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ภาคผนวก

AN ALGORITHMS FOR THE OPERATIONAL ASSESSMENT OF ADVERSE DRUG REACTIONS (2)(3)(48)

AN ALGORITHM FOR THE OPERATIONAL ASSESSMENT OF ADVERSE DRUG REACTIONS(2) ดังรายละเอียดต่อไปนี้
ALGORITHM ประกอบด้วย 6 AXIS คือ

AXIS 1. PREVIOUS GENERAL EXPERIENCE WITH THE DRUG.

จุดประสงค์ของข้อนี้เพื่อดูว่ายาที่ผู้ป่วยได้รับนั้นเคยมีรายงานและเป็นที่ยอมรับแล้วว่าเป็นสาเหตุ ของการเกิดผืนแพ้ยาได้

AXIS 2. ALTERNATIVE ETIOLOGIC CANDIDATES.

จุดประสงค์ของข้อนี้คือเพื่อหาสาเหตุของการเกิดผืนในผู้ป่วยว่าเกิดจากสาเหตุอื่นที่ไม่ใช่การแพ้ ยาได้หรือไม่ เช่น เกิดจาก Underlying clinical conditions, diagnostic or therapeutic interventions เป็นต้น AXIS 3. TIMING OF EVENTS.

จุดประสงค์ของข้อนี้คือการพิจารณาความเหมาะสมและความเป็นไปได้ว่าระยะเวลาตั้งแต่การได้ รับยาจนถึงการเกิดฝืนในผู้ป่วยนั้นอยู่ในช่วงเวลาที่เหมาะสมเป็นไปได้หรือไม่

AXIS 4. DRUG LEVELS AND EVIDENCE OF OVERDOSE.

จุดประสงค์ของข้อนี้เพื่อช่วยตัดสิบว่า อาการแสดงทางคลินิคของผู้ป่วยนั้นเกิดจาก OVERDOSE หรือไม่

AXIS 5. DECHALLENGE ข้อนี้ยังแบ่งย่อยออกเป็น 3 ส่วนดังนี้

5A DIFFICULT ASSESSMENTS.

AXIS นี้หมายถึงในกรณีที่ Clincal manifestations that are diffult or impossible to assess because they are either irreversible or transient and episodic และยังรวมถึงกรณีที่เมื่อหยุดยาแล้วฝืนในผู้ป่วยก็ยังไม่ ดีขึ้นหรือยังไม่หายหลังจากหยุดยาที่คิดว่าเป็นสาเหตุแล้ว

5B. ABSENCE OF DECHALLENGE.

AXIS นี้หมายถึงในกรณีที่ฝืนหรืออาการแสดงทางคลีนิคของผู้ป่วยมีการเปลี่ยนแปลงในทางที่ดีขึ้น แม้ว่ายังไม่ได้หยุดยาที่คิดว่าเป็นสาเหตุซึ่งในกรณีนี้ผู้ป่วยอาจเกิด TOLERANCE ต่อยาหรือได้รับการรักษา อื่น ๆที่สามารถช่วยลด SEVERITY OF CLINICAL MANIFESTATION ได้

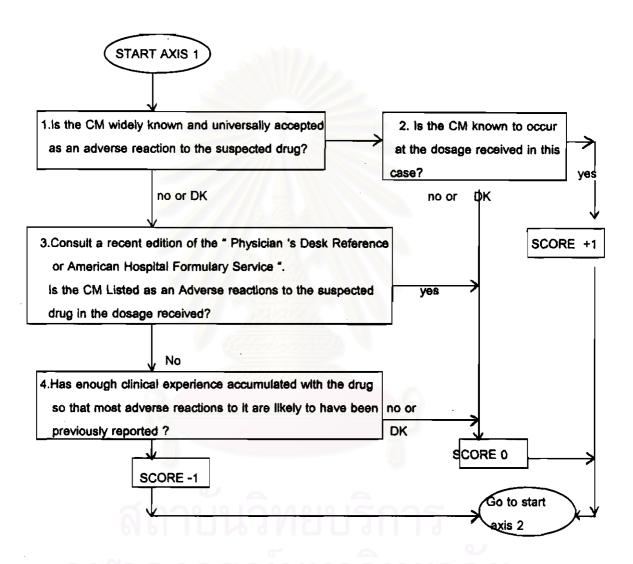
5C. IMPROVEMENT AFTER DECHALLANGE.

