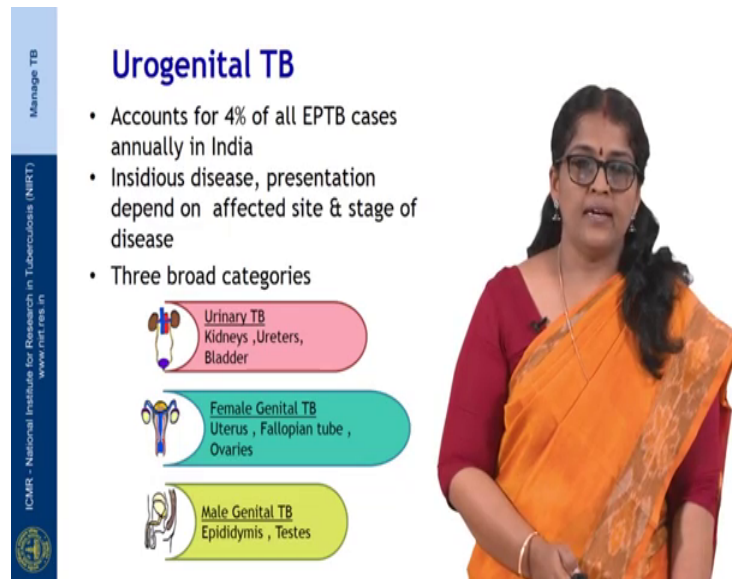


**Manage TB**  
**Dr. Dina Nair**  
**National Institute for Research in Tuberculosis, Chennai**

**Lecture - 08**  
**Clinical manifestations of TB**  
**Session 03**

Welcome to session 3 on Clinical manifestations of Tuberculosis, urogenital TB.

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**Urogenital TB**

- Accounts for 4% of all EPTB cases annually in India
- Insidious disease, presentation depend on affected site & stage of disease
- Three broad categories

- Urinary TB**  
Kidneys, Ureters, Bladder
- Female Genital TB**  
Uterus, Fallopian tube, Ovaries
- Male Genital TB**  
Epididymis, Testes

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Urogenital TB refers to, TB of the male and female genital tract and the urinary tract. This accounts for 4 percent of all EPTB cases annually in India. Usually, it is of it is an insidious disease; presentation depends on the affected site and stage of the disease.

It is there are three broad categories of urogenital TB. Urinary TB, which refers to TB of kidneys, ureters and bladder. Female genital TB, which refers to TB of uterus, fallopian tube and ovaries and male genital TB affecting, the epididymis and the testes.

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## Urinary TB

- Lower urinary tract symptoms - frequency, urgency & nocturia
- Dysuria or haematuria for > 2 weeks
- Fever, weight loss & night sweats
- Initially tubercles are formed in the kidneys which heal spontaneously or as a result of treatment
- Enlarge after many years of inactivity & rupture into the nephrons producing bacilluria



So, the urinary TB usually presents with lower urinary tract symptoms like frequency, urgency and nocturia, dysuria or hematuria for more than 2 weeks, not responding to antibiotics fever, weight loss and night sweats, which may be present.

Initially tubercles are formed in the kidneys, which heal spontaneously or as a result of treatment and they may enlarge after many years of inactivity and rupture into the nephrons producing bacilluria.

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## Female genital TB

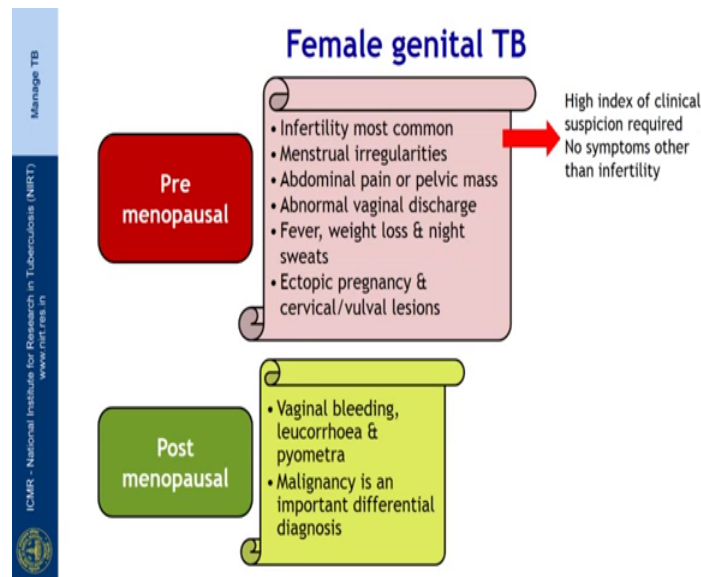
- Important cause of infertility
- In 12% of patients with pulmonary TB, accounts for 15-20% of all EPTB
- Women in reproductive age(15-45 yrs)
- Infection - haematogenous (lungs), Descending direct, Lymphatic, Primary
- Organs affected - fallopian tube, uterine endometrium, ovaries, cervix ,vagina & vulva (rare)



Female genital TB; this is an important cause of infertility, this is seen in 12 percent of patients with pulmonary TB and accounts for 15 to 20 percent of all extra pulmonary TB. Women in reproductive age groups, it is 15 to 45 years are the most affected, infection can occur through four main routes hematogenous, where the primary pathology is in the lungs, descending direct, lymphatic and very rarely primary infection can occur due to sexual transmission.

