

Bacillus:

- aerobic.

- Non-bulging

- Spore producing

- G⁺ PB.

***.



After culture, they produce ~~po~~ spores which don't bulge out of bacillus.



Spore
(Non bulging).

pathogenic sps. of Bacillus

B. Anthracis.

causes

Anthrax ds.



* Central Non bulging spore

* CAPSULATED

B. cereus.

causes

food poisoning.



* Terminal Non bulging spore.

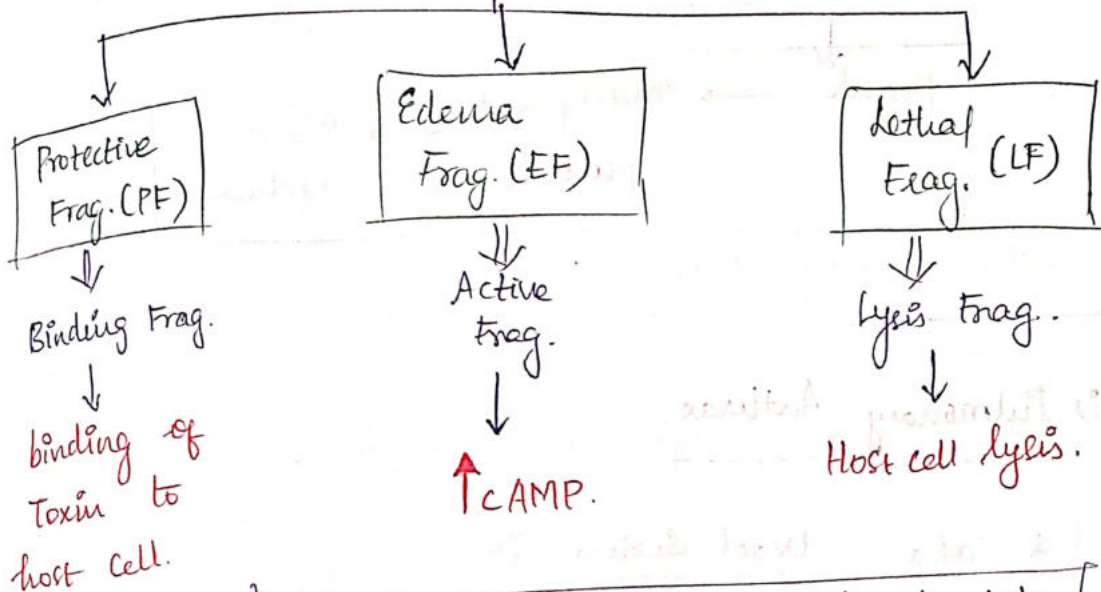
* Non Capsulated

(ds. → disease)

VIRULENCE FACTORS:

i) Capsule: Antiphagocytic

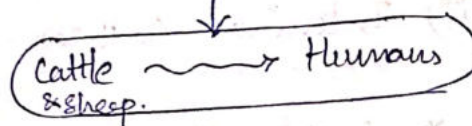
ii) Toxin: Anthrax Toxin (3 Fragments)



Note: For the Anthrax toxin to act, it must bind to host cell, that's why 3 fragments.

Clinical manifestations / Diseases caused by B. Anthracis

* Anthrax ds. → Zoonotic ds.
(acquired from Animals).
(by zoonosis).