AXIS นี้หมายถึงในกรณีที่อาการแสดงทางคลีนิคของผู้ป่วยดีขึ้นหลังจากที่ได้หยุดยาที่คิดว่าเป็น สาเหตุแล้วซึ่งอาจจะเกิดจาก COINCIDENTAL IMPROVEMENT IN A GOOD ALTERNATIVE ETIOLOGIC CANDIDATE.

AXIS 6. RECHALLANGE.

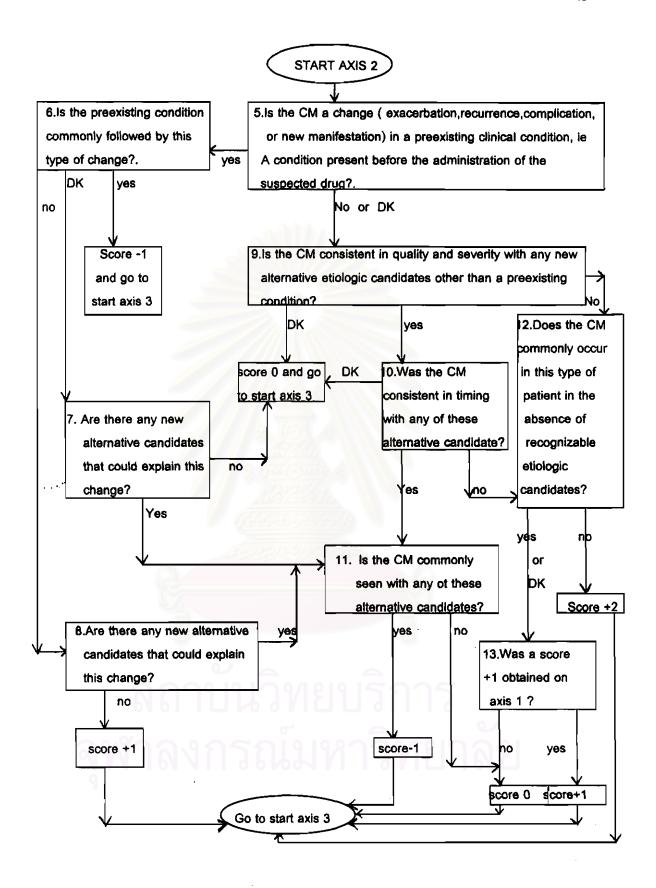
ข้อนี้เป็น FINAL AXIS โดยการให้ผู้ป่วยได้รับยาที่คิดว่าเป็นสาเหตุเข้าไปอีกครั้งหนึ่งแล้วดูว่าเกิดผืน ขึ้นอีกครั้งหรือไม่ ซึ่งหากเกิดผืนขึ้นใหม่ต้องพิจารณาด้วยว่ามีสาเหตุอื่น ๆที่เป็นไปได้ร่วมอยู่หรือไม่ เช่น NEW CLINICAL CONDITIONS OR RECENT INTERVENTIONS เป็นต้น

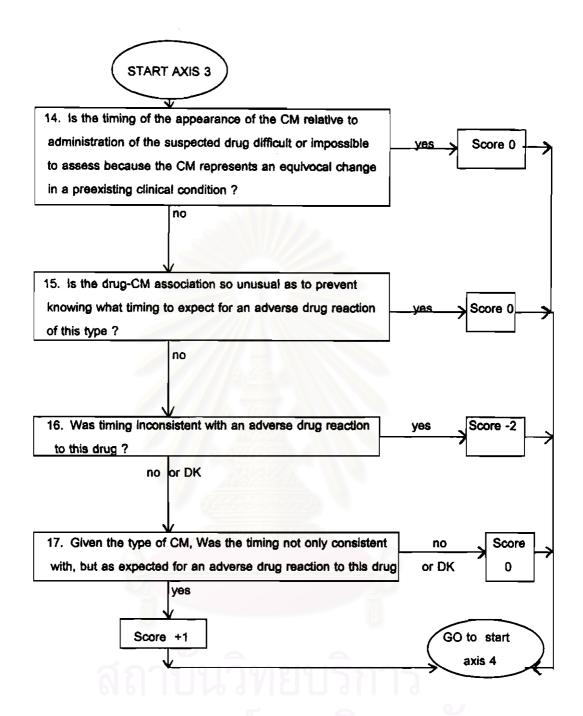
โดยในแต่ละ AXIS จะให้คะแนน +1, 0, -1 (ยกเว้น AXIS 2, AXIS 3 ที่จะมีคะแนน +2, +1, 0, -1, -2) โดยขั้นตอนการให้คะแนนในแต่ละ AXIS ดังแสดงในแผนภูมิต่อไปนี้

