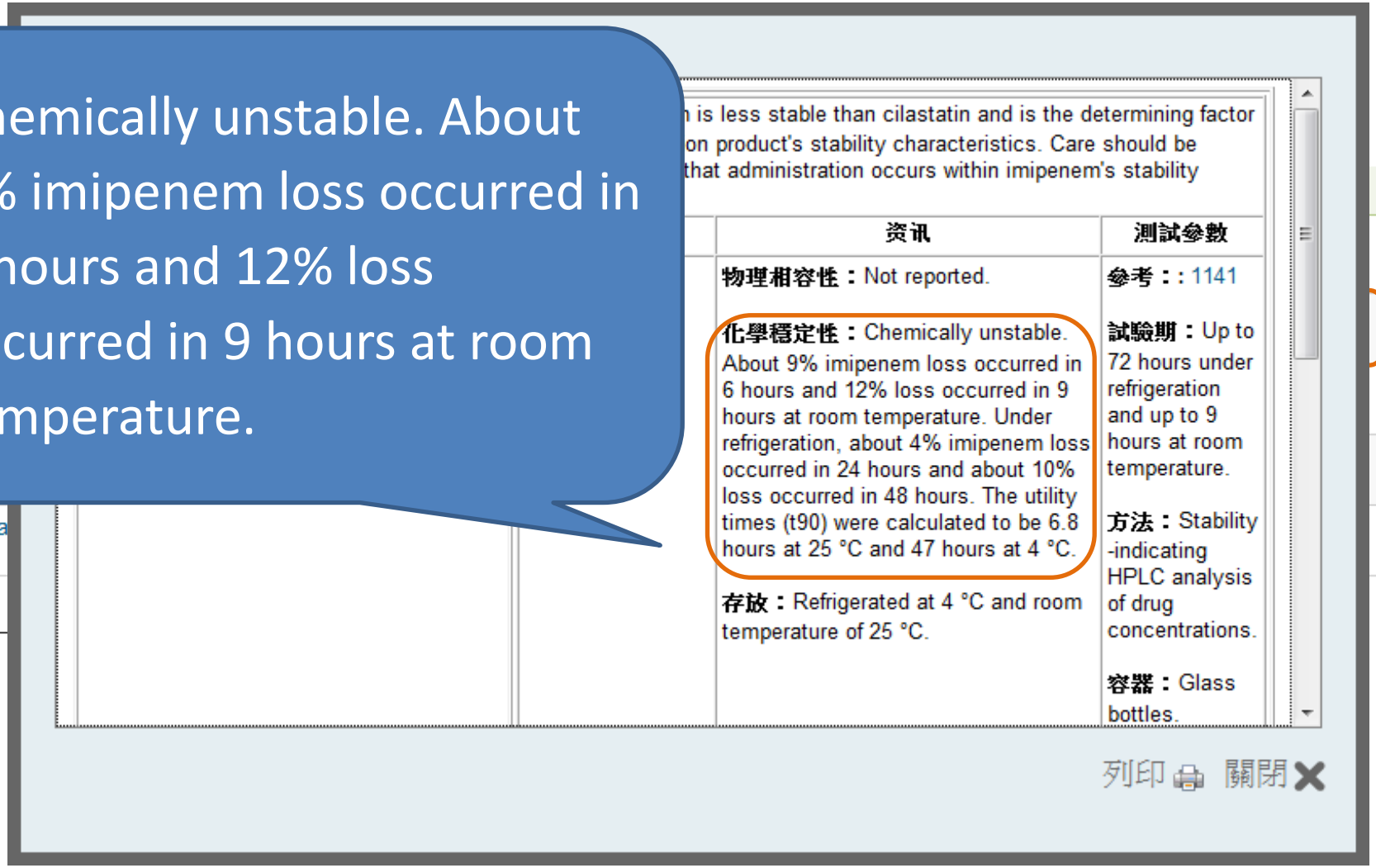
列印 關閉

IV相容性｜實例2

請問 Tienam在 Lactated Ringer‘s solution的相容性？

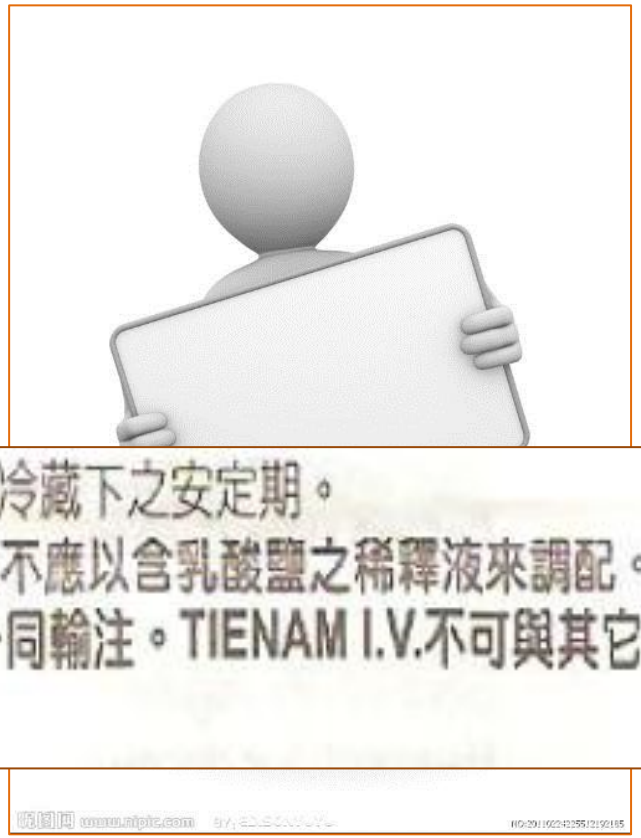
IV相容性｜實例2

Chemically unstable. About 9% imipenem loss occurred in 6 hours and 12% loss occurred in 9 hours at room temperature.