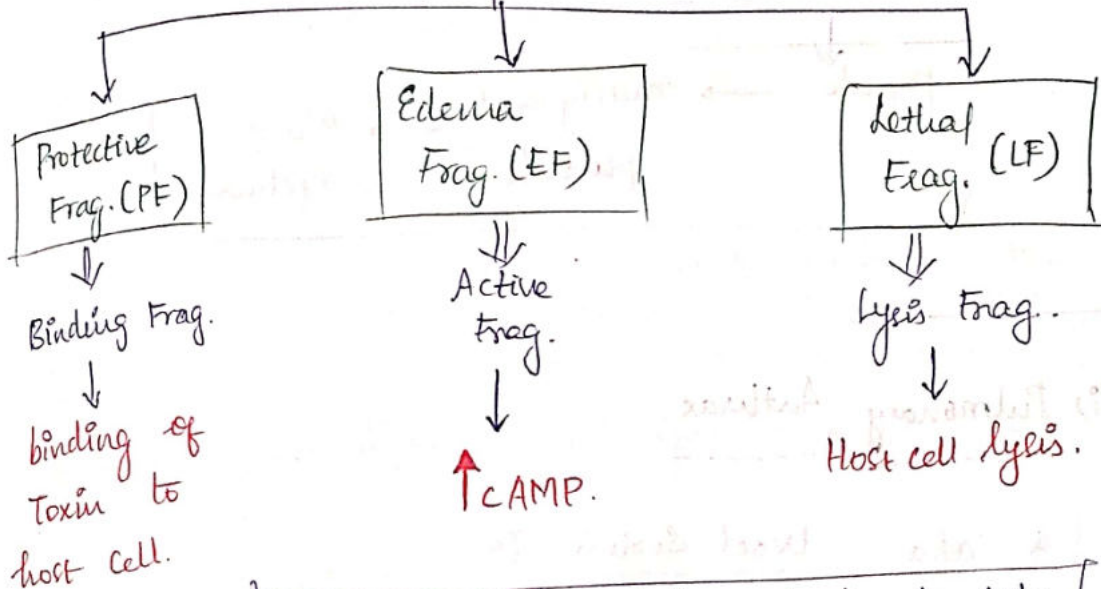


- * 3 types
- (i) Cutaneous Anthrax (Hide Paster's ds.)
 - (ii) Pulmonary Anthrax [Wool sorter's ds.]
 - (iii) Intestinal Anthrax

Virulence Factors:

i) Capsule: Antiphagocytic

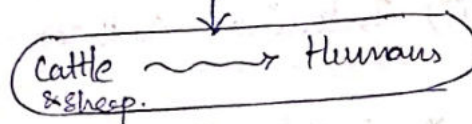
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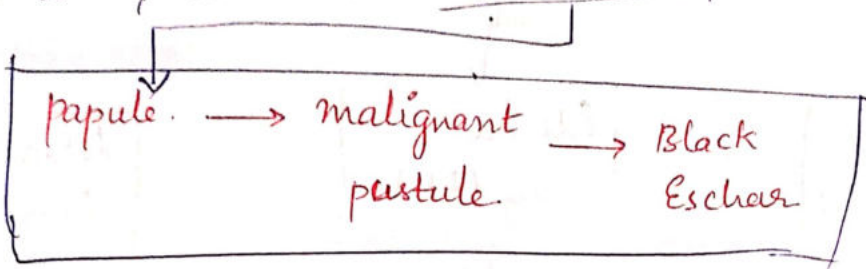
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- * 3 types
- (i) Cutaneous Anthrax (Hide Paster's ds.)
 - (ii) Pulmonary Anthrax [Wool sorter's ds.]
 - (iii) Intestinal Anthrax

* aka Hide porter's ds.
 ↓ ↳ carrier who carries hide
 skin of the cattle

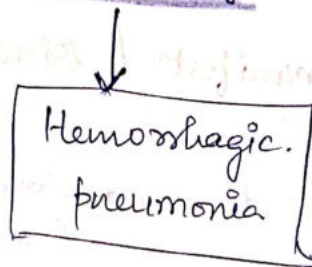
* Hide is carried by porter, if Anthracis present in it, it can infect the porter's skin.



ii) Pulmonary Anthrax:

* aka Wool Sorter's ds.

* people working wool sorting Industry, when they sort the wool, particles of wool containing B. Anthracis. can enter their lungs.



iii) Intestinal Anthrax:

* meat of an animal infected with Anthrax. if eaten can cause severe "bloody Diarrhoea" which is due to. Severe Gastro Enteritis.

perform Culture, why?
so that we can identify Non bulging
spores also ----
In culture, org. will grow as colony.
↓
produce spores.

(i) Culture

Selective Media for B. Anthracis

→ * PLET media

(Polymixin, Lyzozyme, EDTA, Thalous Acetate media)

* in solid media (Blood Agar / Nutrient Agar).
↓
Medusa Head Appearance. (X)

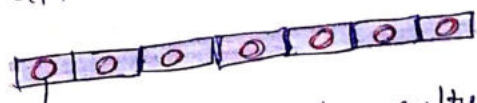
* solid media ⊕ penicillin.
↓
String of pearl Appearance. (X)

* Tube media ↓
Inverted Fir Tree appearance. (X)

(ii) Microscopy:

Gram stain ⇒

GPB Arranged in "CHAINS"



↓
Spores produced after culture

↓ gives.

