

Tuberculosis

MIPHA May Presentation

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INTRODUCTION



REVIEW OF SYMPTOMS

FEVER



COUGHING BLOOD

CHEST PAIN



LOSS OF APPETITE

CHILLS



THROAT PAIN



FATIGUE

NIGHT SWEAT

HEADACHE



NAUSEA



CASE FILES



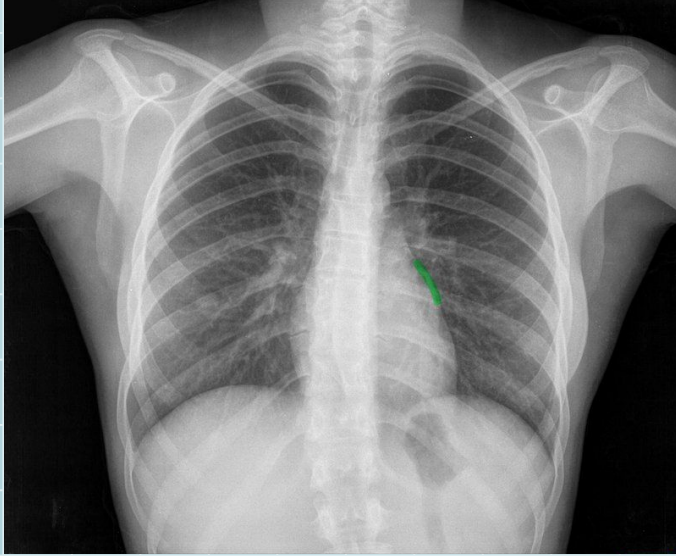
Normal Tonsil



TB Tonsil



Normal Lungs



TB Lungs



Normal Blood Count

Parameter	Normal Range (men)
Hematocrit	42–52%
Ferritin (serum)	30–400 ng/mL
Iron (serum)	60–170 µg/dL
Reticulocyte Count	0.5%–1.5%
White Blood Cell (WBC)	5,000–10,000/mL
Red Blood Cell (RBC)	$4.5\text{--}5.5 \times 10^6/\text{mL}$
Platelet	$1.4\text{--}4.0 \times 10^5/\text{mL}$
TIBC	250–370 µg/dL

TB Blood Count

Parameter	Sugou's Range
Hematocrit	38.5%
Ferritin	9,299 ng/mL
Iron	30 ug/dL
WBC count	20,000 mL
RBC count	4.25×10^6
Platelet count	4.5×10^5
TIBC	61 ug
Pathogens	Mycobacterium Tuberculosis

DIAGNOSIS



FINDINGS

LUNGS

Chest X-ray

Chest X-ray shows that there are tissue scarring, resulting in fibrous tissue.

TRACHEA

Penlight

By using the penlight, doctors were able to find that the throat is red and swelling, indicating inflammation.

BLOOD

Blood test

Excessive amount of leukocytes found in blood indicate an infection. Specifically, mycobacterium tuberculosis bacteria.

Mantoux tuberculin skin test

Patients will be injected with tuberculin in the arms, then they will return shortly after 2–3 days. If swelling 5 mm or more presented on the arm, it will be an indication of tuberculosis.



What does mantoux tuberculin skin test look like?



POSITIVE

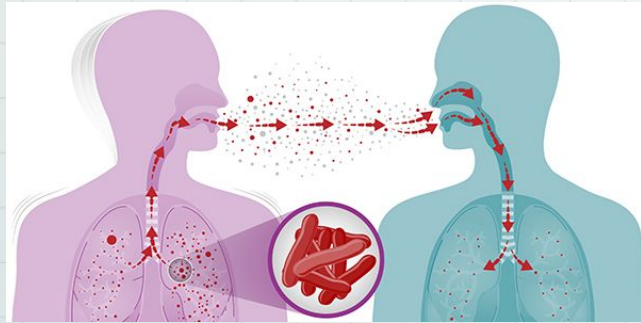
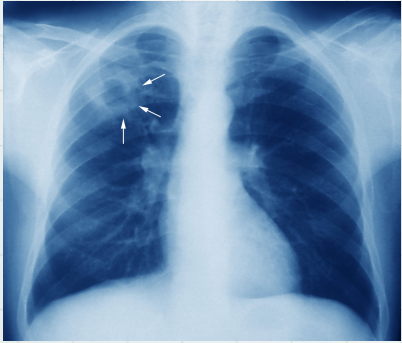