IV相容性｜ 實例2

Tienam與 Lactated Ringer‘s solution屬化學配伍禁忌，但因Tienam靜脈輸注小於30分鐘，所以仍可一同輸注



表四為當TIENAM I.V.與特定浸輸液調配後，溶液於室溫下或冷藏下之安定期。

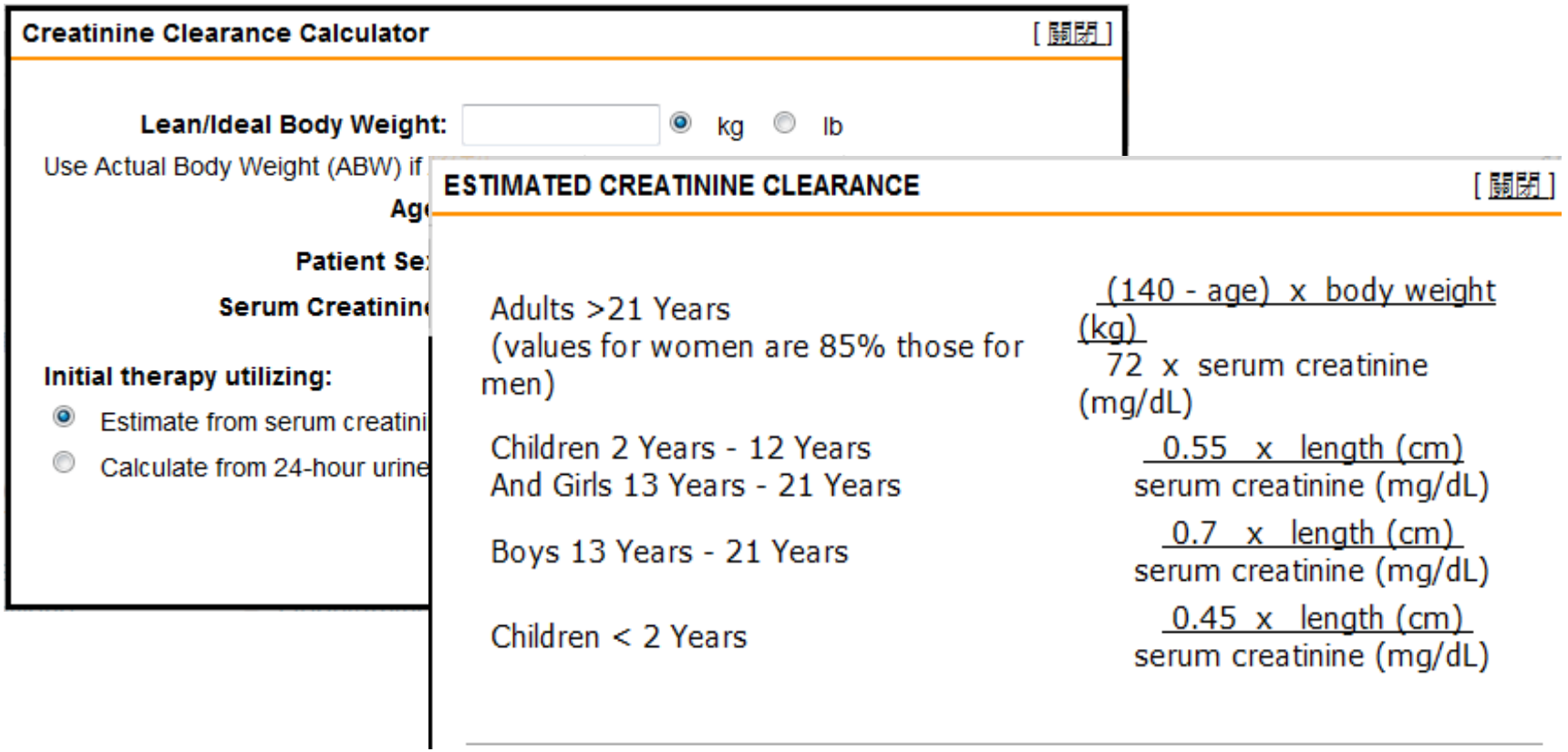
注意:TIENAM I.V.與乳酸鹽 (lactate) 屬化學配伍禁忌，所以不應以含乳酸鹽之稀釋液來調配。然而TIENAM I.V.可加入正在進行靜脈輸注的含乳酸鹽溶液一同輸注。TIENAM I.V.不可與其它種抗生素混合或併用。

