

一、請研讀以下兩則研究摘要並回答問題

甲、臺灣：Genetic susceptibility to carbamazepine-induced cutaneous adverse drug reactions
Pharmacogenet Genomics 2006;16:297-306.

The anticonvulsant carbamazepine (CBZ) frequently causes cutaneous adverse drug reactions (cADRs), including maculopapular eruption (MPE), hypersensitivity syndrome (HSS), Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN). We reported that SJS/TEN caused by CBZ is strongly associated with the *HLA-B*1502* gene in Han Chinese. Here, we extended our genetic study to different types of CBZ-cADRs (91 patients, including 60 patients with SJS/TEN, 13 patients with hypersensitivity syndrome and 18 with maculopapular exanthema versus 144 tolerant controls). We used MALDI-TOF mass spectrometry to screen the genetic association of 278 single nucleotide polymorphisms (SNPs), which cover the major histocompatibility complex (MHC) region, tumor necrosis factor- α , heat shock protein and CBZ-metabolic enzymes, including CYP3A4, 2B6, 2C8, 2C9, 1A2 and epoxide hydrolase 1. In addition, we genotyped 20 microsatellites in the MHC region and performed HLA-typing to construct the recombinant map. We narrowed the susceptibility locus for CBZ-SJS/TEN to within 86 kb flanking the *HLA-B* gene on the extended *B*1502* haplotype, and confirmed the association of *B*1502* with SJS/TEN [$P_c = 1.6 \times 10^{-41}$, odds ratio (OR)= 1357; 95% confidence interval (CI)=193.4-8838.3]. By contrast to CBZ-SJS/TEN, *HLA-B*1502* association was not observed in the MPE or HSS groups: MPE was associated with SNPs in the *HLA-E* region and a nearby allele, *HLA-A*3101* ($P_c = 2.2 \times 10^{-3}$, OR= 17.5; 95% CI= 4.6-66.5), and HSS with SNPs in the motilin gene ($P_c = 0.0064$, OR= 7.11; 95% CI= 3.1-16.5) located terminal to the MHC class II genes. No SNPs in genes involved in CBZ metabolism were associated with CBZ-induced cADRs. Our data suggest that *HLA-B*1502* could contribute to the pathogenesis of CBZ-SJS/TEN, and that genetic susceptibility to CBZ-induced cADRs is phenotypespecific.

乙、英國：*HLA-B* locus in Caucasian patients with carbamazepine hypersensitivity
Pharmacogenomics 2006;7:813-818.

BACKGROUND: A strong pharmacogenetic association has been reported in Chinese patients between human leukocyte antigen (*HLA*)-*B*1502* and carbamazepine (CBZ)-induced Stevens-Johnson syndrome (SJS). **METHODS:** We have genotyped the *HLA-B* alleles in 56 Caucasian patients with varying severities of CBZ hypersensitivity and 43 controls on CBZ without adverse effects. **RESULTS:** None of our patients (including two with blistering skin rashes) were positive for the *HLA-B*1502* allele. *HLA-B*0702* allele may protect against severe CBZ hypersensitivity but warrants further study. Of secondary interest, the correlation between *HLA-B*0801* and *HLA-DR3*, *DQ2* and *TNF-308* alleles (on the ancestral haplotype 8.1) is consistent with our previous findings. **CONCLUSION:** *HLA-B*1502* does not seem to be a marker for all forms of CBZ-induced hypersensitivity in a Caucasian population.