NEGATIVE

TREATMENTS

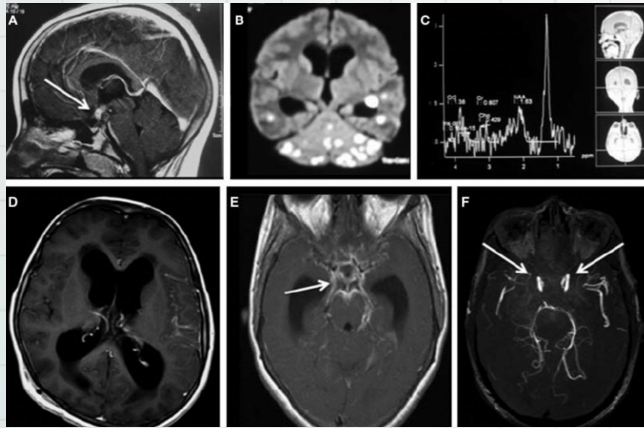


TUBERCULOSIS



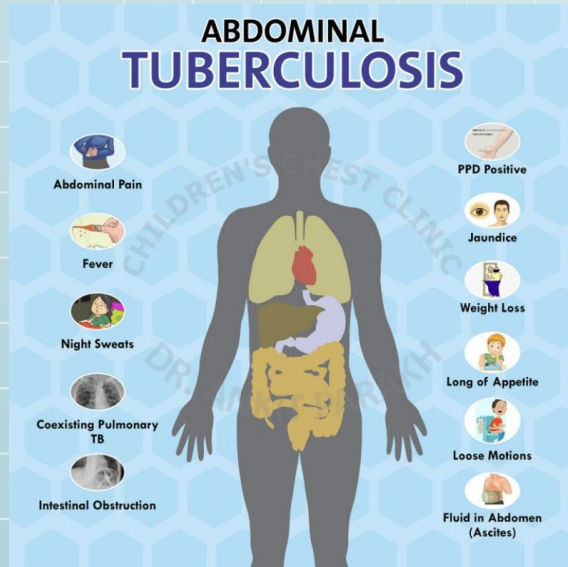
- Cause: Mycobacterium tuberculosis Bacteria
- Location: mainly respiratory system but can affect spine and brain as well.
- Latent tuberculosis infection vs tuberculosis disease
- Mycobacterium tuberculosis bacteria will multiply and become airborne

CNS TB



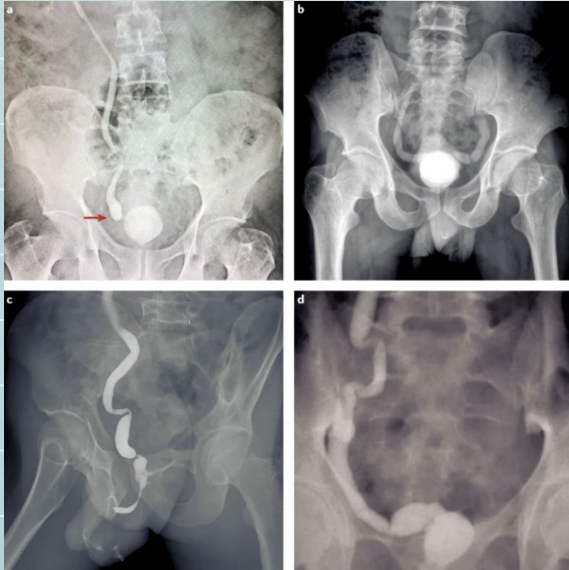
- Variety of neurological symptoms caused by mycobacterium TB
- Meningitis, tuberculoma, & Pott's disease
- High mortality rate, distressing level of neurological morbidity, and disproportionately affects children and HIV-infected individuals.

Abdominal TB



- Intestines, peritoneum, & abdominal lymph nodes
- Reactivation of latent TB infection or by ingestion of tuberculous mycobacteria
- Severe illness in adults and children, and can cause complications, such as bowel rupture, which can lead to death.

Urogenital TB



- Mycobacterium TB
- Urinary tract or genital organs
- Often delayed due to symptoms and signs often being masked by another disease, usually a urinary tract infection

MEDICATIONS: Antibiotics

ISONIAZID

by mouth on empty
stomach 1 hour after meal
daily for 6 months



RIFAMPIN

by mouth on empty
stomach 1 hour after meal
daily for 6 months

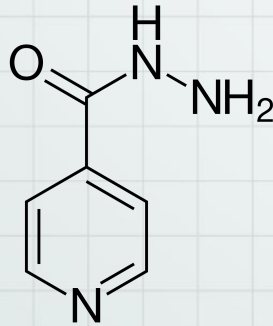
PYRAZINAMIDE

by mouth once a day at the
same time daily with or
without food for 2 months

ETHAMBUTOL

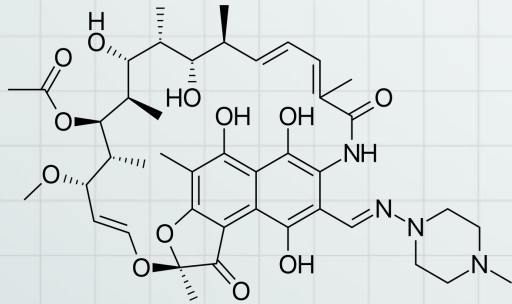
by mouth once a day at
the same time daily with
or without food for 1 year

