Pneumonia

د- مشتاق وتوت

**definition:

defined as an acute respirotery illness associated with recently developed radiological pulmonary shadowing , may be segmantal, lobar, multilobar & bronchopneumonia.

**Types:

lobar pn: homogenous consolidation of one or more lung lobes often associated with pleural inflamation.

Bronchopn: its more patchy alveolar consolidation associated with bronchial & bronchiolar inflamation often affecting both lower lobes.

**classification:

1- community-acquired pn (viral, bacterial)
2- hospital-acquired pn (nosocomial)
3- suppurative & aspirational pn (lung absces
4- pn in the immunocompromised patients.

Viral pneumonia:

() causes: influenza, parainfleunza, measles, RSV, varicella, CMV.

() risk factors:

*old age & children

*chronic disease of the heart, lung or kidney

*women in the last trimester of pregnancy.

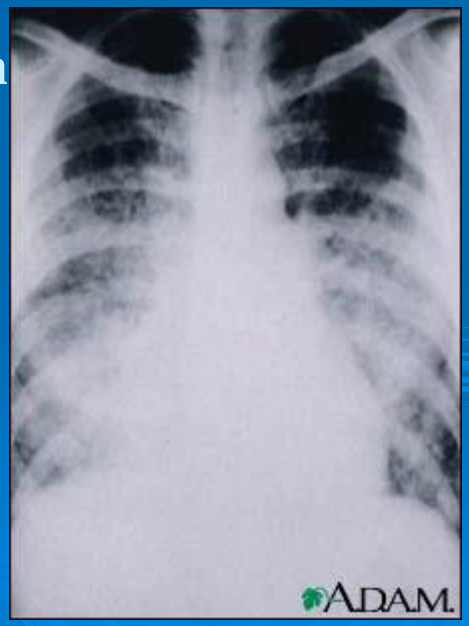
() clinical features:

*dry cough, dyspnea & malaise.

*unremarkable physical examination

*CXR= interstitial pattern

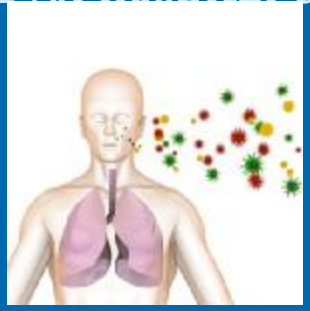
()complication: influenza-induced necrosis of resp epithelium predisposes to bacterial colonization, like strep. Pneumonia or staph. Aureus.



() community-acquired pn (CAP):

*Introduction:

1- incidence varies with the age.
2- accounts for one-fifth of childhood deaths
3- affect 2 million of children per year under the 5 years.
4- most patients managed at home, hospital admission 20-40%
5- MR at home is very low < 1%, hospital death rate 5-10% & may be as high as 50% in sever cases.

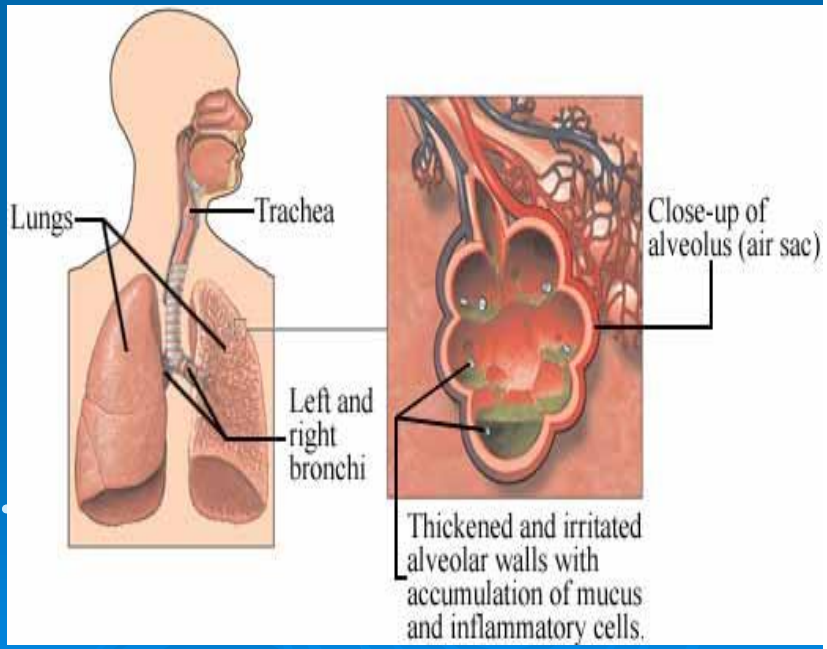


*Transmission:

spread by droplet inhalation

*Pathogenesis:

when organism settles in the alveoli,
an inflammatory response ensues.
Two phases : congestion, red &
grey hepatisation.
Finally resolution with little or no scarring.