1. 請擇要將以上兩則摘要翻譯成中文。(15%)
2. 請闡述閱讀心得。藥師(應)可有那些應對處理之道?(15%)
3. 請分別說明對 anticonvulsants 及 pharmacogenomics 的瞭解或想法。(10%)

見背面

二、簡答題

1. 8個月大的張小弟因急性中耳炎就醫，由醫師處方口服 amoxicillin/ clavulanate potassium 糖漿（濃度 amoxicillin 80 mg/mL）400 mg every 12 hours，共服用 10 天。張小弟的母親帶著他來藥局領藥。請詳列藥師在覆核處方時應注意的事項。（5 %）
2. 承上題，請敘述在交付藥品給張小弟的母親時，藥師應提供的病患諮詢（請以第一人稱答題：『張媽媽您好，我是藥師．．．』；若對某些諮詢項目內容不確定、需進一步查詢參考資料，請特別標示並註明參考資料名稱）。（10 %）

三、複選題

下表最右欄是藥品學名，請由其中選擇應做為治療左欄中疾病之第一線或首選藥物（drug of choice），依序將數字填於答案卷上各題號之後，注意答案可能不只一個，最右欄中藥品學名可重複使用。答對一個得一分，每個錯誤答案倒扣 0.5 分。（15 %）

題號	答案	疾病	藥品
A	_____	Isolated systolic hypertension in the elderly	1. Amlodipine
B	_____	Hypertensive emergencies	2. Aspirin
C	_____	Hypertension in pregnancy	3. Atorvastatin
D	_____	Stage B heart failure	4. Captopril
E	_____	Diabetic dyslipidemia	5. Colchicine
F	_____	Acute gouty arthritis	6. Ethambutol
G	_____	Active tuberculosis	7. Hydrochlorothiazide
H	_____	Latent tuberculosis	8. Indomethacin
			9. Isoniazid
			10. Methyl dopa
			11. Metoprolol
			12. Nitroprusside
			13. Pyrazinamide
			14. Rifampin

四、簡答題

請根據以下論文摘要回答問題：

1. 哪些臨床藥事服務可改善住院病人的治療效果？（5 %）
2. 從閱讀這篇系統性回顧文章，在兼顧科學性與倫理考量下，什麼是評估住院病人臨床藥事服務最適當的研究設計？（5 %）

Clinical Pharmacists and Inpatient Medical Care: A Systematic Review

background: The role of clinical pharmacists in the care of hospitalized patients has evolved over time, with increased emphasis on collaborative care and patient interaction. The purpose of this review was to evaluate the published literature on the effects of interventions by clinical pharmacists on processes and outcomes of care in hospitalized adults.

Methods: Peer-reviewed, English-language articles were identified from January 1, 1985, through April 30, 2005. Three independent assessors evaluated 343 citations. Inpatient pharmacist interventions were selected if they included a control group and objective patient-specific health outcomes; type of intervention, study design, and outcomes such as adverse drug events, medication appropriateness, and resource use were abstracted.

Results: Thirty-six studies met inclusion criteria, including 10 evaluating pharmacists' participation on rounds, 11 medication reconciliation studies, and 15 on drug-specific pharmacist services. Adverse drug events, adverse drug reactions, or medication errors were reduced in 7 of 12 trials that included these outcomes. Medication adherence, knowledge, and appropriateness improved in 7 of 11 studies, while there was shortened hospital length of stay in 9 of 17 trials. No intervention led to worse clinical outcomes and only 1 reported higher health care use. Improvements in both inpatient and outpatient outcome measurements were observed.

Conclusions: The addition of clinical pharmacist services in the care of inpatients generally resulted in improved care, with no evidence of harm. Interacting with the health care team on patient rounds, interviewing patients, reconciling medications, and providing patient discharge counseling and follow-up all resulted in improved outcomes. Future studies should include multiple sites, larger sample sizes, reproducible interventions, and identification of patient-specific factors that lead to improved outcomes.

Kaboli PJ, Hoth AB, McClimon BJ et al, *Arch Intern Med.* 2006;166:955-964.

五、請就你對於急性心肌梗塞(Acute myocardium infarction, AMI)的瞭解，回答下列問題。

1. 造成 AMI 的危險因子？(5%)
2. AMI 發生時的臨床症狀及實驗數值？(5%)
3. AMI 急性期的藥品治療？(5%)
4. AMI 發生後，長期藥品使用的考量？(5%)

試題隨卷繳回