Bamboo Stick Appearance.

iii) Immunological Test:

Ascoli Thermo ppt. Test.



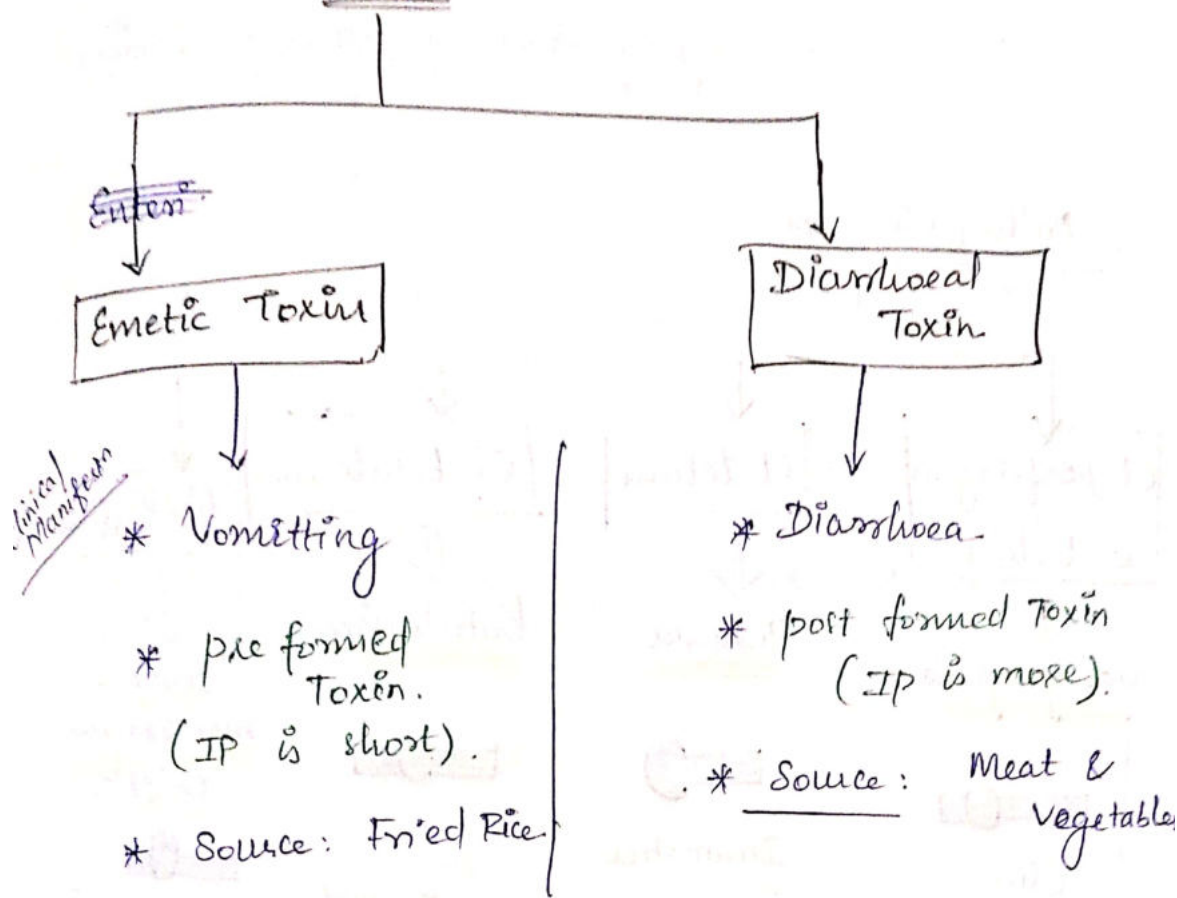
To detect Capsular Ag
from Sample



Adv: can be used even
in rotten / putrid Sample

Virulence Factors:

TOXINS



Δ^{Sis}: i) Culture:

Selective media: MYPA
(Manitol, ~~Egg~~Yolk, Polymixin, Phenol Red Agar).

(ii) Microscopy:

Gram stain:

