Ali …. 65 years old

C/O exercise intolerance for 2 years

- History of occasional wheeze
- “slight cough for a while” “5 may be 10 years”
- Morning sputum most of the time
- Smoked on and off for 40 years / 1.5 packs
- No clubbing
- Wheeze and hyperinflation

- FEV1 / FVC < 70 %
- 
- Diffusing capacity (DLco)
- Kco reduced

Saleh  55 years

smoked 60 since age 16
Barrel-shaped
Liver 6th space
Cough, expectoration, SOB 2 years
FEV1 44%  FEF 19%   RV%TLC 200%
FEV1 / FVC  60%
Ventolin neb. 5mg----FEV1 INCREASED 140 ml (10%)

KCO 98%

Allergic rhinitis and hypret. Turbinates

SOB triggered strongly by dust and irritants

- A trial of Symbicort for 3 weeks
- FEV1 and FEF50 rose to 80%
- FEV1 relapsed to 64% but recovered

# D.D. with asthma

- Age of onset
- History of atopy
- Eosinophilia and IgE
- Bullae
- Chronic respiratory failure
- Diffusing capacity
- Trial of inhaled corticosteroids

# GOLD DEFINITION
## (2001)

"Is a disease state characterized by airflow limitation that is not fully reversible. The airflow limitation is usually both progressive and associated with an abnormal **inflammatory** response of the lungs to **noxious** particles or gases".

# GOLD Definition (2007)

Incorporates the extrapulmonary manifestations

- Muscle wasting
- Cachexia
- Cardiac deconditioning
- Osteoporosis
- Depression
- Social isolation

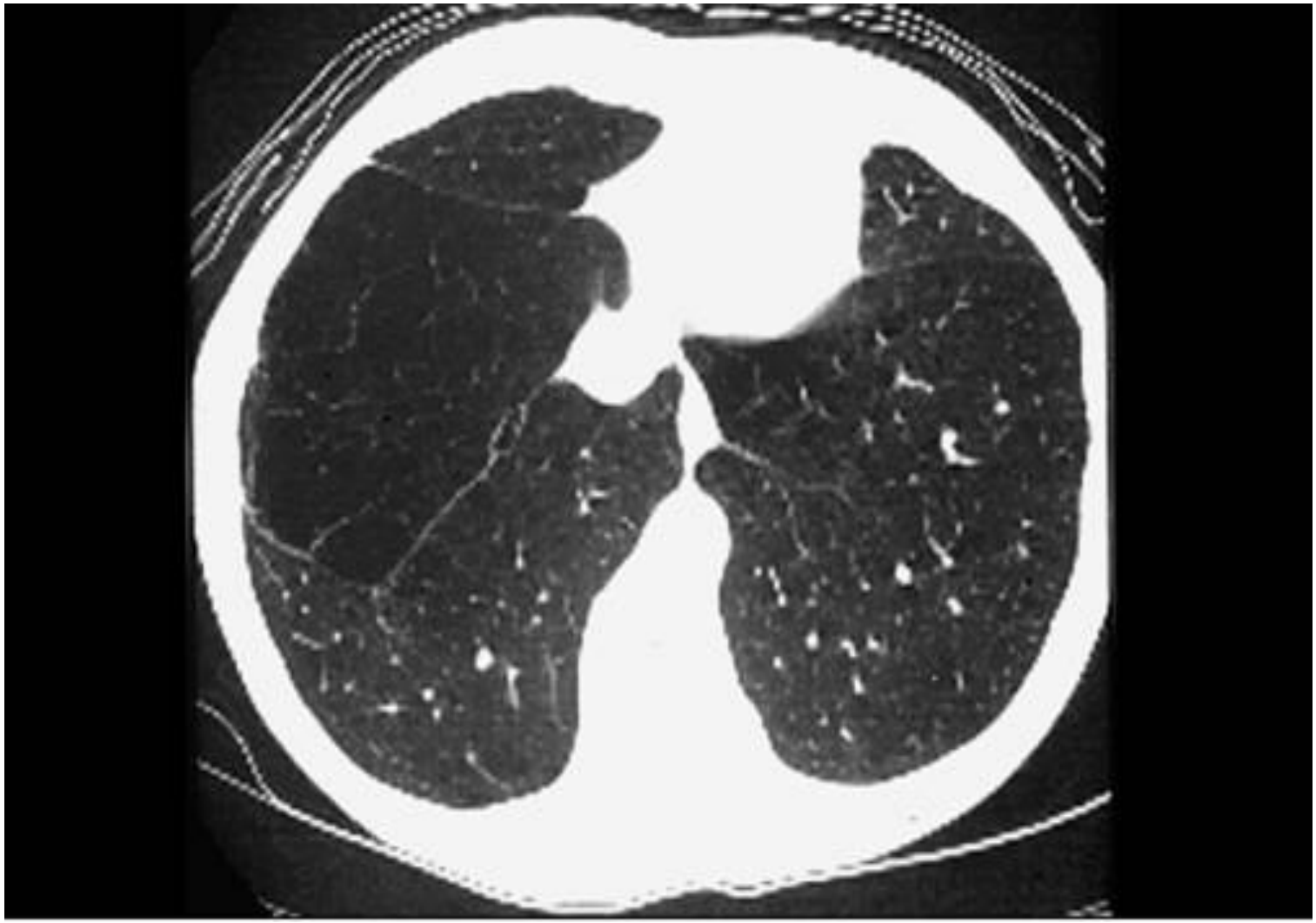
# DEFINITION OF CHRONIC BRONCHITIS

"Chronic or recurrent expectoration which is present on most days for a minimum of 3 months a year for at least 2 successive years".

