ER-Infection Combined Meeting

A 44 y/o Man,

Short of breathness for 2 weeks

R1 陳穎玲
指導Vs:陳威宇
2013/04/20

VISIT ER AT 05:54

- 主述:呼吸短促
- Triage I
- TPR 37.4/138/30 BP 106/67 SpO_2 70%
- E4V5M6

Chief Complaint

Short of breathness for 2 weeks,progress tonight

Present illness

Cough with sputum
Fever intermittent X 1 wk
No chest pain
林口長庚:PN,昨AAD(沒床)

Past History

Nil.
Allergy:Nil

PE

- Conscious E4V5M6
- Eye:Not pale
- Bilateral rales,crakles
- Abd:soft
- Limbs:No edema

Impression

Pneumonia

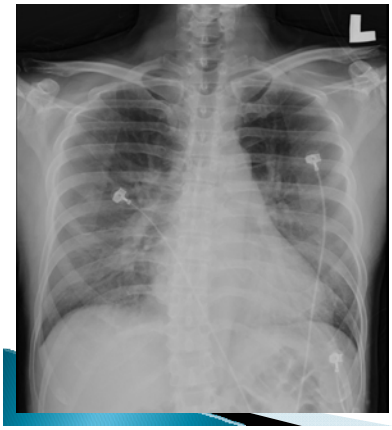
Management

On monitor
O2 Mask 10L/min
B/C x2
ABG4
F/S(109)
HB,WBC/DC,PLT
BCS,CRP
NS 500cc iv challenge
Then 60cc/hr
EKG
CXR(p)

Blood Gas at O2 10L/min

PH=7.420
PCO2=33.1 mmHg
PO2=51 mmHg
BE=-3 mmol/L
HCO3=21.4 mmol/L
TCO2=22 mmol/L
SO2=87 %
LAC=15.3 mg/dL

day1 Chest Film(Portable)



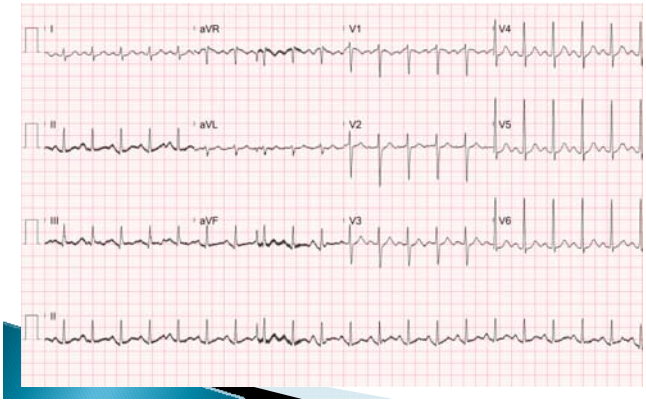
Q:

1.甚麼 pattern?(Alveolar,Interstitial)

2.有甚麼疾病的可能性?

3.你還要問甚麼?

EKG



Laboratory Data

Hb	15.0	gm/dl
WBC	11.6	x1000/ul
Differential count	**********	
Segmented Neutro.	75.0	%
Lymphocyte	16.0	%
Monocyte	8.0	%
Eosinophil	0.0	%
Basophil	0.0	%
Atypical lymphocyte	0.0	%
Band	1.0	%
Metamyelocyte	0.0	%
Myelocyte	0.0	%
Promyelocyte	0.0	%
Blast	0.0	%
Nucleated RBC	0.0	/100WBC
Platelet	382	x1000/ul

GOT(AST)	44	U/L
BUN	15	mg/dL
Creatinine	0.89	mg/dL
eGFR	92.86	
Na	136	meq/L
K	3.9	meq/L
CRP	9.580	mg/dL

Impression

- Bilateral Pneumonia with Respiratory Distress

Management

Q:

1. 這個病人是HAP,HCAP還是CAP(community acquired pneumonia)?

2.要給甚麼antibiotics?

3.考慮菌種?

4.還要做甚麼檢查?

Tx: Piperacillin 2gm IV Q6H

檢查:

Urine legionella Ag,Urine pneumococcus Ag Sputum Culture X 2,Flu rapid test , HIV screen,Sputum Acid fast stain

Clinical Course

- HIV screen:positive
- Leginella Ag:Negative
- S.pneumonia Ag:Negative

1.HIV + pneumonia:你想到甚麼?
2.治療要改嗎?改甚麼?
3.還要做甚麼檢查?

Pnueumonia in HIV patient

- Bacterial Pneumonia: Streptococcus.Pneumonia,Hemophillus Influenza,S.aerus
- Pneumocystis jirovecii pneumonia(PJP): Commonest Opportunistic Infection
- TB
- Viral Infection

這個病人比較像甚麼?