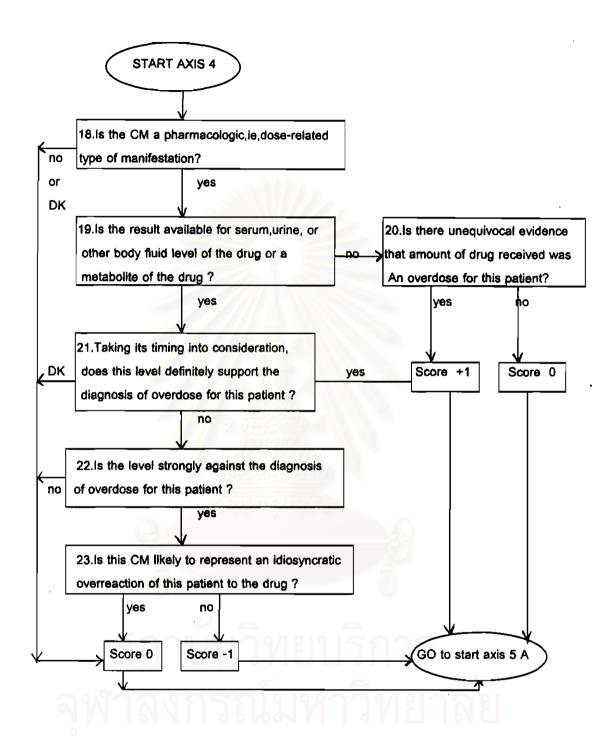


Consult "MARTINDALE The Extra Pharmacopoeia twenty-nine edition " in this project.