# DEFINITION OF EMPHYSEMA

"Permanent destructive enlargement of airspaces distal to the terminal bronchioles without obvious fibrosis".

**Workshop of NHLBI**



- Low $PaO_2$
  Normal $PaCO_2$

  Low $PaO_2$
  High $PaCO_2$
  pH acidotic or low normal
  $HCO_3$ raised

# COMPLICATIONS

Respiratory failure

Cor pulmonale

Bacterial colonisation

Hemoptysis

Pneumothorax

Extrapulmonary

# Summary of management

Bronchodilation — ipratropium 40 to 80 µcg q 6 hourly
0r Combivent

↓

Tiotropium 18 µcg q 24 hrs
Salmetrol 50 µcg q 12 hrs
Formoterol 9 µcg q 12 hrs

Influenzae vaccine yearly

Rehabilitation: Grade 3-5 S.O.B.

?? Nebulise higher doses of Salbutamol + Ipratropium
Spacer as effective

Inhaled corticosteroids for "frequent exacerbations"

} 500 µcg fluticasone HFA (Seretide)
} 800 µcg busesonide (Symbicort)

Rinse throat
Spacer

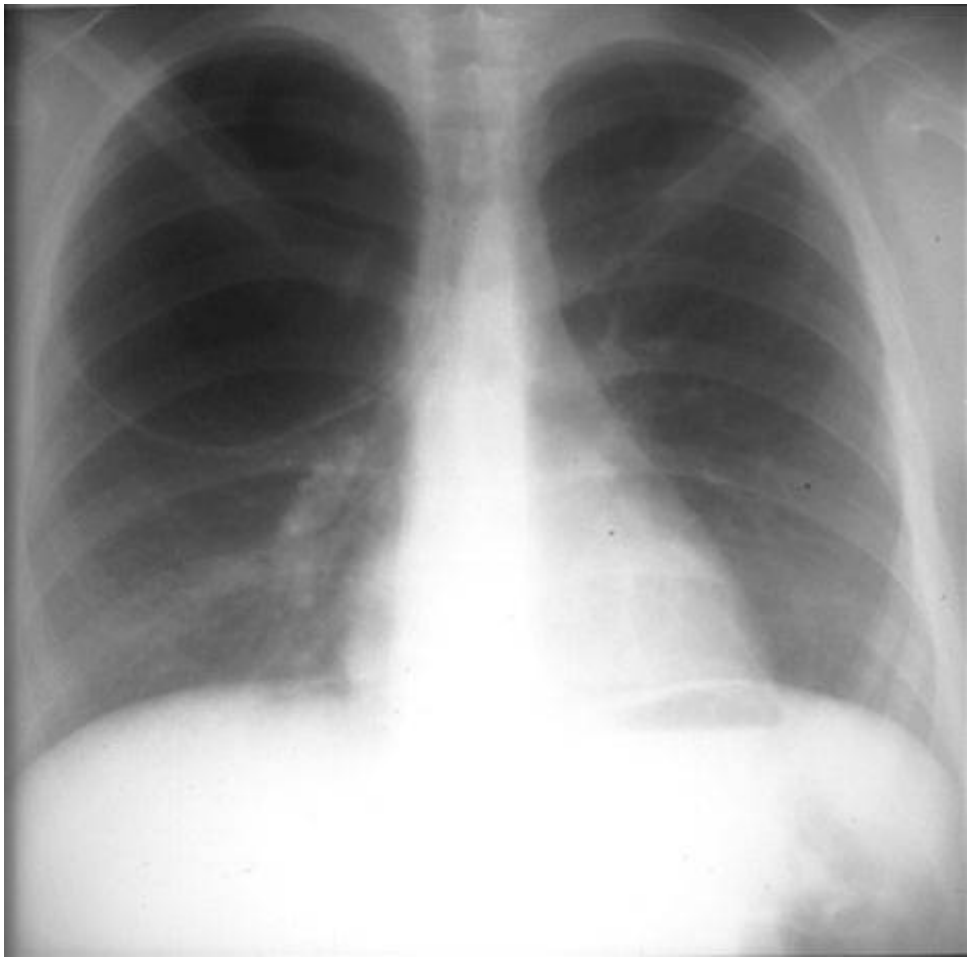
Mucolytics every winter

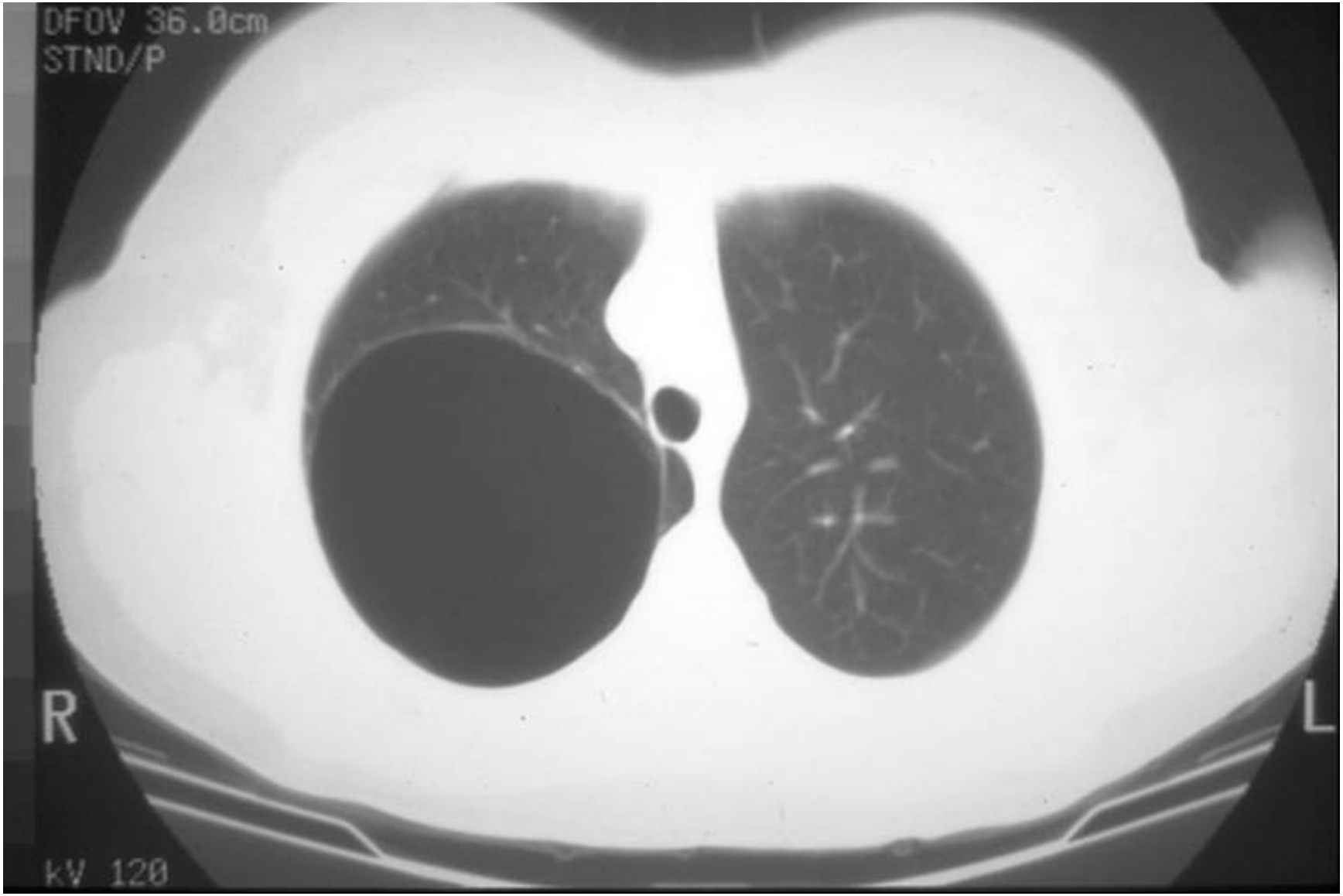
# LONG –TERM REHABILITATION 1

- Benefit independent of age, $FEV_1$, exercise capacity, $PaO_2$
- walk test 25-40%
- 6 minutes walk + 60 metres
- Only modest rise $VO_2$ peak
- Well being +

# LONG –TERM REHABILITATION 2

- 2 supervised + 1 unsupervised session
- As little as 6 weeks (Max. 12 weeks)
- 20-30 min
- Anaerobic (cycle, brisk walking)
  ?? Strength exercises
- Lower limbs > upper limbs
- Respiratory muscles: no effect
- 60 – 85% peak performance
- Benefit maintained 12-18 months without formal maintenance regimen




DFOV 36.0cm
STND/P
R
L
kV 120

# Bullectomy

- $FEV_1$ > 40%
- $PaO_2$, $PaCO_2$ near normal
- Normal V/Q scan in the surrounding lung

# Lung volume reduction surgery LVRS

- $FEV_1$ and $D_{LCO}$ above 20%
- Predominantly upper lobe emphysema

# Exacerbations

- Viral infection followed by bacterial activity

  one third associated with virus
  (rhinovirus or influenza)

  bacterial colonisation
  (20 to 30% during remissions)
  (30 to 50% during exacerb.)
  Haemophilus influenzae & parainfluenzae
  Streptococcus pneumoniae
  Branhamella catarrhalis

- Bronchospasm

  pollution or occupational

- MINOR CAUSES

  pneumonia
  Lt or Rt cardiac failure
  pneumothorax

# Life-threatening exacerbations

- Deterioration of consciousness
- Marked distress
- Paradoxical thoracoabdominal movement
- Worsening ABGs in spite of oxygen and bronchodilators ( 50 – 70 – 7.3 )
- Other comorbidities
- Social support

# MANAGEMENT OF EXACERBATIONS

- Nebulize Ipratropium 250 ucg
  Salbutamol 5 mg

  $O_2$ 24% or 2 l / min

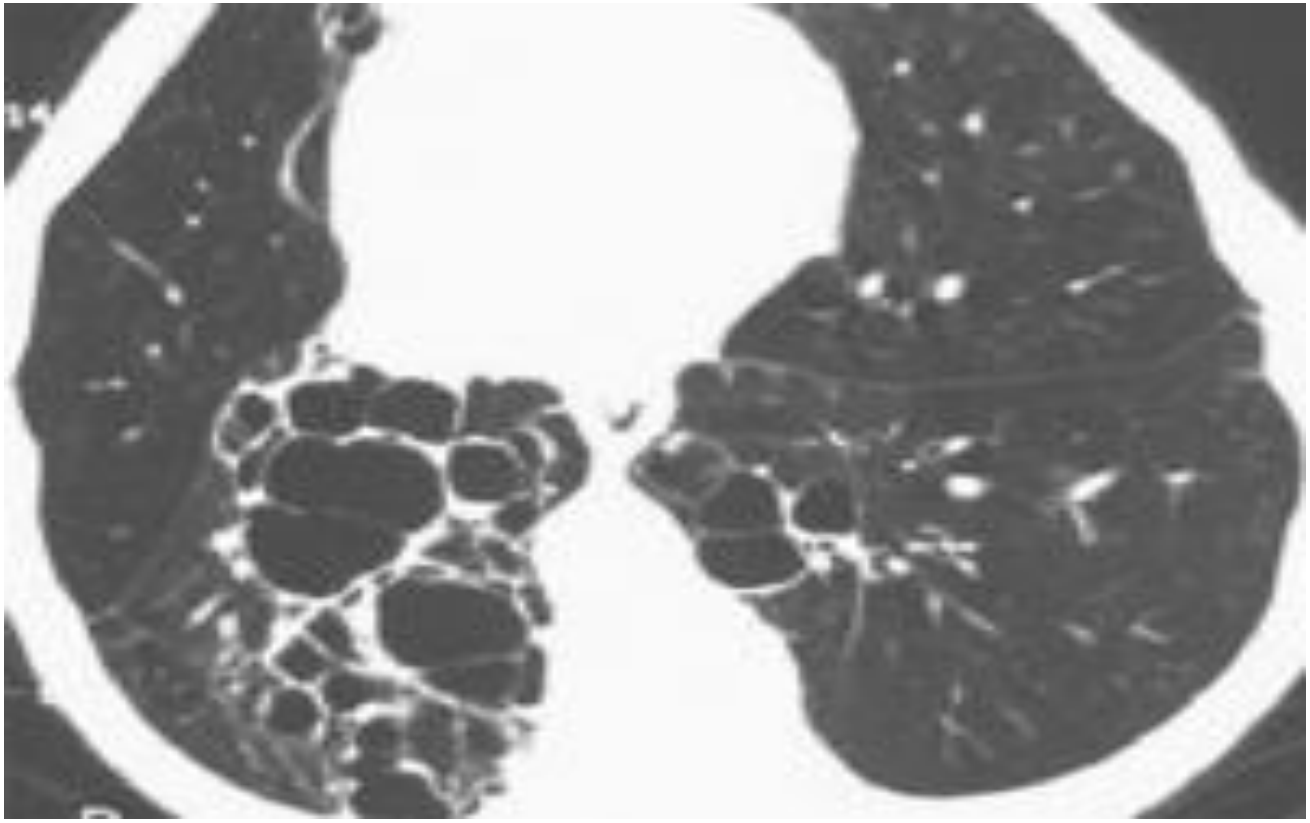
  Prednisolone 40 mg daily ?

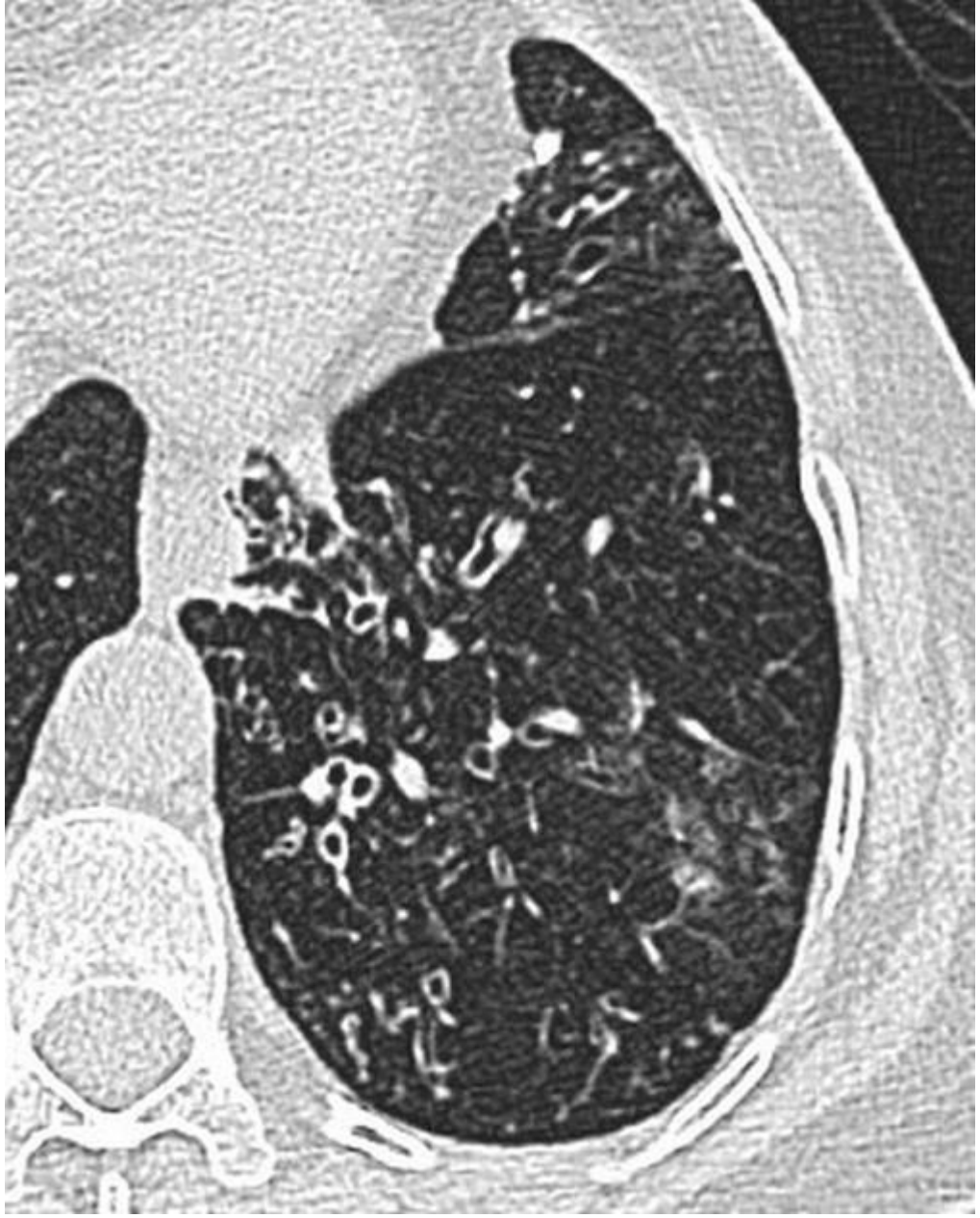
  Antibiotics ?