Hospital Course

Infection ward admission:

Tx:

- Tazocin 4.5g iv Q6H
- Erythromycin 1g iv Q6H
- Sevatrim 3amp iv Q6H
- Solu-Tisone 100mg iv Q12h

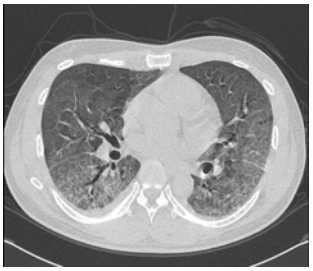
Hospital Course

day1	入住病房
day3	Western Blot:Positive,通報CDC.Check Syphylis,HBV,Toxoplamosis Ag,CMV IgG
day4	Lung HRCT, CD4 cell count:55 Syphilis TPPA(+),CMV IgG(+)
day7	Ceftrazidime 2g iv Q8H
day8	Ganciclovir 250mg iv Q12H
day10	AAD to 北榮

Lung HRCT

- Diffuse ground-glass opacities in both lungs.
- Interlobular septal thickening/reticulation noted more apparent at posterior lower lungs; tiny centrilobular airspace opacities present.

Opportunistic infection such as PJP is compatible.



Final Diagnosis

- Pneumonia,impending respiratory failure

Suspect pneumocystitis jirovecu pneumonia

Suspect CMV retinitis

- AIDS
- HIV infection
- Syphyilis
- Oral Thrush

Discussion

1.在ER診斷CAP,動向 還有pitfall

Community Acquired Pneumonia:2012 Guideline

2.Back to our case.

HIV with pulmonary infection:CXR表現

PCP 診斷

3.Other case 分享

4.Take Home Message

Community Aquired Pneumonia

- 定義:

肺實質的急性感染，發生在**未住院或住院未滿48小時**之病人。病患胸 部X光片上有新出現之浸潤，同時表現出急性感染的症狀，如發熱、咳嗽（有痰或沒痰）胸部不 適、氣促…

- 排除HAP,HCAP

Hospital -Aquired ,HealthCare-Associated

- HAP: 住院48小時後，或上次住院結束後14天之內發生之肺實質的急性感染。
- HCAP:在90天內曾在急性病醫院住院大於二天以上者、住在安養院或長期照護機構的患者、30天內接受針劑抗生素、化療、傷口照護的病患，洗腎的病人。

肺炎臨床診療指引 2007 台灣感染醫學會,胸腔暨重症加護醫學會,國家衛生院

Recommended empirical antibiotics for community acquired pneumonia(部分)

1. Previously healthy and no use of antimicrobials within the previous 3 months
- A macrolide (strong recommendation; level I evidence)
- Doxycyline (weak recommendation; level III evidence)

2. Presence of comorbidities such as chronic heart, lung, liver or renal disease; diabetes mellitus; ~~alcoholism; malignancies;~~ asplenia; immunosuppressing conditions or use of immunosuppressing drugs; or use of antimicrobials within the previous 3 months

- A respiratory fluoroquinolone (moxifloxacin, gemifloxacin, or levofloxacin [750 mg]) (strong recommendation; level I evidence)
- A b-lactam plus a macrolide (strong recommendation; level I evidence)

Epidemiologic conditions and/or risk factors related to specific pathogens in community-acquired pneumonia.

Condition	Commonly encountered pathogen(s)
Alcoholism	*Streptococcus pneumoniae*, oral anaerobes, *Klebsiella pneumoniae*, *Acinetobacter* species, *Mycobacterium tuberculosis*
COPD and/or smoking	*Haemophilus influenzae*, *Pseudomonas aeruginosa*, *Legionella* species, *S. pneumoniae*, *Moraxella catarrhalis*, *Chlamydophila pneumoniae*
Aspiration	Gram-negative enteric pathogens, oral anaerobes
Lung abscess	CA-MRSA, oral anaerobes, endemic fungal pneumonia, *M. tuberculosis*, atypical mycobacteria
Exposure to bat or bird droppings	*Histoplasma capsulatum*
Exposure to birds	*Chlamydophila psittaci* (if poultry: avian influenza)
Exposure to rabbits	*Francisella tularensis*
Exposure to farm animals or parturient cats	*Coxiella burnetti* (Q fever)
HIV infection (early)	*S. pneumoniae*, *H. influenzae*, *M. tuberculosis*
HIV infection (late)	The pathogens listed for early infection plus *Pneumocystis jirovecii*, *Cryptococcus*, *Histoplasma*, *Aspergillus*, atypical mycobacteria (especially *Mycobacterium kansasii*), *P. aeruginosa*, *H. influenzae*
Hotel or cruise ship stay in previous 2 weeks	*Legionella* species
Travel to or residence in southwestern United States	*Coccidioides* species, *Hantavirus*
Travel to or residence in Southeast and East Asia	*Burkholderia pseudomallei*, avian influenza, SARS
Influenza active in community	Influenza, *S. pneumoniae*, *Staphylococcus aureus*, *H. influenzae*
Cough >2 weeks with whoop or posttussive vomiting	*Bordetella pertussis*
Structural lung disease (e.g., bronchiectasis)	*Pseudomonas aeruginosa*, *Burkholderia cepacia*, *S. aureus*
Injection drug use	*S. aureus*, anaerobes, *M. tuberculosis*, *S. pneumoniae*
Endobronchial obstruction	Anaerobes, *S. pneumoniae*, *H. influenzae*, *S. aureus*
In context of bioterrorism	*Bacillus anthracis* (anthrax), *Yersinia pestis* (plague), *Francisella tularensis* (tularemia)