The organs affected a fallopian tube, uterine endometrial and ovaries and very rarely cervix, vagina and vulva are also affected.

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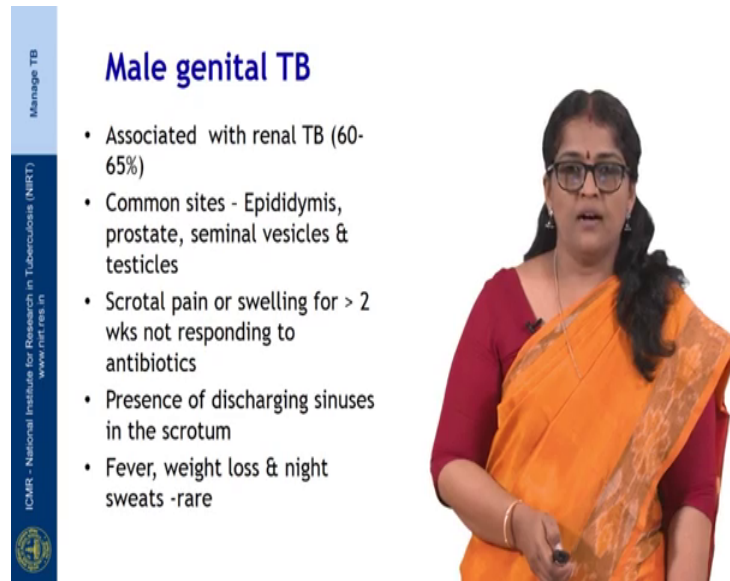


Female genital TB is usually asymptomatic. In premenopausal women, infertility is the most common presentation, menstrual irregular can also happen in the form of menorrhagia, metrorrhagia, hypomenorrhea, dysmenorrheal.

They may be abdominal pain or presence of pelvic mass, abnormal vaginal discharge, can also be there. This fever, weight loss and night sweats, ectopic pregnancy and cervical or vulval lesions are rare presentations.

So, a high index of clinical suspicion is required, because no symptoms other than infertility may be present. In postmenopausal women, this vaginal bleeding, leukorrhea and pyometra and malignancy should be an important differential diagnosis in these cases.

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### Male genital TB

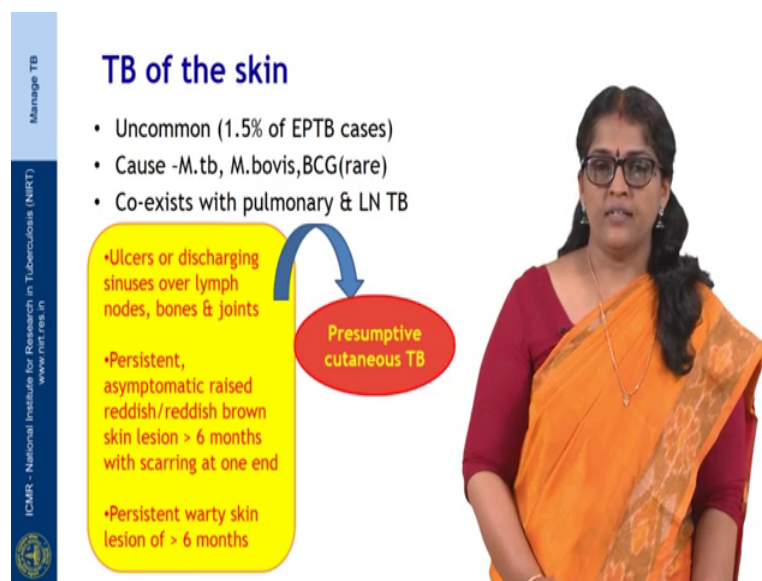
- Associated with renal TB (60-65%)
- Common sites - Epididymis, prostate, seminal vesicles & testicles
- Scrotal pain or swelling for > 2 wks not responding to antibiotics
- Presence of discharging sinuses in the scrotum
- Fever, weight loss & night sweats -rare



Now, coming on to male genital TB, this is associated with renal TB, 60 to 65 percent of the cases. The most common sites affected are epididymis, prostate, seminal vesicles and testicles.