Micromedex 操作與實例

Micromedex 操作與實例

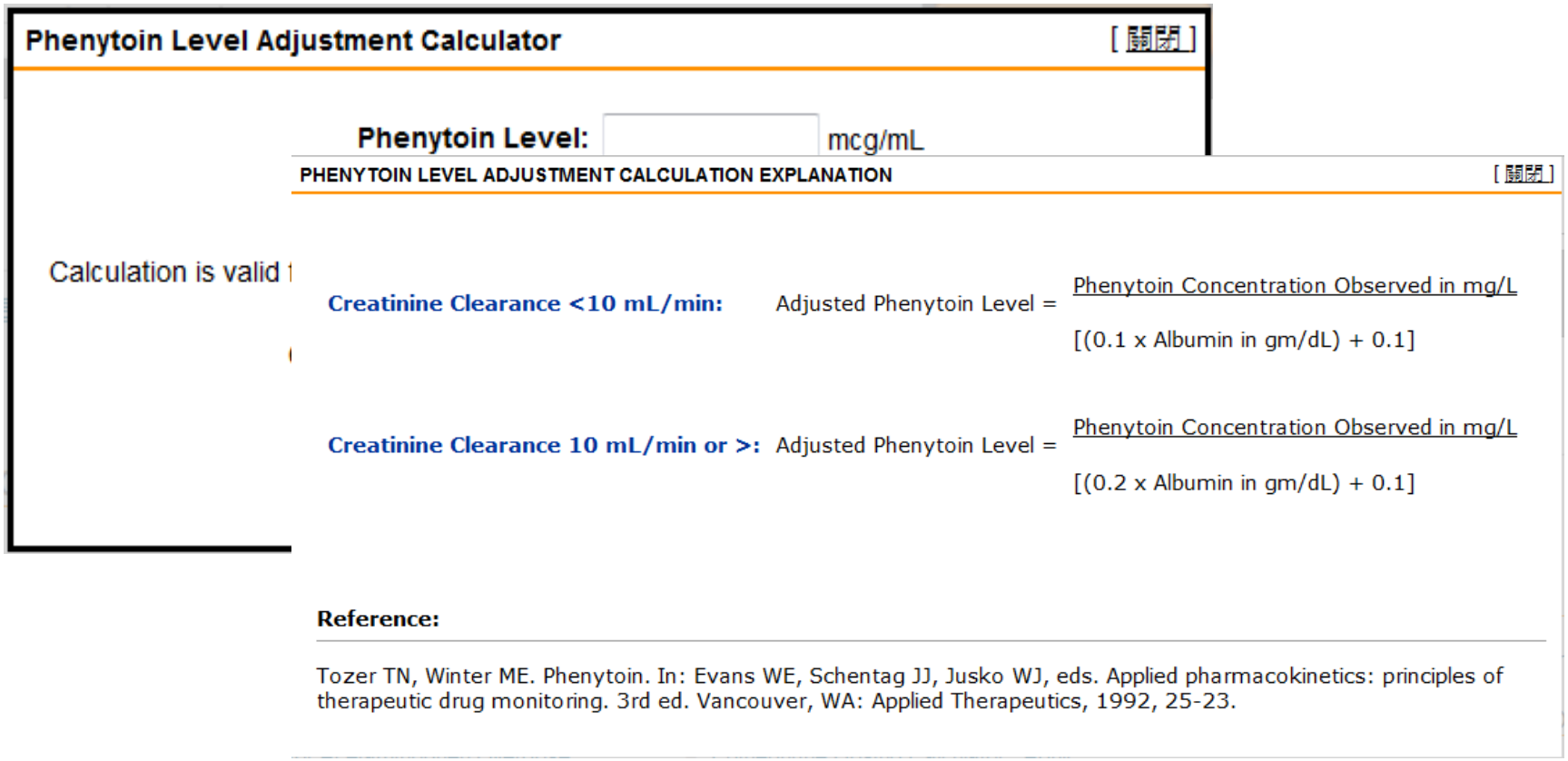
計算器

1. Creatinine Clearance Calculator



計算器

2. Phenytoin Level Adjustment Calculator



計算器

3. ACLS/PALS Guidelines

Recommendations according to AHA guidelines ACLS/PALS/neonatal resuscitation.

*Attention - Institutionally dispensed drug concentrations may vary.

Drug	Route	Dose	Delivery
DOBUTamine hydrochloride			
5 to 10 mcg/kg/min	Infusion	Starting Rate: 300 mcg/min (18 mL/hr of a 1000 mcg/mL conc) Dose based on 5 mcg/kg/min	Mix 20 mL of a 12.5 mg/mL vial in 250 mL of D5W for a 1000 mcg/mL solution.
DOPamine hydrochloride			
2 to 10 mcg/kg/min	Infusion	Starting Rate: 300 mcg/min (11.3 mL/hr of a 1600 mcg/mL conc) Dose based on 5 mcg/kg/min	Dilute 400 mg DOPamine in 250 mL D5W for a 1600 mcg/mL solution.
EPINEPHrine: Cardiac Arrest			
IV/IO: 1 mg May Repeat: 1 mg every 3 to 5 minutes	IV/IO	1 mg (10 mL from a 0.1 mg/mL (1:10,000) conc) May Repeat: 1 mg every 3 to 5 minutes	
ET: 2 to 2.5 mg May Repeat: 2 to 2.5 mg every 3 to 5 minutes	ET	2 mg (2 mL from a 1 mg/mL (1:1000) conc) May Repeat: 2 mg every 3 to 5 minutes	
EPINEPHrine: Bradycardia			

計算器

3. ACLS/PALS Guidelines

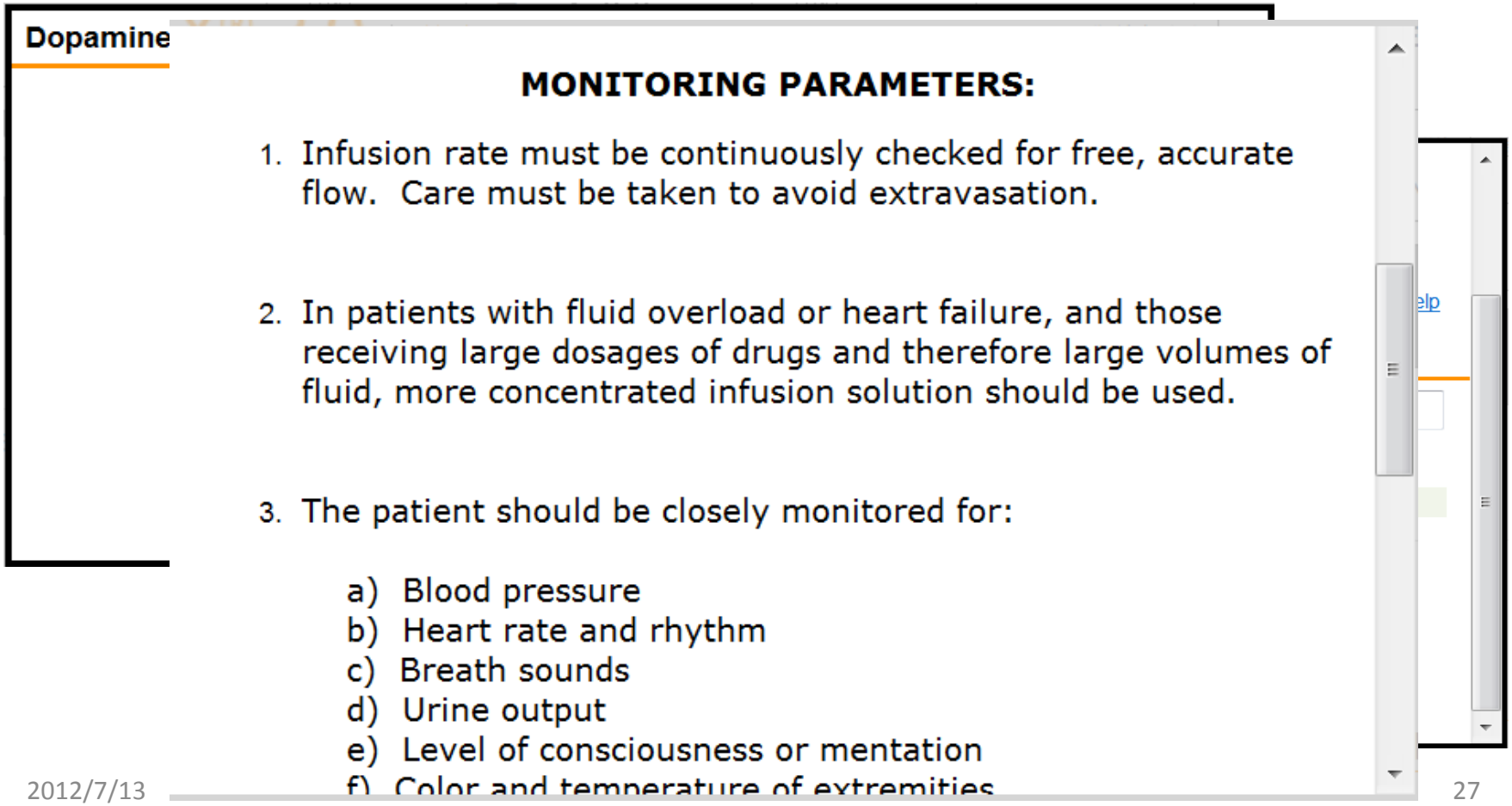
Recommendations according to AHA guidelines ACLS/PALS/neonatal resuscitation.