Recommendation for diagnostic test

- Routine diagnostic tests to identify an etiologic diagnosis are optional for outpatients with CAP. (Moderate recommendation; level III evidence.)
- Patients with severe CAP, should at least have blood samples drawn for culture, urinary antigen tests for Legionella pneumophila and Streptococcus pneumoniae performed, and expectorated sputum samples collected for culture. (Moderate recommendation; level II evidence.)

Clinical indications for more extensive diagnostic testing

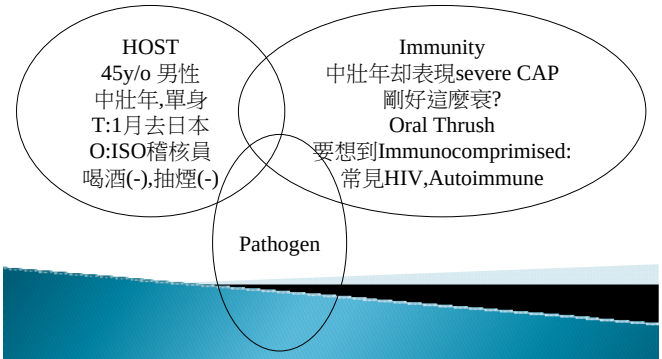
Indication	Blood culture	Sputum culture	*Legionella* UAT	Pneumococcal UAT	Other
Intensive care unit admission	X	X	X	X	X[a]
Failure of outpatient antibiotic therapy		X	X	X	
Cavitary infiltrates	X	X			X[b]
Leukopenia	X			X	
Active alcohol abuse	X	X	X	X	
Chronic severe liver disease	X			X	
Severe obstructive/structural lung disease		X			
Asplenia (anatomic or functional)	X			X	
Recent travel (within past 2 weeks)			X		X[c]
Positive *Legionella* UAT result		X[d]	NA		
Positive pneumococcal UAT result	X	X		NA	
Pleural effusion	X	X	X	X	X[e]

NOTE. NA, not applicable; UAT, urinary antigen test.
[a] Endotracheal aspirate if intubated, possibly bronchoscopy or nonbronchoscopic bronchoalveolar lavage.
[b] Fungal and tuberculosis cultures.
[c] See table 8 for details.
[d] Special media for *Legionella*.
[e] Thoracentesis and pleural fluid cultures.

在ER

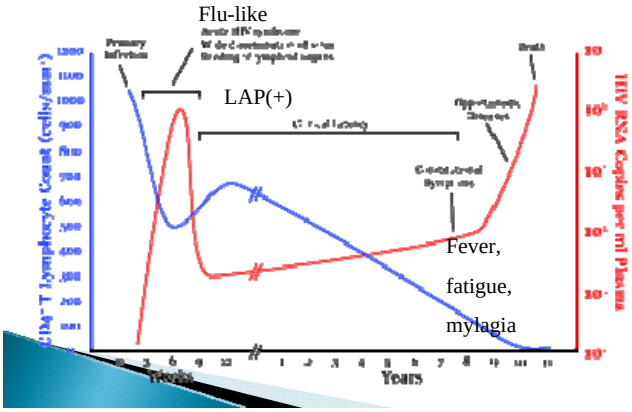
- 診斷CAP不難
- 動向也不難:因為有CURB-65,PSI
- 但是:CAP的背後:你是否注意到些?