Patients may present with scrotal pain or swelling for more than 2 weeks not responding to antibiotics, this presence of discharging sinuses in the scrotum. Fever, weight loss and night sweats are rare.

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### TB of the skin


- Uncommon (1.5% of EPTB cases)
- Cause -M.tb, M.bovis,BCG(rare)
- Co-exists with pulmonary & LN TB

•Ulcers or discharging sinuses over lymph nodes, bones & joints

•Persistent, asymptomatic raised reddish/reddish brown skin lesion > 6 months with scarring at one end

•Persistent warty skin lesion of > 6 months

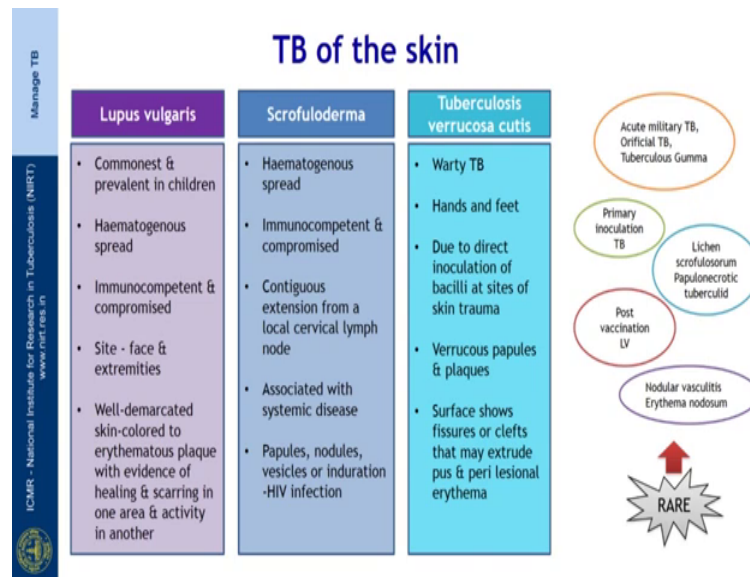
Presumptive cutaneous TB



So, coming on to TB of the skin, this is very uncommon, it accounts for 1.5 person of all EPTB cases. The main causes mycobacterium tuberculosis and mycobacterium bovis and very rarely, it can also be caused by BCG. This usually coexist with pulmonary and lymph node TB.

Patients presenting with ulcers or discharging sinuses over lymph nodes, bones and joints, a persistent, asymptomatic rays reddish or reddish brown skin lesion more than 6 months duration, with scarring at one end and persistent watery skin lesion of more than 6 months duration should be evaluated for presumptive cutaneous TB.

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TB of the skin, the most common manifestations are lupus vulgaris and scrofula derma. Lupus vulgaris is commonest and is prevalent in children, the spread is usually hematogenous, it can be seen in both immunocompetent and immunocompromised. The common sites affected are face and extremities and the lesions are well demarcated skin color to erythema test plaque, with evidence of healing and scarring in one area and activity in another.

The other common manifestation is scrofuloderma, this also occurs through hematogenous spread, it can be seen in both immunocompetent and immunocompromised. It can also arise due to a contiguous extension from local cervical lymph node; it is associated with systemic disease.

In HIV infection, we may see papules, nodules, vesicles or indurations. The third variety is tuberculosis verrucosa cutis, this is also known as warty TB, it affects the hands and feet. This is due to direct inoculation of bacilli at sites of skin trauma, verrucous papules and plaques are seen and the surface shows fissures of cliffs that may extrude pus and perilous erythema is present.

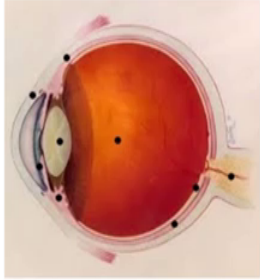
The other rare varieties include nodular vasculitis and erythema nodosum, post vaccination lupus vulgaris, lichin scrofulosorum and popolo necrotic tuberculid, primary inoculation TB, acute miliary TB, orificial TB and tuberculous gamma.

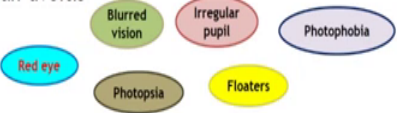
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### Ocular TB

- Incidence of TB in uveitis (0.6-10.1%)
- Moderate to severe visual impairment
- Structures affected  
Uveal tract common
- Hematogenous spread, primary rare
- Signs & symptoms consistent with anterior, intermediate, posterior or pan-uveitis





Next is ocular TB, the incidence of TB in patients presenting with uveitis, ranges from 0.6 to 10 percent. This may cause moderate to severe visual impairment, almost all structures in the eye are affected, the most common ones include uveal tract and the choroid.