*Attention - Institutionally dispensed drug concentrations may vary.

Drug	Route	Dose	Delivery
Adenosine			
6 mg May Repeat: 12 mg X 2 MAX: 30 mg	Rapid IV Push	6 mg (2 mL of 3 mg/mL conc) over 1 to 3 seconds May Repeat: after 1 to 2 minutes, 12 mg (4 mL of 3 mg/mL conc) over 1 to 3 seconds; may repeat another 12 mg after 1 to 2 minutes MAX: 30 mg	Follow adenosine IV push with 20 mL saline flush. Higher doses may be required in patients taking theophylline.
Amiodarone: Cardiac Arrest			
300 mg May Repeat: 150 mg x 1	IV Push/IO	300 mg (6 mL of a 50 mg/mL conc) May Repeat: 150 mg (3 mL of a 50 mg/mL conc) x 1	Dilute in 20 to 30 mL of D5W or may administer undiluted.
Amiodarone: Stable VT			
150 mg May Repeat: 150 mg	Slow IV Push	150 mg (10 mL/min of a 1.5 mg/mL conc) over 10 minutes May Repeat: 150 mg	Mix 3 mL from a 50 mg/mL vial in 100 mL D5W for a 1.5 mg/mL solution.
1 mg/min MAX Cumulative Dose: 2.2 g over 24 hours	Infusion	1 mg/min (33 mL/hr of 1.8 mg/mL conc) for 6 hours, then 0.5 mg/min (16 mL/hr) MAX Cumulative Dose: 2.2 g over 24 hours	Mix 18 mL of 50 mg/mL vial in 500 mL D5W for a 1.8 mg/mL solution.