() factors predisposes to CAP:

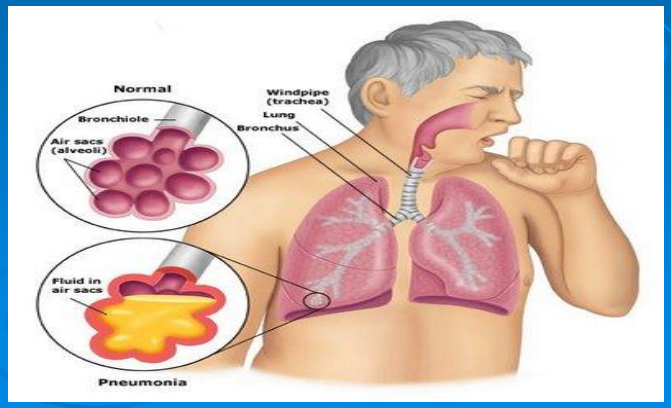
*smoking *CS therapy *HIV *alcohol *old age
*recent influ infection *pre-existing lung diseases *multiple myloma
*sickle cell disease *contact with sick birds & farm environment

() Organisms:

*strep. Pn *mycoplasma pn *chlamydia psittaci *ch pn.
*legionella * H . Infleunza *staph. Aureus *coxiella burnetti
*klebsialla *actinomyces israelli

() Clinical features:

typically presents as acute illness with fever, rigors, sweating, vomiting, anorxia & headache.
Pulmonary == cough, sputum, pleuritic chest pain & confusion.
O/E pyrexi, tachycardia, tachypnea, hypotension, after 2 days, the consolidation will appear with dull on percussion
& bronchial breathing, whispering pectorilquy
& aegophony. When resolution occur,
fine crackles & then coarse which
indicate liquefaction of alveolar exudates.



()Specific features of pn:

****pneumococcal pneumonia:* (30%) caused by *strept. Pneumonia,* rusty sputum, herpetic features, lobar or multilobar on CXR.

****Chlamydia pn:* (5-15%) pharyngitis, sinusitis, increase LFT, diagnose serologically, CXR show small segmental infilterates.

****Mycoplasma pn:* (9%) insidious onset, few signs on chest with systemic features complicated by myocarditis, pericarditis, meningoencephalitis, hemolytic anemia, stevens johnson syndrom, erythema nodusum & GB. CXR lobar consolidation with hilar LAP.

****Legionella pneumophilia:* (5%) traveler history with systemic symptoms like headache, confusion, malaise, myalgia& diarrhea. Hyponatremia, hypoalbuminemia, high LFT & CK. CXR consoli slow to resolve.

****Haemophilus infleunzae:* (3%) COPD, Bronchiactasis, CXR bronchopn.

****Staph aureus:* (2-5%) may cause osteomyelitis, endocarditis & brain abscess CXR cavitation.

****Chlamydia psittaci:*(<1%)contact with bird, hepatosplenomegally , CXR lower lobe consolidation.

()Investigations:

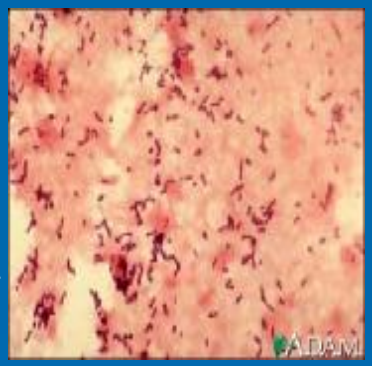
1- CXR: appear within 12-18 h.

2- microbiological :

***sputum for gram stain & culture**

***blood culture**

***serology for mycoplasma, chlam, legionella.**



3- Oximetry:

4- general blood tests: WBC, LFT, RFT, CRP.