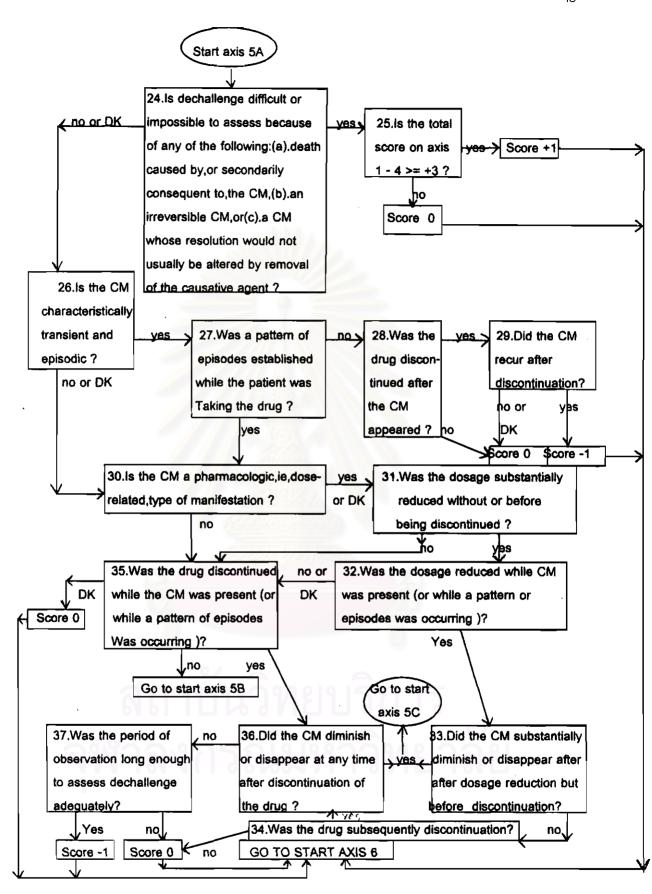
DK = DO NOT KNOW, CM = CLINICAL MANIFESTATION

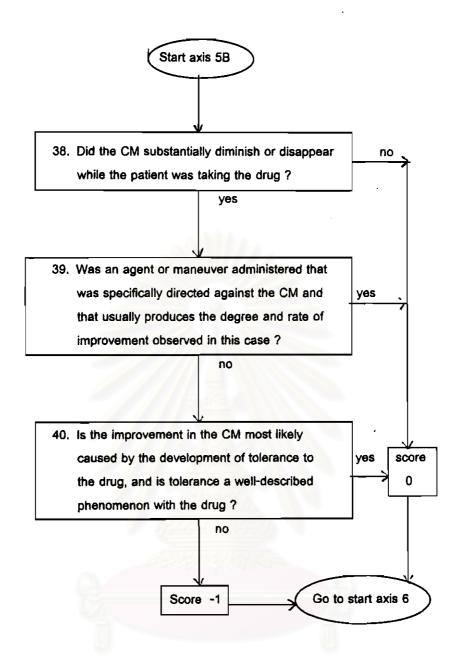


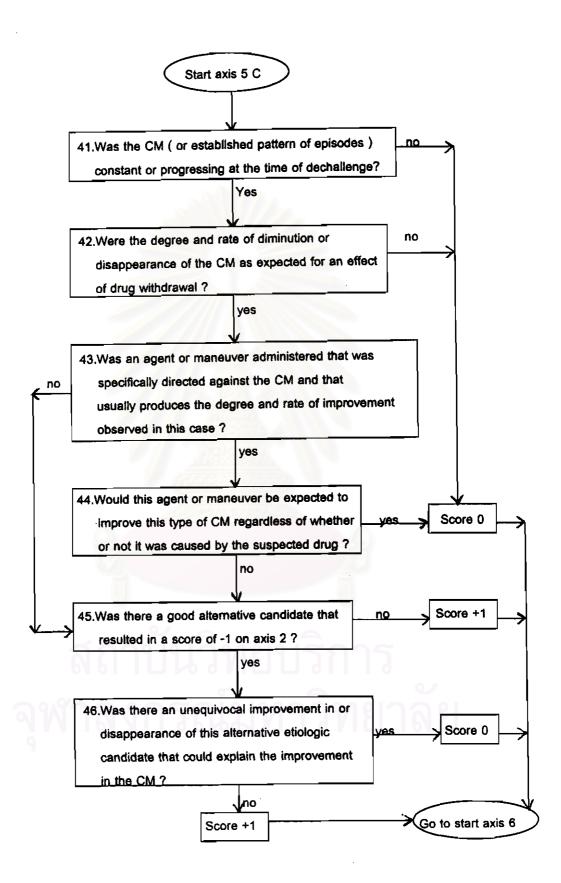


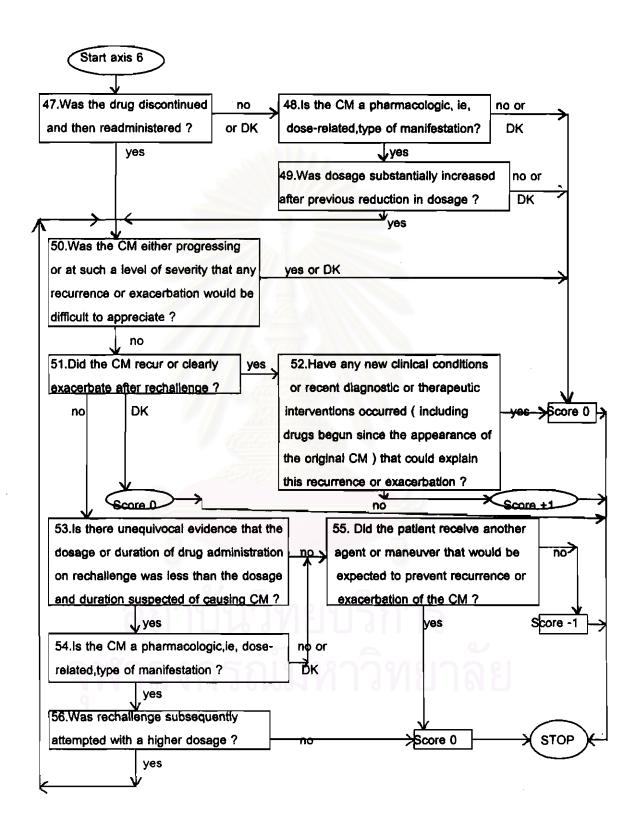


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OUTLINE OF SCORING STRATEGY

+1

0

-1

Axis 1	CM well accepted as	CM is not well known	CM previously unreported
	ADR to suspected drug	or drug is new	as ADR to well-known drug
Axis 2	(a).No good alternative candidate(score +2); or (b).Otherwise unexplained exacerbation or recurrence of underlying illness (score +1)	Candidate(s) exist, but no good ones	Good alternative candidate
Axis 3	Timing as expected for ADR for this drug-CM pair	Timing equivocal or nonassessable	Timing Inconsistent for ADR for this drug-CM pair (score -2)
Axis 4	Drug level or other data provide unequivocal evidence of overdose	Unobtained,unknown, or equivocal level or other evidence of overdose	Drug level strongly against overdose
Axis 5	(a).CM improves suitably after dechallenge; or (b).Nature of CM prevent assessment of dechallenge for otherwise likely ADR	(a).CM improved,but degree or rate are unexpected; or (b).CM is treated by auxillary maneuver	(a).CM improves without dechallenge; or (b).Potentially reversible CM fails to improve after dechallenge
Axis 6	CM unequivocally recurs o exacerbates on rechallenge	_	CM fails to recur or exacerbate on rechallenge