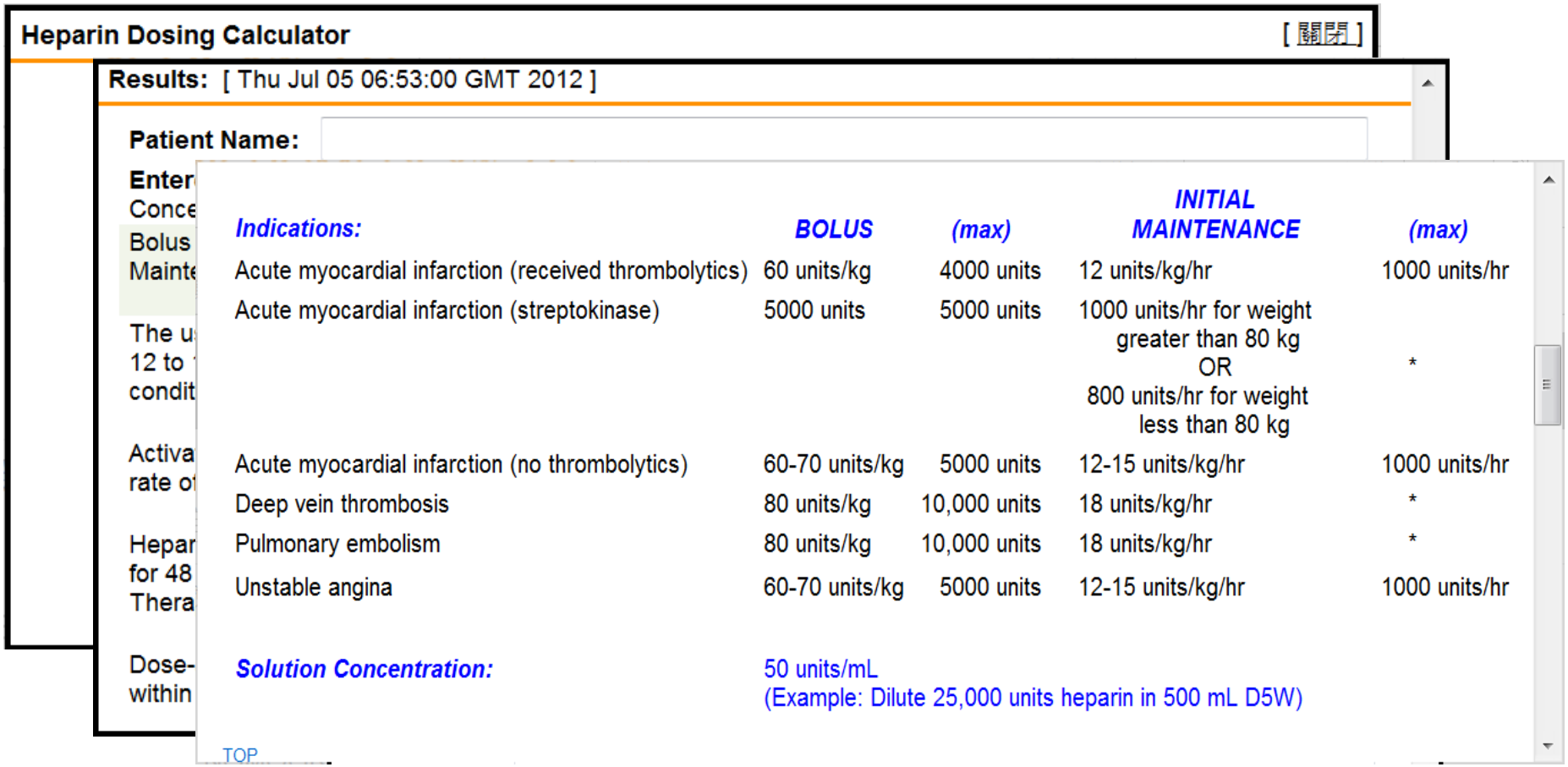
計算器

3. Dopamine Dosing Calculator



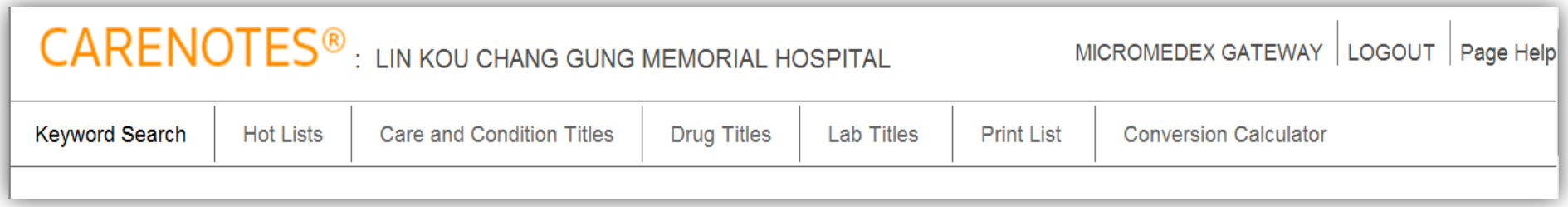
計算器

3. Heparin Dosing Calculator

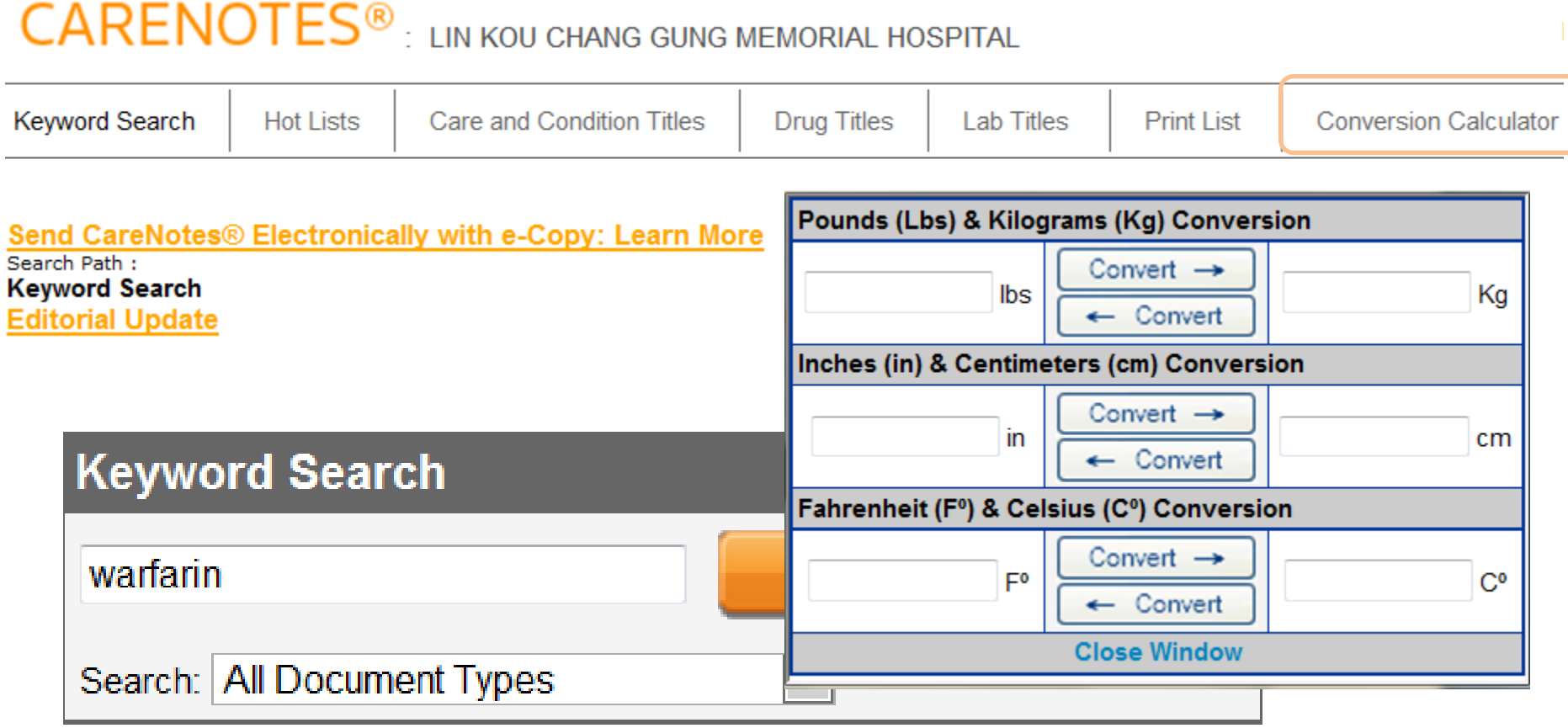


Micromedex 操作與實例

提供衛教相關訊息
包括疾病、藥物、檢驗數值等



CareNotes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Preview Print

Patient Information:

Patient's Name:

Caregiver's Name:

☑ Add Signature Line

Document Options:

Font Size: Medium

☑ Include Images

Number of Copies: 1

WARNING: Information on this page is not saved.
If you leave this page without Printing/Sending, the information you entered will be lost.

Documents:

Warfarin (Oral) (Tablet) - DrugNote

Special Instructions:
單日半顆，雙日一顆

☑ Special Instructions in **bold text**

Patient Education Record:

☑ **Include Education Record**
A record of the Patient and Caregiver name, documents given, special instructions, and date.