ISONIAZID



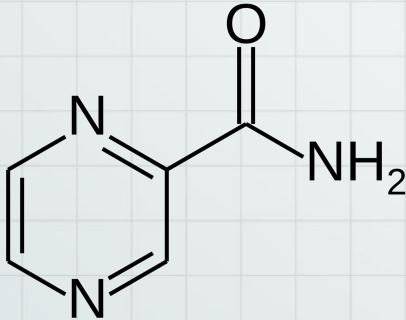
- Used along with other medicines such as rifampin to treat active TB disease
- It is an antibiotic that stops the growth of TB bacteria
- Recommendation:
 - Side effects: nerve problems
 - Reacts with food with histamines and tyramine
 - May react with other drugs

RIFAMPIN



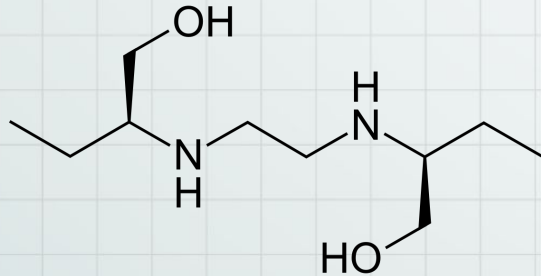
- Used along with other medicines such as isoniazid to treat active TB disease
- It is an antibiotic that stops the growth of TB bacteria
- Recommendation:
 - Side effects: upset stomach, headache, and nausea
 - May react with other drugs

PYRAZINAMIDE



- Used with other medicines to treat active TB disease
- It is an antibiotic that stops the growth of TB bacteria
- Recommendation:
 - Side effects: loss of appetite, nausea, and muscle/joint pain.
 - May react with other drugs

ETHAMBUTOL



- Used with other medicines to treat active TB disease
- It is an antibiotic that stops the growth of TB bacteria
- Recommendation:
 - Side effects: abdominal pain, dizziness, upset stomach, and headache
 - Antacids will react
 - May react with other drugs

Risk Factors

1.

Close-contact situations

Droplets from coughs or sneezes by an infected person can transfer

2.

Alcohol Abuse

Alcohol consumption impairs the immune system which increases susceptibility to tuberculosis infection, as well as to reactivation of latent tuberculosis

3.

Certain Disease (ex: HIV)

People with certain diseases like HIV are more likely to get sick because HIV weakens the immune system, making it harder for the body to fight off TB germs

Prevention

1. Wash your hands after coughing or sneezing
2. Don't visit other people and don't invite them to visit you
3. Try to avoid public places



PROFESSION



**JENNA DOE (Primary
Care Doctor)**

Jenna specializes in
infectious diseases or lung
diseases.



**TIMMY JIMMY
(Radiologist)**

Specializes in diagnosing and
treating injuries and diseases
using medical imaging (radiology)
procedures such as X-rays



**SUSAN BONES
(Phlebotomist)**

Takes samples of blood from
patients, and then carefully
handles the blood.



CITATIONS

https://docs.google.com/presentation/d/1PooVYBrQ_lrl12-SkLmSSi3KO3lgTYRjLhPZrWUBdw/edit#slide=id.g12d93aba8d8_O_24827

<https://www.cdc.gov/tb/default.htm>

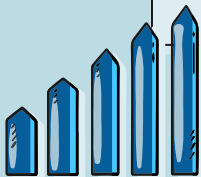
<https://www.mayoclinic.org/diseases-conditions/tuberculosis/diagnosis-treatment/drc-20351256>

<https://www.lung.org/lung-health-diseases/lung-disease-lookup/tuberculosis/treating-and-managing#:~:text=The%20most%20common%20treatment%20for, longer%20than%20other%20bacterial%20infections.>

<https://www.cdc.gov/tb/topic/treatment/tbdisease.htm>

<https://www.webmd.com/drugs/2/drug-8665/isoniazid-oral/details>

<https://www.rxlist.com/pyrazinamide-drug.htm>



CITATIONS

<https://medlineplus.gov/druginfo/meds/a682550.html>

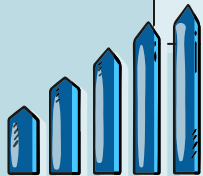
<https://pubmed.ncbi.nlm.nih.gov/8446526/>

<https://www.acr.org/Practice-Management-Quality-Informatics/Practice-Toolkit/Patient-Resources/About-Radiology>

<https://money.usnews.com/careers/best-jobs/phlebotomist#:~:text=Phlebotomists%2C%20or%20phlebotomy%20technicians%2C%20are,patient%20information%20into%20a%20database>

<https://www.cdc.gov/tb/topic/basics/risk.htm>

<https://www.webmd.com/lung/tuberculosis-prevention>





THANKS!