CM = indicates clinical manifestation		ADR = adverse drug reaction						
AXIS	1	2	3	4	5	6	TOTAL	
SCORE		+ - +	-		+ 🗀+		=	3
		SCORING	TRANS	FORMA	TION			
NUMERICA	AL SCOP	RE		OF	RDINAL	CATEGO	RY	
+7	',+6				DEFIN	NTE		
+5	i,+4				PROB	ABLE		
+3,+2	2,+1,0				POSS	SIBLE		
•	< 0				UNLI	KELY		

ชึ่งจากการใช้ ALGORITHM นั้นจะสามารถช่วยสรุปยาที่เป็นสาเหตุของการแพ้ยาได้ดังที่ได้ บรรยายไว้ดังข้างต้นแล้ว ส่วนในกรณีที่ผู้ป่วยได้ยาหลายชนิด (MULTIPLE DRUGS) ก็อาศัยการให้ คะแนนยาแต่ละชนิดที่ผู้ป่วยได้รับตาม ALGORITHM ยาชนิดใดได้คะแนนมากที่สุดก็น่าจะเป็นยาที่ เป็นสาเหตุการแพ้ยามากที่สุดในผู้ป่วยแต่ละคน โดยโครงการวิจัยนี้ก็จะใช้ ALGORITHM ในการ ตัดสินว่าผู้ป่วยแพ้ยาหรือไม่ และ ยาใดน่าจะเป็นสาเหตุมากที่สุด

ขั้นตอนการตอบคำถามใน Aigorithm

1.Previous General Experience With the Drug

1.Is the CM widely known and universally accepted as an ADR to the suspected drug?

yes go to question 2

• no or DK go to question 3

2.Is the CM known to occur at the dosage received in this case ?

yes score +1 in Axis 1 box and go to question 5

no or DK score 0 in Axis 1 box and go to question5

3.Consult a recent edition of the Physicians'Desk Reference or American Hospital Formulary Service (Consult "Martindale The Extrapharmacopoeia twenty-nine edition " in this project). Is the CM listed as an ADR to the suspected drug in the dosage received?

yes score 0 in Axis 1 box and go to question 5

no go to question 4

4. Has enough clinical experience accumulated with the drug so that most ADRs to it are very likely to have been previously reported?

yes score -1 in Axis 1 box and go to question 5

no or DK
 score 0 in Axis 1 box and go to question 5

2. Alternative Etiologic Candidates

5.Is the CM a change (exacerbation,recurrence,complication,or new manifestation)in a preexistion clinical condition,ie,a condition present before the administration of the suspected drug?

yes go to question 6

• no or DK go to question 9

6.Is the preexistion condition commonly followed by this type of change ?

yes score -1 in Axis 2 box and go to guestion 14

DK go to question 7

no go to question 8

7.Are there any new alternative candidates (illnesses developing after the suspected drug was begun or recent diagnosistic or therapeutic interventions apart from the suspected drug or orther drugs)that could explain this change?

• yes go to question 11

no score 0 in Axis 2 box and go to question 14

8.Are there any new alternative candidates (illnesses developing after the suspected drug was begun or recent diagnostic or therapeutic interventions apart from the suspected drug or other drugs)that could explain this change?

• yes go to question 11

no score +1 in Axis 2 box and go to question 14

9.Is the CM consistent in quality and severity with any new alternative etiologic candidates other than a preexistion condition,ie,illnesses developing after the suspected drug was begun or recent diagnostic or therapeutic interventions apart from the suspected drug or other drugs?