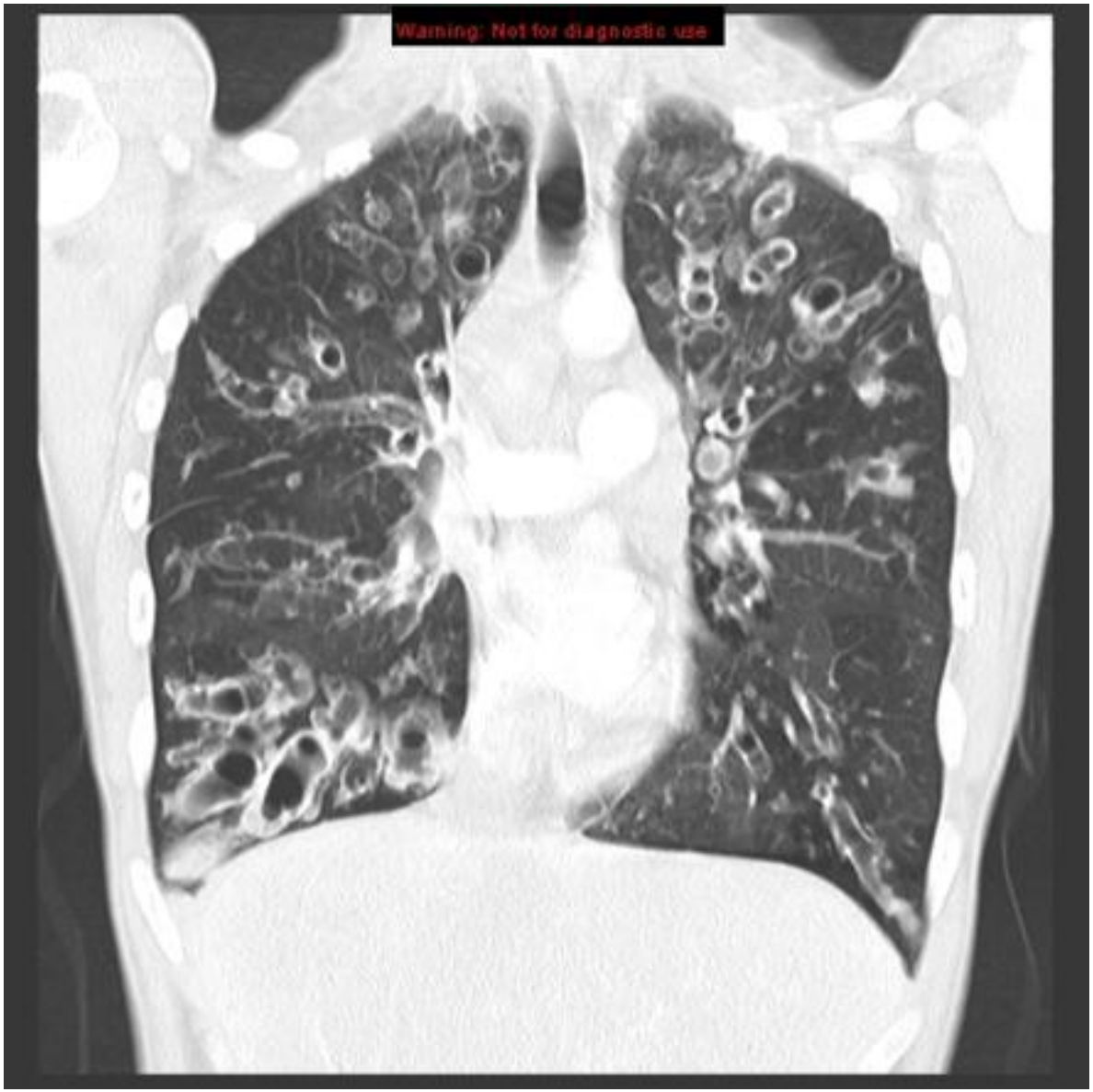
  Non-invasive ventilatory support ?

# Antibiotics for exacerbations

- Worsening of 2 out of 3 of the following :
  - shortness of breath
  - amount of sputum
  - purulency of sputum
- Amoxycillin / clavunate
- Cephalosporin (eg. Cefuroxime)
- Quinolone ---Ciprofloxacin
  ---Levofloxacin
  ---Moxifloxacin (Avalox)



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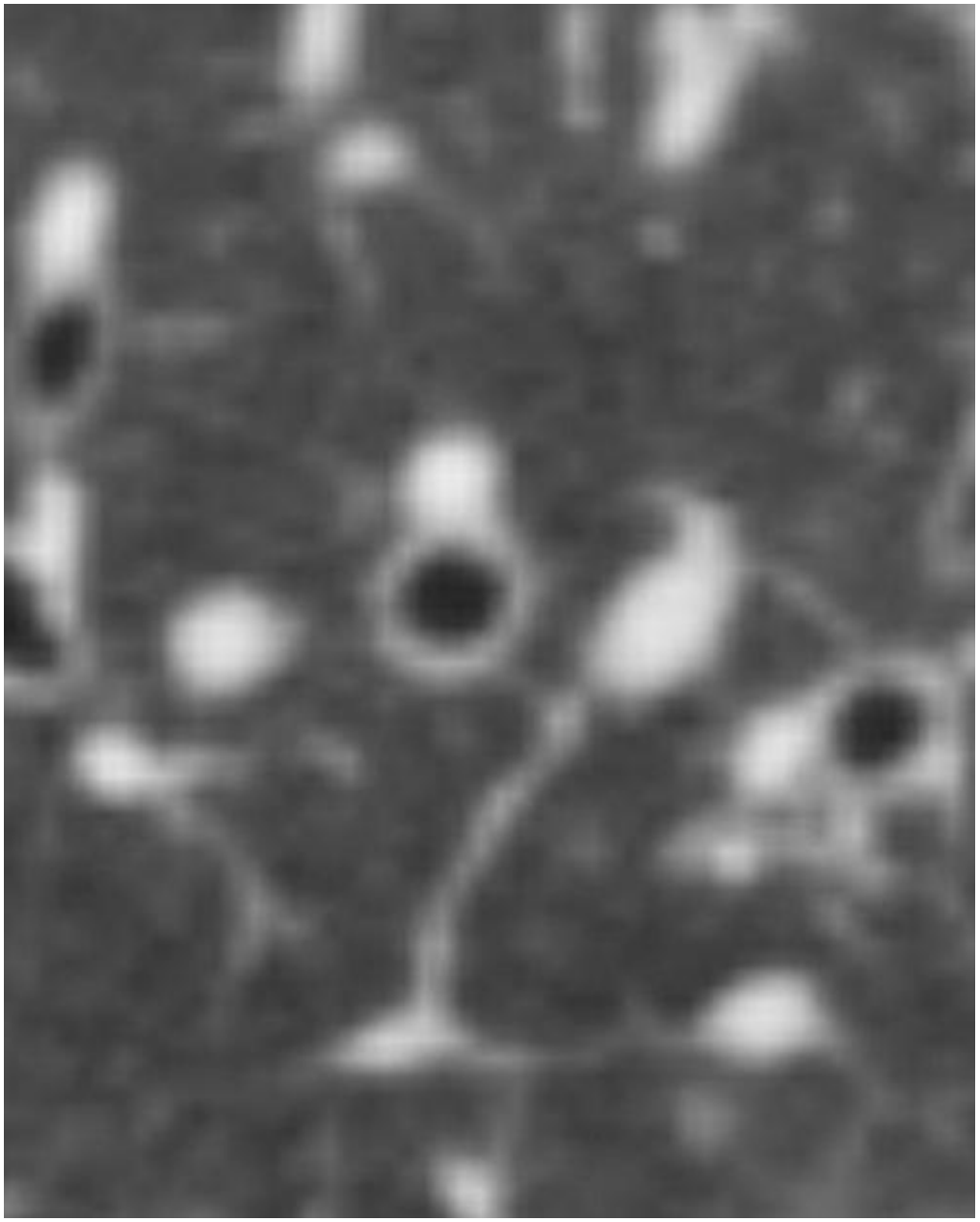

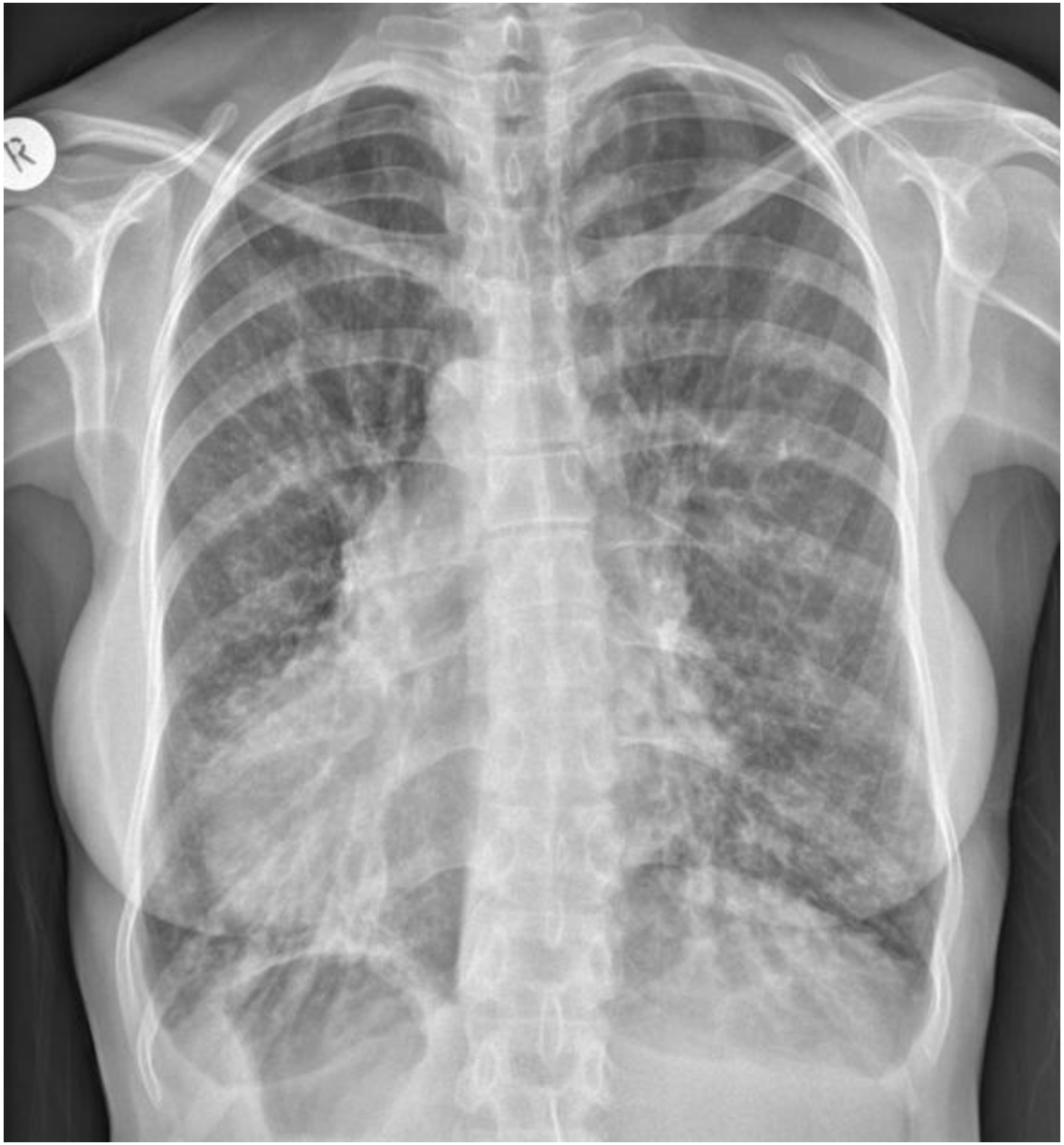
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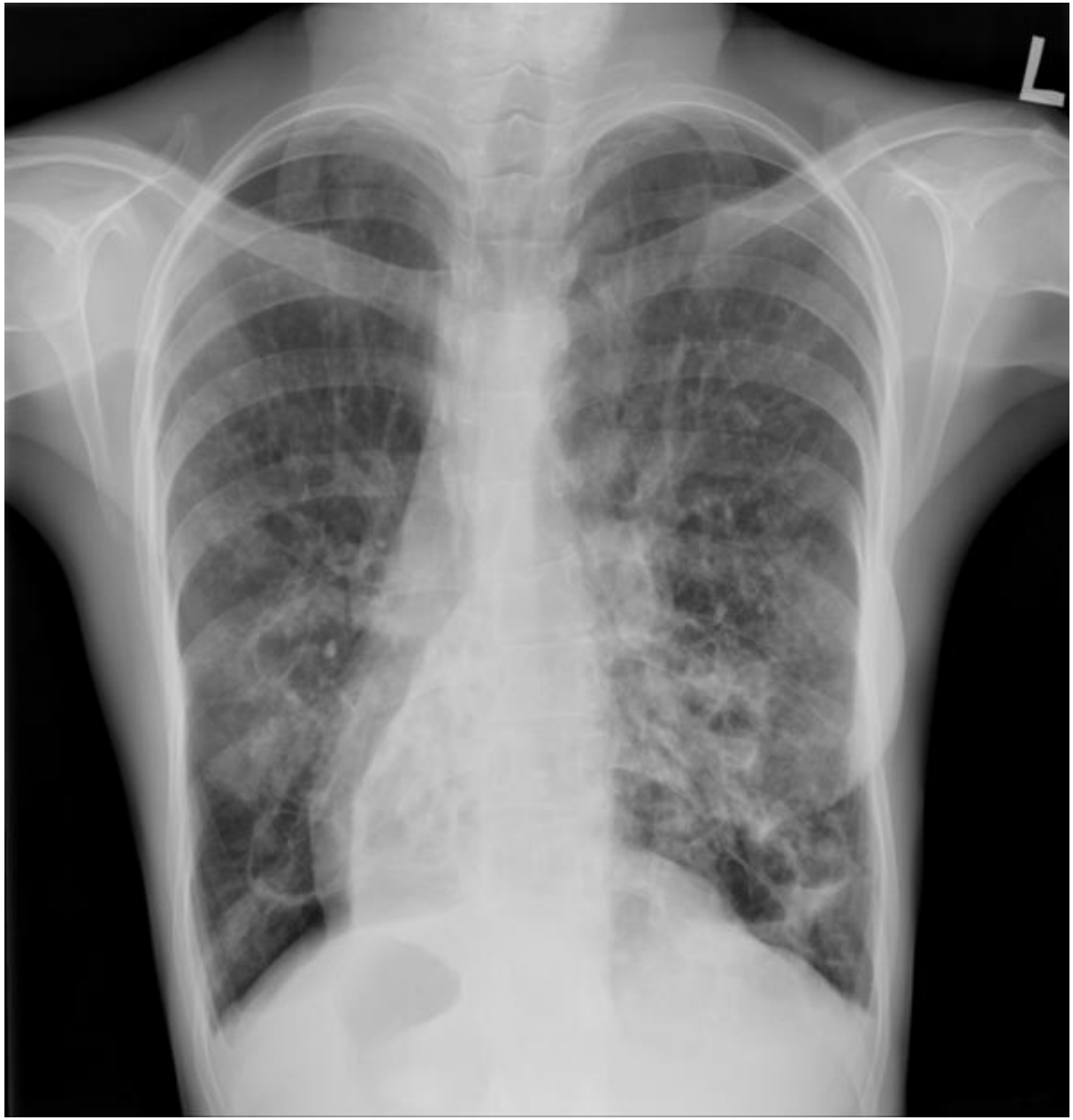