() Diff Dx:

***pulmonary infarction *pul TB *pul odema *pul eosinophilia *bronchoalveolar cell ca. *cholecystitis, acute pancreatitis, subphrenic absecess, hepatic amebiasis.**

() Assessement of disease severity:

hospital CURB-65: ****Confusion***

****Urea > 7 mmol/l***

**** RR > 30/M***

**** B Pr <90 or < 60 mmHg***

****65 years of age***

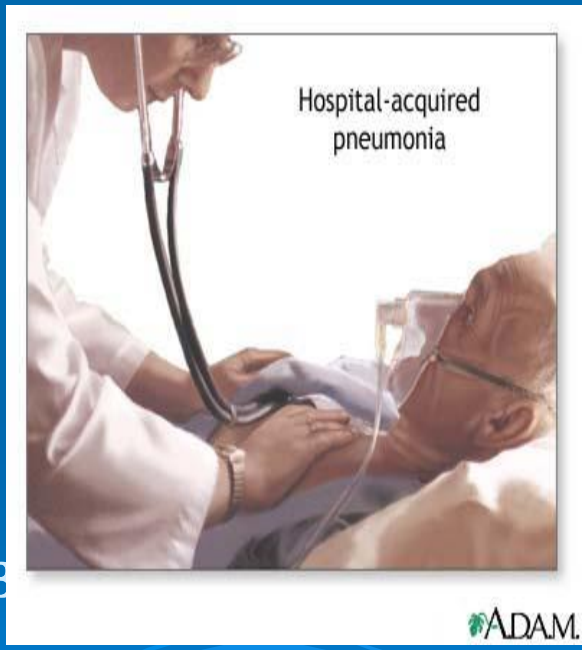
if 0-1 treated at home

if 2 consider hospital treatment

if 3 or > for ICU admission.

() features of high mortality:

A- clinical:	**B- Lab**
***age>60 years, male**	***Pa O2<8kPa**
***RR > 30 min**	*** WBC < 4000/mm3**
***Bpr < 90 mmHg, <90 mmHg**	***WBC > 20 000/mm3**
***confusion**	***BU > 7 mmol/l**
***multilobar on CXR**	*** positive blood culture**
***underlying diseases**	*** hypoalbuminemia**



() management:

1-general:

2- O2:

3- Ventilation: **indications for RCU:**

***CURB score > 3 not respond to treatment**

***persistent hypoxia < 8 kPa despite high conc O2**

***progressive hypercapnea**

***severe acidosis**

***shock**

***depressed conciousnes**

4- fluid balance:

5- antibiotic treatment:

***uncomplicated pn 7-10 days, but 14 days**

for Legionella, or Klebseilla

***oral Ab are adequate unless has severe illness, impaired conc, loss swallowing reflex or malabsorption.**

() in uncomplicated pn:

*amoxicillin 500mg 8-h orally.
*if allergic to pencillin: clarithromycin 500mg 12h orally.
*if staph : flucloxacillin 1-2 g 6h IV plus clarithromycin 500mg 12h IV
*if mycoplasma or legionella: clarithromycin 500mg 12h IV
*if chlamydia: tetracycline or erythromycine.
*if H. infleunzae: ampicillin plus 3rd generation cephalosporin.
*if Klebsialla: cephalosporin plus fluoroquinolone or aminoglycoside.

() in severe CAP:

*Clarithromycin 500mg 12h IV Or erythromycin 500mg 6h plus either Co-amoxiclav 1.2 g 8h IV or ceftriaxone 1-2 g daily.

()Complications:

failure to respond to therapy may indicate:
1- wrong AB 2- mixed infection 3- bronchial obstructio
4- wrong diagnosis 5- complications as follow:
* para-pneumonic effusion *empyma *lobar collapse
*thromboembolic disease *pneumothorax *lung abcess
*ARDS, renal failure, multi-organ failure *ectopic abcess
*hepatitis, pericarditis, myocarditis, meningoencephalitis

() Discharge & Follow-up:

@ discharge depend on no more than one of the followings:

1- RR > 24/m 2- systolic Bpr < 90 mmHg 3- Sa O2< 90%.

4- inability to intake oral 5- abnormal mental state

() Prevention:

1- influenza vaccine: (yearly) for:

elderly, chronic lung or heart diseases, DM, AIDS, health care worker, sickle cell diseases.

2- polyvalent Pneumococcal poly saccharide vaccine: (5 years) for:

elderly, chronic heart or lung diseases, sickle cell diseases, asplenic patients, Hodgkin disease, multiple myloma, cirrhosis, DM, AIDS.

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