• yes go to question 10

DK score 0 in Axis2 box and go to question 14

no go to question 12

10. Was the CM consistent in timing with any of these alternative candidates?

yes
 go to question 11

DK score 0 in Axis 2 box and go to question 14

no go to question 12

11.Is the CM commonly seen with any of these alternative candidates?

yes score -1 in Axis 2 box and go to question 14

no score 0 in Axis 2 box and go to question 14

12.Does the CM commonly occur in this type of patient in the absence of recognizable etiologic candidates ?(Examples of such phenomena include headache,fatigue,and anxiety).

yes or DK
 go to question 13

no
 score +2 in Axis 2 box and go to question 14

13. Was a score of +1 obtained on Axis 1?

yes
 score +1 in Axis 2 box and go to question 14

no score 0 in Axis 2 box and go to question 14

3. Timing of Events

14.Is the timing of the appearance of the CM relative to administration of the suspected drug difficult or impossible to assess because the CM represents an equivocal change in the preexisting clinical condition?

yes score 0 in Axis 3 box and go to question 18

no go to question 18

15.Is the drug-CM association so unusual as to prevent knowing what timing to expect for an ADR of this type ?

yes score 0 in Axis 3 box and go to question 18

no go to question 16

16. Was the timing inconsistent with an ADR to this drug?

yes score -2 in Axis 3 box and go to question 18

no or DK go to question 17

17. Given the type of CM, was the timing not only consistent with, but as expected for ADR to this drug?

- yes score +1 in Axis 3 box and go to question 18
- no or DK score 0 in Axis 3 box and go to question 18
- 4.Drug Levels and Evidence of Overdose

18.ls the CM a pharmacologic, ie, dose-related, type of manifestation?

- yes go to question 19
- no or DK
 score 0 in Axis 4 box and go to question 24

19.Is the result available for serum,urine,or other body fluid level of the drug or a metabolite of the drug?

- yes go to question 19
- no go to question 20

20.Is there unequivocal evidence that the amount of drug received was an overdose for this patient, eg, a blood glucose level of 30 mg/dl in a patient receiving insulin or discovery of an empty pill bottle of a newly filled prescription for the suspected drug?

- yes score +1 in Axis 4 box and go to question 24
- no score 0 in Axis 4 box and go to question 24

21. Taking its timing into consideration, does this level definitely support the diagnosis of an overdose for this patient?

- yes score +1 in Axis 4 box and go to question 24
- no go to question 22
- DK score 0 in Axis 4 box and go to question 24

22.Is the level strongly against the diagnosis of overdose for this patient?

- yes go to question 23
- no score 0 in Axis 4 box and go to question 24

23.Is this CM likely to represent an idiosyncratic overreaction of this patient to the drug?

- yes score 0 in Axis 4 box and go to question 24
- no score -1 in Axis 4 box and go to question 24

5.Dechallenge

24.ls dechallenge difficult or impossible to assess because of any of the following ?

- a. Death caused by,or secondarily consequent to,the CM.
- b. An irreversible CM,eg,optic atrophy,aplastic anemia,loss of a limb.

c. A CM whose resolution would not usually be alterred by removal of the causative agent,eg,stroke,myocardial infarction (since,in these examples,the resolution of the organ damage would be expected to be independent of drug withdrawal.)

yes

go to question 25

• no

go to question 26

25.Is the total score on Axis 1 through 4 >= +3?

yes

score +1 in Axis 5 box and go to question 47

• no

score 0 in Axis 5 bos and go to question 47

26.Is the CM characteristically transient and episodic,eg,seizures,syncope,classic angina pectoris? "Characteristically transient and episodic " mean that the phenomenon,by its very nature,almost always resolves quickly and spontaneously. CMs that eventually show themselves as self-limited or that gradually subside on their own (eg,dyspnea,gastrointestinal bleeding,ataxia)would thus not qualify as characteristically transient and episodic and should receive a "no" response.

yes

go to question 27

• no or DK

go to question 30

27. Was a pattern of episodes established while the patient was taking the drug?

yes

go to question 30

• no

score 0 in Axis 5 box and go to question 47

28. Was the drug discontinued after the CM appeared?

yes

go to question 29

• no

score 0 in Axis 5 box and go to question 47

29.Did the CM recur after discontinuation?

yes

score -1 in Axis 5 box and go to question 47

no or DK

score 0 in Axis 5 box and go to question 47

30.Is the CM a pharmacologic, le, dose-related, type of manifestation?

yes or DK

go to question 31

• no

go to question 35

31. Was the dosage substantially reduced without or before being discontinued?

yes

go to question 32

no

go to question 35

32. Was the dosage reduced while the CM was present (or while a pattern of episodes was occurring)?

yes

go to question 33

no or DK

go to question 35

33.Did the CM substantially diminish or disappear after dosage reduction but before complete discontinuation?

yes go to question 41

• no go to question 34

34. Was the drug subsequently discontinued?

yes go to question 36

no score 0 in Axis 5 box and go to question 47

35. Was the drug discontinued while the CM was present (or while a pattern of episodes was occurring)?

yes go to question 36

DK score 0 in Axis 5 box and go to question47

• no go to question 38

36.Did the CM diminish or disappear at any time after discontinuation of the drug use ?