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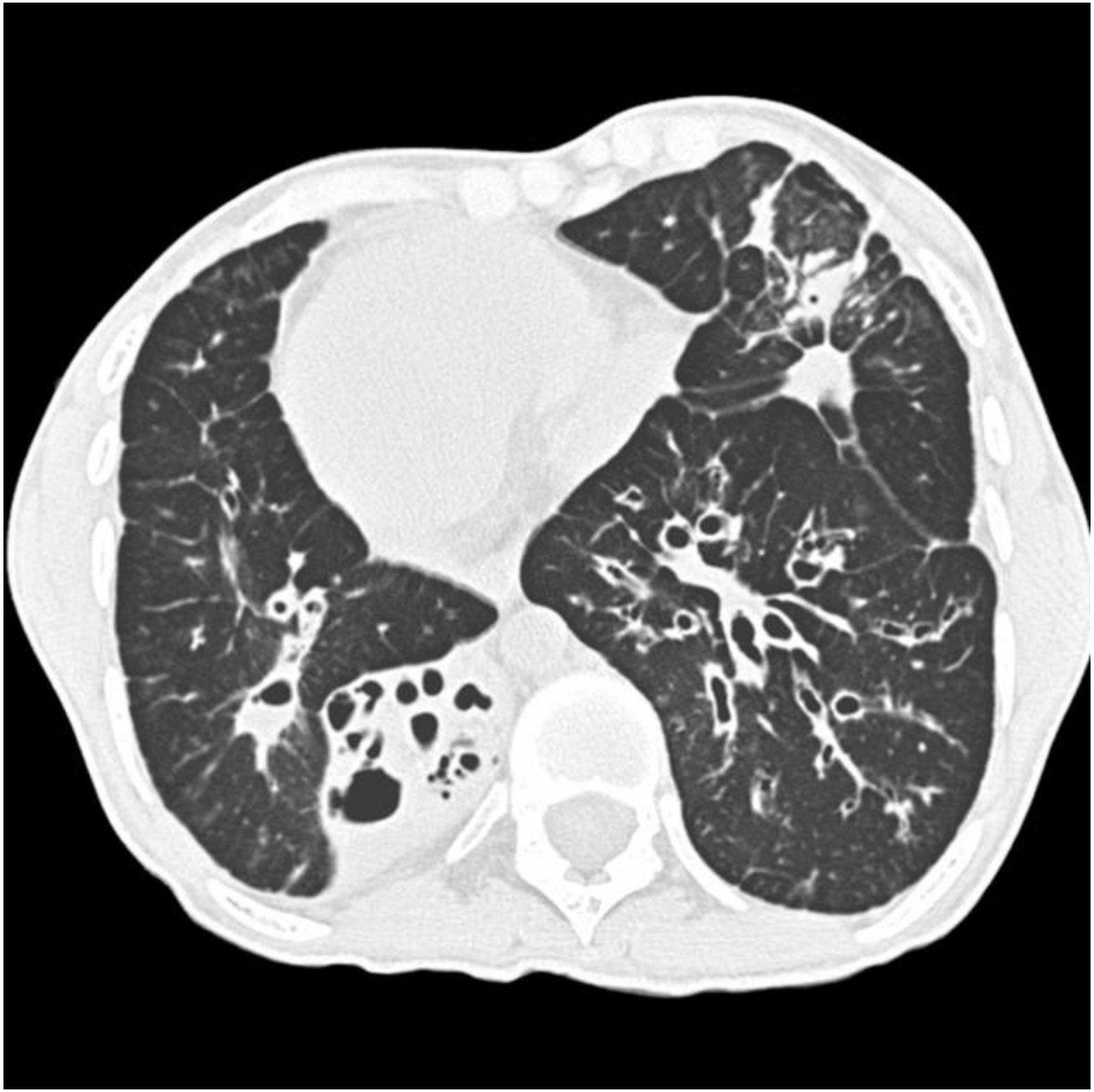