Preview Print

我已閱讀並瞭解這份講義中的說明。

_____

患者/監護人簽名

_____

醫護人員簽名

特殊指示:
單日半顆，雙日一顆

華法林 (Warfarin) (口服)

華法林 (Warfarin) (WAR-far-in)

有助預防形成新的血栓及防止既有的血栓惡化。本藥是一種抗凝血劑。

品牌名稱 ：Coumadin , Jantoven
這種藥物可能有其他品牌名稱。

下列狀況不宜使用此藥物：
如果您對華法林有過敏反應，或懷有身孕或計劃懷孕，請勿服用此藥。如果您即將要動手術[redacted]是可能需要開刀的重大手術，通常不可服用本藥。如果您患有某種心臟問題、嚴重或無法控制的高血壓，[redacted]

藥物使用方法：
錠劑

- 您的醫師會告訴您這種藥的服用劑量及服用次數。為達最佳療效，您的服用劑量可能[redacted]
- 本藥可空腹或與食物一起服用。
- 本藥應附有一張「用藥說明」。請詳閱說明，並依指示服藥。如果有任何問題，請詢[redacted]

如果錯過服藥時間：

- 萬一您錯過服藥時間或者忘記服藥，請儘快服用。如果下一次的服藥時間快要到了，應跳過[redacted]服藥劑量。

藥物儲存和處理方法：

- 請將藥物儲存在加蓋容器中並置於室溫下。避免高溫、潮濕及陽光直射。
- 詢問藥劑師、醫師或醫護人員如何妥善處理任何過期或不再需要的藥物。
- 請將藥物存放在兒童搆不到的地方。切勿與任何人共用您的藥物。

應避免的藥物和食物：
在服用其他任何藥物（包括非處方藥、維他命及草本補給品）之前，請先詢問您的醫師或藥劑師。

- 請勿服用也含有華法林的其他藥物。服用過多華法林可能會導致嚴重的出血問題。
- 有**許多**其他藥物不能與華法林一起服用，其中包括許多藥草、補充劑和成藥（非處方藥）。**服用其他任何藥物之前，請先詢問您的醫師**，尤其是含非類固醇類消炎藥 (NSAID) 的藥物，例如阿司匹林、布洛酚 (ibuprofen)、甲氧猶酸 (naproxen)、Advil®、Aleve® 或 Motrin®。請仔細檢查您正在服用的所有其他藥物的商品標籤，確定它們不含 NSAID。
- 請確實遵照醫師所給的特殊飲食指示。每天從食物中攝取同量的維他命 K，能讓本藥發揮最佳功效。請儘量攝取基本同量的維他命 K。富含維他命 K 的食物包括蘆筍、花椰菜、球芽甘藍、小白菜、綠葉蔬菜（例如芥蘭菜、蘿蔔葉、芥菜、菠菜和生菜莎拉）、洋李、大黃莖和某種蔬菜油（例如大豆油和菜籽油）。
- 避免飲用大量的葛越莓汁或其他葛越莓產品。
- 服藥期間不可飲酒。

服藥警告事項：

- 孕婦如果服用本藥，可能會傷及胎兒。請使用有效的方式避孕。如果您在服藥期間發現自己可能懷孕，請立刻告知您的醫師。
- 如果您正在餵哺母乳，或患有腎臟病、肝病、充血性心力衰竭、高血壓、糖尿病、任何一種感染或出血問題，請務必告知您的醫師。如果您最近曾摔倒或受到其他傷害，也請告知您的醫師。若有名為蛋白質 C 缺乏症的罕見遺傳疾病，請告知您的醫師。
- 服用本藥時，您可能更容易出血和擦傷。請避免激烈運動或其他可能造成擦傷、割傷或受傷的活動。刷牙和用牙線剔牙時不要太用力。使用刮鬍刀和剪指甲刀等尖銳物體時請小心。不要挖鼻孔。需要時，輕輕擤鼻子。

1. 不宜使用此藥物的情況
2. 使用方法
3. 如果錯過服藥時間
4. 藥物儲存和處理方法
5. 應避免的藥物和食物
6. 服藥警告事項
7. 可能的副作用

副作用/毒性

醫師今天開 Methotrexate 來治療我的牛皮癬，請問 Methotrexate的副作用有哪些？

副作用/毒性

可是我吃了一天後，手腳皮膚開始出現紅腫疼痛，還會起水泡，就跟被燙傷一樣，連嘴巴都破了~~~

副作用/毒性

請問Methotrexate發生血液及皮膚毒性該如何處理？多久可以回復？

以Micromedex 2.0
解決患者及醫師的問題

副作用/毒性

METHOTREXATE

顯示整個文件 | 列印

DRUGDEX® 評價 其他來源

CAUTIONS

全部展開 | 全部折疊 | 頁首

Acral erythema

a) Painful acral erythema developed 3 days after a 60-year-old woman received methotrexate 3 g/m(2) for malignant lymphoma; one- half of the dose was administered over 1 hour with the remainder administered over 5 hours [315]. The palms of both hands and soles of the feet were affected. On day 13, desquamation developed on the hands and feet and resolved completely within 2 weeks without scarring. Despite leucovorin rescue, intravenous hydration, and urine alkalization, the methotrexate concentration remained elevated for 10 days. Subsequent courses of chemotherapy omitted methotrexate; acral erythema did not recur. The authors suggest that this reaction was allergic rather than toxic because eosinophilia was present, and the drug lymphocyte stimulation test was strongly positive.
b) Three children developed acral erythema 3 to 14 days after receiving methotrexate 3 to 8 g/m(2). The finger pads were affected in all children; whereas, one child also had lesions on the heels and toes. Blisters occurred followed by desquamation and reepithelialization; the lesions cleared over 1 week. None of the patients had toxic methotrexate concentrations. Subsequent courses of chemotherapy included high-dose methotrexate without a dosage reduction, and no cutaneous reactions developed. In severe cases, corticosteroids have been used; however, in this series, the lesions resolved over 1 week without treatment [316].

Alopecia

a) Incidence: 0.5% to 3%[243]
b) Alopecia has been reported in patients taking methotrexate. Most reactions are reversible if detected early [243].
c) Alopecia was reported in greater than 1% to 3% of patients receiving low-dose oral methotrexate (7.5 to 15 mg per week) during clinical trials for rheumatoid arthritis (n=128). Alopecia was reported in 0.5% of pediatric patients with juvenile rheumatoid arthritis who received oral methotrexate (5 to 20 mg/m(2)/week) [243].

Nail damage

副作用/毒性

Methotrexate Sodium 同時在以下項中找到...