yes go to question 41

no go to question 37

37. Was the period of ovservation long enough to be sure that the CM would not subsequently diminish or disappear in a time compatible with an effect of drug withdrawal?

yes score -1 in Axis 5 box and go to question 47

no score 0 in Axis 5 box and go to question47

38.Did the CM substantially diminish or disappear while the patient was taking the drug?

yes go to question 39

no score 0 in Axis 5 box and go to question 47

39. Was an agent or maneuver administered that was specifically directed against the CM and that usually produces the degree and rate of improvement observed in this case? (A nonspecific therapeutic measure would not qualify for "YES" response to this question. Thus, the administration of intravenous fluids would result in a "NO" response if the CM were coma caused by a drug overdose but a "YES" response if the CM were dehydration.)

yes score 0 in Axis 5 box and go to question 47

no go to question 40

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40.Is the improvement in the CM most likely caused by the development of tolerance to the drug, and is tolerance a well-described phenomenon with the drug?

yes score 0 in Axis 5 box and go to question 47

no score -1 in Axis 5 box and go to question 47

41. Was the CM(or the established pattern of episodes) constant or porgressing at the time of dechallenge?

yes go to question 42

no score 0 in Axis 5 box and go to question47

42. Were the degree and rate of diminution or disappearance of the CM as expected for an effect of drug withdrawal?

• yes go to question 43

no score 0 in Axis 5 box and go to question 47

43. Was an agent or maneuver administered that was specifically directed against the CM and that usually produces the degree and rate of improvement observed in this case ?(A nonspecific therapeutic measure would not qualify for a "Yes" response to this question. Thus, the administration of intravenous fluid would result in a "No" response if the CM were coma caused by a drug overdose but a "Yes" response if the CM were dehydration.)

yes go to question 44

no go to question 45

44. Would this agent or maneuver be expected to improve this type of CM regardless of whether or not it was caused by the suspected drug? (The administration of a narcotic antagonist to a patient with a CM of coma caused by morphine overdose would result in a "No" response, because the narcotic antagonist will only improve coma if it is caused by a narcotic.)

yes score 0 in Axis 5 box and go to question 47

no go to question 45

45. Was there a good alternative etiologic candidate that resulted in a score of -1 on

yes go to question 46

no score +1 in Axis 5 box and go to question 47

46. Was there an unequivocal improvement in or disappearance of this alternative etiologic candidate that could explain the improvement in the CM?

yes score 0 in Axis 5 box and go to question 47

no score +1 in Axis 5 box and go to question 47

6.Rechallenge

Axis2?

47. Was the drug discontinued and then readministered?

yes go to question 50

no go to question 48

48.Is the CM a pharmacologic, ie, dose-related, type of manifestation?

yes go to question 49

no score 0 in Axis 6 box and go to question57

49. Was the dosage substantially increased after previous reduction in dosage?

yes go to question 50

no or DK score 0 in Axis 6 box and go to question 57

50. Was the CM either progressing or at such a level of severity that any recurrence or exacerbation would be difficult to appreciated?

yes score 0 in Axis 6 box and go to question 57

• no go to question 51

51.Did the CM recur or cleary exacerbate after rechallenge?

yes go to question 52

• no go to question 53

DK score 0 in Axis 6 box and go to question 57

52. Have any new clinical conditions or recent diagnostic or therapeutic interventions occurred (including drugs begun since the appearance of the original CM) that could explain this recurrence or exacerbation?

• yes score 0 in Axis 6 box and go to question 57

• no score +1 in Axis 6 box and go to question 57

53.Is there unequivocal evidence that the dosage or duration of drug administration on rechallenge was less than the dosage and duration suspected of causing the original CM?

yes go to question 54

no go to question 55

54.Is the original CM a pharmacologic, ie, dose-related, type pf manifestation?

yes go to question 56

• no go to question 55

55.Did the patient receive another agent or maneuver that would be expected to prevent recurrence or exacerbation of the CM?

yes score 0 in Axis 6 box and go to question 57

• no score -1 in Axis 6 box and go to question 57

56. Was rechallenge subsequently attempted with a higher dosage?

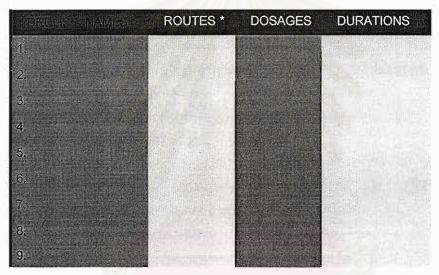
yes go back to question 50

no score o in Axis 6 box and go to question 57

57. Stop reading the questionjaire, add up the scores in the six axis boxed on the cover sheet, and place the sum in the box marked "Total".