Back to our case



HIV and AIDS

Stage of HIV infection



Examples of B conditions in early symptomatic HIV infection

Thrush
Vaginal candidiasis that is persistent, frequent, or difficult to manage
Oral hairy leukoplakia
Herpes zoster involving two episodes or more than one dermatome
Peripheral neuropathy
Bacillary angiomatosis
Cervical dysplasia
Cervical carcinoma in situ
Constitutional symptoms such as fever (38.5°C) or diarrhea for more than one month
Idiopathic thrombocytopenic purpura
Pelvic inflammatory disease, especially if complicated by a tubo-ovarian abscess
Listeriosis

UpToDate

Hint for HIV screen

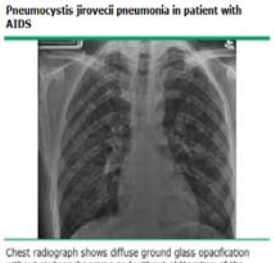
- All patients in settings with an ≥1%* HIV prevalence†
- All patients in settings serving populations at increased behavioral/clinical HIV risk (regardless of HIV prevalence in that setting)
- Individual patients in settings with <1%‡ HIV prevalence who
  - —have clinical signs or symptoms suggesting HIV infection (eg, fever or illness of unknown origin, opportunistic infection [including active tuberculosis] with no known reason for immune suppression)
  - —have diagnoses suggesting increased risk of HIV infection (eg, another STD or blood-borne infection)
  - —self-report HIV risks
  - —specifically request an HIV test
- Regardless of setting prevalence or behavioral or clinical risk†
  - —all pregnant women
  - —all patients with possible acute occupational exposure
  - —all patients with known sexual or needle-sharing exposure to an HIV-infected person

*Or higher than in other settings in the community.
†Testing should be routinely recommended, and if risk is identified during risk screening, HIV prevention counseling and referral should also be recommended.
‡Or lower than in other settings in the community.

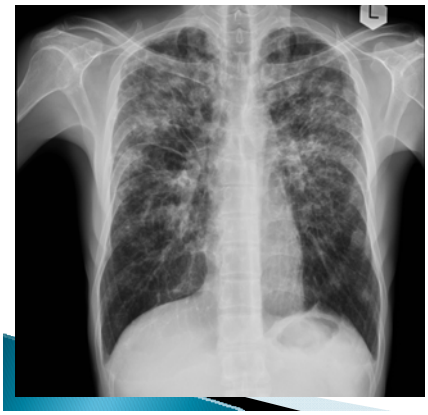
Current Centers for Disease Control and Prevention guidelines for HIV counseling, testing, and referral: critical role of and a call to action for emergency physicians :Richard E. Rothman al.etc, Annals of Emergency Medicine Volume 44, Issue 1, July 2004, Pages 31–42

Back to our case

- HIV + Pneumonia

~~~到底是哪種pneumonia?

Common Radiographic appearance of pulmonary disorders in HIV patient

Chest radiograph or CT abnormality	Etiology by rate of disease progression	Etiology by rate of disease progression
	Acute <24 hrs*	Chronic
Consolidation	Any organism (especially bacteria)	Fungi Nocardia spp, Actinomyces spp Mycobacteria Bronchoalveolar cancer Bronchiolitis obliterans organizing pneumonia
Diffuse interstitial infiltrate	P. jirovecii Bacteria (especially H. influenzae) Virus (Influenza, CMV) Pulmonary edema Acute respiratory distress syndrome	Mycobacteria Drug toxicity Lymphocytic interstitial pneumonia Metastatic disease Pulmonary alveolar proteinosis
Nodular infiltrate	Bacteria	Nocardia spp, Actinomyces spp Fungi Kaposi's sarcoma Other tumors (especially lung cancer) Castleman's Disease
Adenopathy		Lymphoma Kaposi's sarcoma Castleman's Disease Lung cancer Tuberculosis
Pleural effusion	Bacteria (parapneumonic) Tuberculosis Empyema	Lymphoma (especially non-Hodgkin's lymphoma and primary effusion lymphoma) Kaposi's sarcoma
Pneumothorax	P. jirovecii	

PJP

- **RADIOGRAPHIC MANIFESTATIONS**
  - ¼ patients :normal
  - Most common:diffuse, bilateral, interstitial, alveolar infiltrates.
- Definite Diagnosis: Sputum induction(免疫染色),BAL.
- Tx:TMP-SMX



Chest radiograph shows diffuse ground glass opacification without air bronchograms and without obliteration of the pulmonary vessels.
Courtesy of Paul Stark, MD.

UpToDate

Clinical presentation and diagnosis of Pneumocystis infection in HIV-infected patients ; Treatment of Pneumocystis infection in HIV-infected patients uptodate 2013

Other case 分享
~~~

45y/o Male,Dry cough for 2 wks



Admission:Open TB

Bronchoalweolar Lavage(BAL):

最後確診爲HIV-with kaposi Sarcoma

Take Home Message

- 在ER診斷為CAP時:

要時常考慮Infection之三大因素
Host,Immunity,Pathogen

- 把有可能傳染的 禍害人間的放在心裡
  - 新興感染症(另一波SARS?)
  - TB
  - 流感重症
  - 退伍軍人症,Mycoplasma
- TOCC,Smoking history一定要問

Thank You for your Attention!!!