Toxicology and Exposure Information (1)

相關主題...(1)

- METHOTREXATE AND RELATED AGENTS

Disease Information (16)

666 找到以下項的結果： "Methotrexate Sodium"

頁首

執行 Tox 和藥物產品查找: Methotrexate Sodium

執行 Martindale 藥物產品查找: Methotrexate Sodium

顯示： 全部 (666) | 藥物 (593) | 疾病 (69) | 毒理學 (2) | 替代藥物 (2)

頁面 1: 以下項的結果： 1-10

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 後面 10 個

1. Methotrexate Sodium
   Injection, Oral

副作用/毒性

METHOTREXATE AND RELATED AGENTS

列印

ToxPoints® 綜述

其他來源

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B) PHARMACOLOGY: Methotrexate is a folate antimetabolite that reversibly inhibits dihydrofolate reductase. Dihydrofolates are reduced to tetrahydrofolates by this enzyme before they are used in the synthesis of purine nucleotides and thymidylate. Via this mechanism, methotrexate sodium interferes with DNA synthesis, repair, and cellular replication. The mechanism of action of methotrexate sodium in rheumatoid arthritis is unknown.

C) TOXICOLOGY: After an overdose, the effects of decreased DNA synthesis and cell death are noticed primarily in organ systems with rapidly dividing cells (eg, bone marrow, gastrointestinal tract).

D) EPIDEMIOLOGY: Acute methotrexate overdose is rare, but inadvertent intravenous and intrathecal overdoses have been reported. Inadvertent oral overdoses have been reported when methotrexate was administered as a daily dose rather than the recommended once a week dose.

E) WITH THERAPEUTIC USE

副作用/毒性

DERMATOLOGIC

3.14.2) CLINICAL EFFECTS

A) DISORDER OF SKIN

1) WITH THERAPEUTIC USE

a) Erythematous rashes, alopecia, pruritus, and urticaria have been reported in patients taking methotrexate. Rash/dermitis/pruritus were reported in greater than 1% to 3% of patients receiving low-dose oral methotrexate (7.5 to 15 mg per week) during clinical trials for rheumatoid arthritis (n=128). When methotrexate is used to treat psoriasis, painful plaque erosions may appear (rare) (Prod Info RHEUMATREX(R) oral tablets, 2009; Prod Info methotrexate intramuscular, intravenous, intra-arterial injection, 2007).

b) RARE: Toxic epidermal necrolysis, Stevens-Johnson syndrome, exfoliative dermatitis, skin necrosis, and erythema multiforme have rarely been reported in children and adults within days of oral, IM, IV, or intrathecal methotrexate (Prod Info methotrexate intramuscular, intravenous, intra-arterial injection, 2007; Prod Info methotrexate intramuscular, intravenous, intra-arterial injection, 2007).

c) CASE REPORT: A pruritic rash appeared 15 minutes after starting methotrexate infusion in an 18-year-old girl. She later developed toxicity with a peak methotrexate blood level of 574 micromoles/L (Grimes et al, 1990).

2) WITH POISONING/EXPOSURE

a) KOEBNER-LIKE PHENOMENON: A 67-year-old woman with a history of dermatomyositis developed slightly painful and pruritic erythematous patches with bulla and pustules on her back and right thigh after ingesting methotrexate 15 mg/day (instead of weekly) for 7 days. An intraepidermal blister, degeneration of the epidermis and hydropic degeneration of the keratinocytes were observed on the histological examination of the right thigh. She also developed nausea, anorexia, painful oral ulcerations, myelosuppression, and elevated liver enzymes. She recovered following the discontinuation of methotrexate and supportive care (Yoon et al, 2008).

B) DERMATITIS

1) WITH THERAPEUTIC USE

a) Total body erythema has been reported. A high-dose of methotrexate has been reported to result in distal

E) WITH THERAPEUTIC USE

1) Adverse events may vary widely depending on the route of exposure and dose; hematologic and gastrointestinal side effects are common for those undergoing chemotherapy, but far less common in those taking methotrexate for rheumatoid arthritis.

2) CNS: Headache, drowsiness, speech impairment including dysarthria and aphasia, hemiparesis, paresis, seizures, transient subtle cognitive dysfunction, mood alteration or unusual cranial sensations,

3) DERMATOLOGIC: Reddening of the skin, alopecia, rash, photosensitivity, and depigmentation or hyperpigmentation of the skin.

4) GASTROINTESTINAL: Ulcerative stomatitis, glossitis, gingivitis, nausea, vomiting, diarrhea, anorexia, gastrointestinal ulceration and hemorrhage. These effects are very dose dependent and usually appear in a delayed fashion (3 to 7 days after therapy with resolution after 2 weeks).

5) GENITOURINARY: Renal failure, azotemia, nephropathy, and cystitis. This is more common with higher doses and may be secondary to precipitation of the drug.

6) HEMATOLOGIC: Anemia, leukopenia, and thrombocytopenia, which can lead to hemorrhage. These effects typically begin 6 to 9 days after exposure and last for approximately 2 weeks.

7) HEPATIC: Cirrhosis and portal fibrosis have been reported with chronic methotrexate toxicity. In addition, acute elevation of liver enzymes is common after high-dose methotrexate, but usually resolves within 10 days.

8) OCULAR: Blurred vision and transient blindness.

9) RESPIRATORY: Pneumonitis and acute respiratory distress syndrome.

OTHER RARE BUT POTENTIALLY LIFE-THREATENING REACTIONS: Anaphylactoid reaction, alveolitis, hepatic failure, lymphoproliferative disorders, osteonecrosis and soft tissue necrosis, pericarditis, erythema multiforme, Stevens-Johnson syndrome, and thromboembolism. Methotrexate administration appears to increase the risk of developing leukemias and lymphomas.

REPRODUCTIVE: Methotrexate is teratogenic (FDA pregnancy category D).

12) DRUG INTERACTIONS: Dantrolene, doxycycline, omeprazole, and trimethoprim/sulfamethoxazole may reduce methotrexate elimination and increase the risk of toxicity. Coadministration of NSAIDS or use of radiocontrast agents may increase toxicity, likely by reducing renal function.

副作用/毒性

OVERVIEW

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LABORATORY/MONITORING

檢視 POISINDEX 中的詳細資訊

A) Anemia, leukopenia, and thrombocytopenia may occur. These effects typically begin 6 to 9 days after therapeutic use and last for approximately 2 weeks, may develop sooner and persist longer after overdose. Monitor serial CBC (with differential) and platelet count until there is evidence of bone marrow recovery.

B) Monitor patient for signs of bleeding.

C) Monitor for clinical evidence of infection, with particular attention to: odontogenic infection, oropharynx, esophagus, soft tissues particularly in the perirectal region, exit and tunnel sites of central venous access devices, upper and lower respiratory tracts, and urinary tract.

D) Monitor serum electrolytes, renal function, and hepatic enzymes.