CASE NO	
DATE	

การซักประวัติและตรวจร่างกาย	
ชื่ออาชีพ	
เพศ ()1.ชาย ()2.หญิง อายุHNAN	
()1.ผู้ป่วยนอก ()2.ผู้ป่วยใน แผนก	
1.เจ็บป่วยด้วยโรคหรืออาการใดก่อนได้รับยา(CONCURRENT ILLNESS)	.



ROUTES* 1.TOPICAL 2.ORAL 3.INJECTION
4.เคยได้ยาในข้อ3.มาก่อนหรือไม่ ()1.เคย ()2.ไม่เคย
5.ยาในข้อ3.ได้มาจาก ()1.คลีนิก ()2.ร้านขายยา ()3.รพ.จุฬา ()4.รพ.อื่น
6.มีประวัติภูมิแพ้หรือไม่(ATOPY) ()1.มี ()2.ไม่มี

การตรวจร่างกาย

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1.ลักษณะฝืน——————
2.%BODY SURFACE AREAS INVOLVEMENT
3.MUCOSAL INVOLVEMENT ()1.มี ()2.ไม่มี
4.อาการคัน ()1.มี ()2.ไม่มี
5.NAIL CHANGE ()1.มี ()2.ไม่มี
ถ้ามีเป็นแบบใด ()1.0NYCHOLYSIS ()2.STAINING ()3.DYSTROPHY
()4.BEAU'LINE ()5.ONYCHOMADESIS ()6.YELLOW NAIL
()7.RED LUNULAE ()8.MEE'S LINE ()9.BLUE LUNULAE ()10.OTHER
6.HAIR CHANGE ()1.มี ()2.ไม่มี
ถ้ามี ()1.TELOGEN EFFUVIUM ()2.ANAGEN EFFUVIUM ()3.OTHERS
7.SYSTEMIC SYMPTOMS ()1.CONJUNCTIVITIS ()2.HEPATOMEGALY
()3.SPLENOMEGALY ()4.LYMPHADEONOPATHY ()5.ARTHRALGIA
()6.FEVER ()7.OTHERS
8.ถ้าเป็นผู้ป่วยนอกต้องนอนโรงพยาบาลหรือไม่ ())1.นอน ()2.ไม่ต้องนอน
9.ถ้านอนต้องอยู่รพ.นานที่วัน
10.ฝืนหายภายในกี่วันหลังหยุดยา
11.มีCOMPLICATION หรือไม่ ()1.มี ()2.ไม่มี
ถ้ามี ()1.CORNEAL SCAR ()2.BLINDNESS ()3.PERFORATION OF BULB
()4.ESOPHAGITIS ()5.ESOPHAGEAL STRICTURE ()6.SCARS
()7.CONTRACTURE SCAR ()8.HYPOPIGMENTATION
()9.HYPERPIGMENTATION ()10.OTHERS
12.NA SKIN BIOPSY
13.การรักษาที่ได้รับ ()1.TOPICAL STEROID ()2.ORAL ANTI-HISTAMINE
()3.ORAL STEROID ()4.OTHERS

ประวัติผู้เขียน

พญ.มลเนตร รัตภาสกร เกิดเมื่อวันที่ 18 มิถุนายน 2512 ที่จังหวัดสุพรรณบุรี สำเร็จ การศึกษาแพทยศาสตร์บัณฑิตจากคณะแพทย์ศาสตร์ศิริราชพยาบาลมหาวิทยาลัยมหิดล เมื่อปี พ.ศ. 2536 ได้เข้าทำงานในตำแหน่งแพทย์ใช้ทุนที่ รพ. ธรรมศาสตร์ คณะแพทยศาสตร์ มหาวิทยาลัยธรรมศาสตร์ เมื่อวันที่ 1 เมษายนพ.ศ. 2536 เป็นเวลา 2 ปี และได้ลาออกเพื่อมา ศึกษาต่อระดับปริญญาโท ภาควิชา อายุรศาสตร์ สาชาวิชาตจวิทยา เมื่อวันที่ 1 มิถุนายน พ.ศ. 2538

