

PNEUMOCONIOSIS

Intro

- Pneumoconiosis occurs due to exposure to dust
- dust is in the size range:
:- 0.5 - 3 micron:
- These particles reach the interior of the lungs.
- It gradually leads to lung fibrosis and other complications.

hazardous effect of dust on lung dependent on no. of factors:-

1. Fineness.
2. Concentration of dust in air.
3. Chemical composition
4. period of exposure.
5. health status of person exposed.

particle size and behaviour:

Particle Size

1. > 10 micron.
2. < 10 micron
3. 5-10 micron:
4. 3-5 micron:
5. 1-3 micron:
6. < 1 micron

Behaviour

- Settle down by gravity.
- Remain suspended in air
- Arrested in URT
- Deposited in mid Respir T
- Enter alveoli & settle there
- Brownian movement

List of pneumoconiosis

1. Silicosis. - Silica dust
2. Anthracosis - Coal dust
3. Asbestosis - Asbestos dust
4. Byssinosis - Cotton fibre
5. Bagassosis - Molasses.
6. Farmer's lung - Mouldy hay, micropolypor. faeni

✓ Silicosis:

- * It is the major cause of permanent disability and mortality.
- * caused by inhalation of Silicon dioxide (SiO_2) or dust containing silica.
- * found among construction workers
- * particle reaches interior of lung
- * these particles are ingested by phagocytes, accumulate & block the lymph channels.

* pathologically:

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Silicosis is characterized by a dense
" nodular fibrosis"
Size - 3-4 mm

* clinically :-

onset :- insidious

* early manifest :- cough
:- dyspnea on exertion
:- pain in the chest

* Advanced state :- impairment of
total lung capacity:

* X-ray :- Snow-storm
appearance in lungs

* more prone to TB:
called :- Silico Tuberculosis.

* no effective tx:

* Silicosis can be controlled by:-

1. rigorous dust control measures
2. regular physical examination

Anthracoosis:

Disease of coal miners;

2 phases.

phase 1.

- simple pneumoconiosis
- a.w little ventilatory impairment.
- after 12 yrs exposure.

phase - 2

- progressive massive fibrosis.
- causes severe respiratory disability
- frequently result in premature death.

Byssinosis

- It is d/c inhalation of cotton fibre dust over long period of time:-

Symptom :-

- chronic cough.
- progressive dyspnea
- ending in chronic bronchitis.
- emphysema.

Bagassosis:

- caused by inhalation of bagasse (sugar cane) dust;

Symptoms :-

Breathlessness.

Cough

hemoptysis

Slight fever

a/c diffuse bronchitis

Skiagram may show mottling in lungs/shadow

Spoke tx:-

early unt^x

resolutions of a/c inflammation and of lung

diffuse fibrosis
emphysema
bronchitis

preventive measures:

1. Dust control.
2. PPE
3. medical control - check up.
4. Bagasse control.

Asbestosis:

- Asbestos is a silica combine
O, Mg, Fe, Ca, Al.
- 2 types - Serpentine
Amphibole
- Used in roof, pipe, brake
lining:
- Insoluble fiber enter the body
by inhalation and deposit in
the alveoli.
- Asbestosis is carcinogenic
- Appear after 5-10 yrs.

Symptoms:-

Respiratory dyspnoea

advance cases:- clubbing of finger,
Cardiac distress,
Cyanosis.

X-ray:- ground glass in lower
lung field.

preventive measures

- use safer type asbestos:- chrysotile.
- Substitution of other insulants

farmer's lung

- due to inhalation of mouldy
hay/grain dust.

- in these bacteria &
fungi grow faster.

↓
which temp to ↑

40-50°C

↓

encourage growth
of thermophilic actinomyces

- Symptoms:- Respiratory