E) Obtain a chest radiograph in patients with respiratory symptoms.

F) Serum methotrexate concentrations are available and can be used to guide the length of leucovorin therapy, however, initial treatment should not be delayed while waiting for methotrexate concentrations.

副作用/毒性

OVERVIEW

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檢視 POISINDEX 中的詳細資訊

ORAL/PARENTERAL EXPOSURE

A) MANAGEMENT OF MILD TO MODERATE TOXICITY

1) Administer intravenous leucovorin as soon as possible. Administer intravenous fluids. Treat persistent nausea and vomiting with several antiemetics of different classes. Begin alkaline diuresis with a bicarbonate infusion to prevent renal precipitation of methotrexate. Administer colony stimulating factors (filgrastim or sargramostim) as these patients are at risk for severe neutropenia. As toxicity is delayed for hours to days, the most critical intervention is to determine if the patient was exposed to a large enough dose to develop severe toxicity.

B) MANAGEMENT OF SEVERE TOXICITY

1) Administer intravenous leucovorin as soon as possible. Administer intravenous fluids. Begin alkaline diuresis with a bicarbonate infusion to prevent renal precipitation of methotrexate. Administer colony stimulating factors (filgrastim or sargramostim) as these patients are at risk for severe neutropenia. Transfusion of platelets and/or packed red cells may be needed in patients with severe thrombocytopenia, anemia, or hemorrhage. Severe nausea and vomiting may respond to a combination of agents from different drug classes. Glucarpidase (formerly known as carboxypeptidase CPDG2) rapidly catabolizes methotrexate to an inactive metabolite. It is available in the United States as lyophilized powder 1000 Units per vial. For emergency inquiries in the United States, contact 1-877-398-9829 for intravenous use or 1-888-327-1027 for intrathecal use. Dosage is an IV bolus of 50 Units/kg over 5 minutes.

副作用/毒性

OVERVIEW

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G) ANTIDOTE

1) LEUCOVORIN: It is generally recommended that doses of leucovorin equal to or greater than the ingested/infused dose of methotrexate be given. Ideally, the dose should be given within one hour of exposure, or as soon as possible (do not wait for blood methotrexate concentrations) over 15 to 30 minutes. A dose of 100 mg/m(2) IV leucovorin infused over 15 to 30 minutes every 3 to 6 hours for several days (until methotrexate concentration is less than 0.01 mcmol/L (1 x 10(-8) M) in patients not receiving methotrexate OR less than 0.05 to 0.1 mcmol/L in patients receiving methotrexate as chemotherapy) should be effective in most cases. In adults, the infusion rate should not exceed 160 mg/minute. Because methotrexate half-life is variable (5 to 45 hours) and is dependent on the dose and the patient's renal function, leucovorin therapy should be given for several days. If methotrexate levels are unavailable, leucovorin should be continued for 12 to 24 doses (3 days) or longer. NEVER administer leucovorin intrathecally. GLUCARPIDASE: Glucarpidase (formerly known as carboxypeptidase CPDG2) rapidly catabolizes methotrexate to an inactive metabolite. It is available in the United States as lyophilized powder 1000 Units per vial. For emergency inquiries in the United States, contact 1-877-398-9829 for intravenous use or 1-888-327-1027 for intrathecal use. Dosage is an IV bolus of 50 Units/kg over 5 minutes, or intrathecal administration of 2000 Units over 5 minutes.

H) MYELOSUPPRESSION

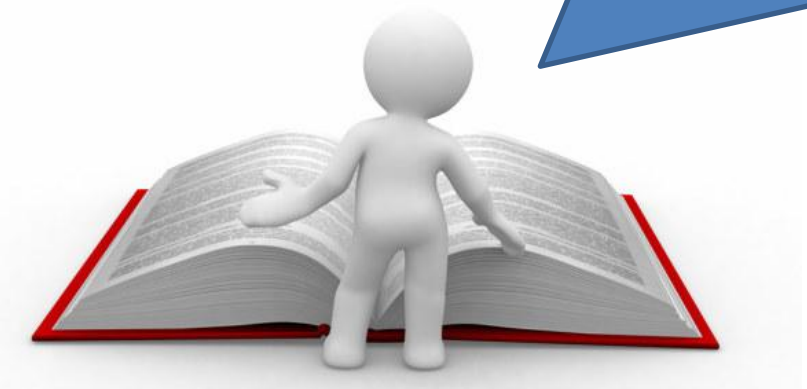
1) Administer colony stimulating factors as these patients are at significant risk for developing severe neutropenia. Filgrastim: 5 mcg/kg/day IV or subQ. Sargramostim: 250 mcg/m(2)/day IV over 4 hours. Monitor CBC with differential for evidence of bone marrow suppression. Transfusion of platelets and/or packed red cells may be needed in patients with severe thrombocytopenia, anemia or hemorrhage. Patients with severe neutropenia should be in protective isolation.

副作用/毒性

MTX的毒性可能表現為肝、肺毒性或急性腎衰竭，也可能造成胃腸道的潰瘍、腐蝕或胃炎，另外可能會有血液毒性，造成全血球低下。皮膚方面則可能有紅疹、燒灼感、脫皮、壞死及口腔潰瘍等，甚至可能造成Stevens-Johnson syndrome等嚴重不良反應。

副作用/毒性

治療方面除了停用 Methotrexate外，應盡快給予 Leucovorin，並給予含 Bicarbonate的輸液 ，以降低腎臟毒性。若患者發生嚴重白血球低下，可給予 G-csf，並投與抗生素以預防感染發生。血液毒性通常發生於用藥後7-9天，治療後約2周可回復，但若因過量造成毒害，可能延長恢復時間，應密切監測患者的生化血液數值。



CareNotes｜藥名發音

你會怎麼念？

Acetaminophen

Zolpidem Tartrate

Levetiracetam

Quetiapine

Atazanavir

Escitalopram

CareNotes｜藥名發音

你是這麼念的嗎？

Acetaminophen	(a-seet-a-MIN-oh-fen)
Zolpidem Tartrate	(zole-PI-dem TAR-trate)
Levetiracetam	(lee-va-tye-RA-se-tam)
Quetiapine	(kwe-TYE-a-peen)
Atazanavir	(a-ta-ZAN-a-vir)
Escitalopram	(es-sye-TAL-oh-pram)


Thank you for attention
And have a nice day