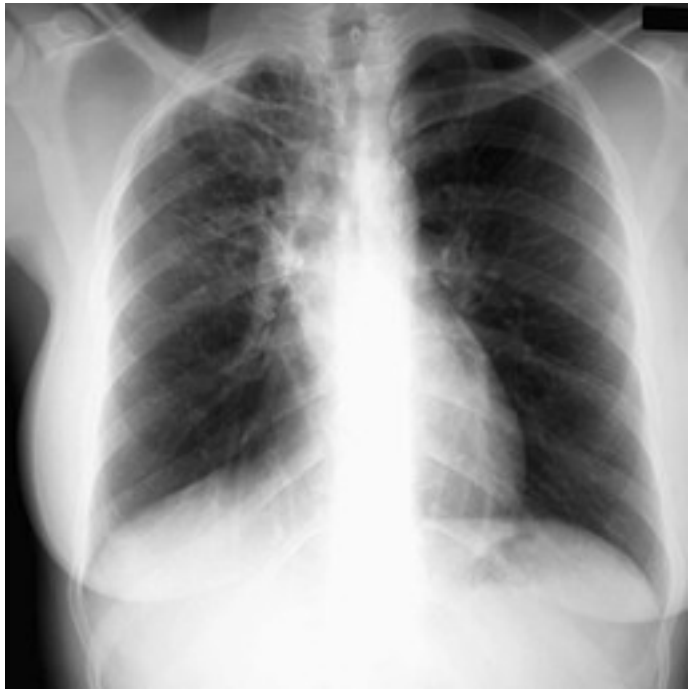

# BRONCHIECTASIS

- Permanent dilatation of the bronchi
- Cough
- Usually mucopurulent sputum
- Hemoptysis is common
- Clubbing uncommon
- Wheeze similar to asthma and COPD
- Crackles common

- FB or adenoma
- INFECTION
- HYPOGAMMAGLOBULINEMIA
- 1RY CILIARY DYSKINESIA : sinusitis + male infertility
- CYSTIC FIBROSIS
-

# H. Influenzae

- K.pneumoniae
- S.pneumoniae
- P.aeruginosa (associated with rapid decline of FEV1
- S.aurius (cystic fibrosis)

# Nebulized antibiotic therapy

Gentamycin or tobramycin

Twice daily