The spread is hematogenous, primary infection is very rare, signs and symptoms are consistent with anterior, intermediate, posterior or pan uveitis. It includes red eye, blurred vision, photopsia, irregular pupil, floaters and photophobia.


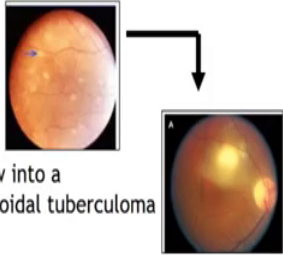


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### Ocular TB

- Posterior uveitis with choroidal involvement- choroiditis, subretinal abscess, tubercles, tuberculomas
- Choroidal tubercles -small gray-white to yellow nodules, single or multiple, at posterior pole
- Grow into a choroidal tuberculoma
- Diagnostic clue to miliary TB



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Ocular TB, the most common manifestation is posterior uveitis with choroidal involvement. The choroidal involvement is in the form of cordites, subretinal abscess, tubercles and tuberculomas.

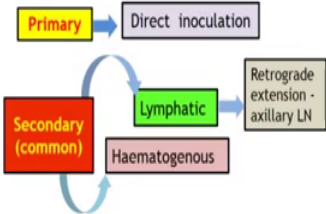
Choroidal tubercles are small grey to white, to yellow nodules, which are single or multiple, seen at the posterior pole. These may grow into a choroidal tuberculoma and the presence of choroidal tuberculoma, may be diagnostic clue to miliary TB.

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**Manage TB**


### TB of the breast

- Incidence is 3-4% in endemic settings
- Young lactating multiparous women
- Occurrence



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graph TD; Primary[Primary] --> Direct[Direct inoculation]; Secondary[Secondary (common)] --> Lymphatic[Lymphatic]; Secondary --> Haematogenous[Haematogenous]; Lymphatic --> Retrograde[Retrograde extension - axillary LN];
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- Clinical presentation is atypical & histopathological evidence is suggestive

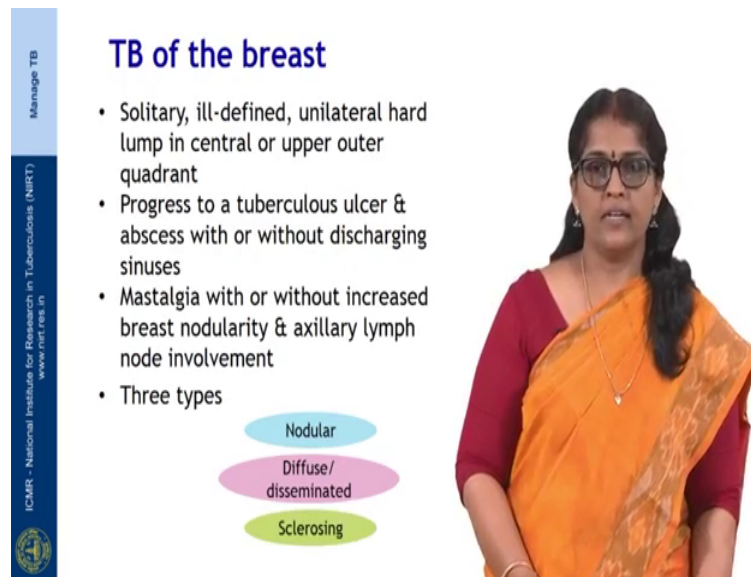


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TB of the breast; the incidence is 3 to 4 percent in endemic settings, it usually affects the young lactating multiparous women. It can occur either as a primary infection or as secondary infection, which is more common. Primary infection is due to is through direct inoculation of the breast, by mycobacterium tuberculosis, through screen abrasions, secondary which is more common can occur either through lymphatic or hematogenous route.

Retrograde extension from the axillary lymph node, is the most common route. Clinical presentation is atypical and histopathological evidence is suggestive.

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**TB of the breast**

- Solitary, ill-defined, unilateral hard lump in central or upper outer quadrant
- Progress to a tuberculous ulcer & abscess with or without discharging sinuses
- Mastalgia with or without increased breast nodularity & axillary lymph node involvement
- Three types
  - Nodular
  - Diffuse/disseminated
  - Sclerosing

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TB of the breast, usually presents as solitary, ill defined, unilateral hard lump in central or upper outer quadrant of the breast, thus if this becomes indistinguishable from carcinoma breast.

This can progress to a tuberculous ulcer and abscess with or without discharging sinuses. Patients may present with mastalgia with or without increased breast modularity and axillary lymph node involvement is also seen. Based on the clinical pathological and radiological features three types are identified nodular, diffuse or disseminated and sclerosing.



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### TB of the Ear, Nose & Throat

- Constitutes less than 5% of all cases of EPTB
- Involves
  - Larynx
  - Ear
  - Pharynx
  - Oral cavity
  - Salivary glands
  - Paranasal sinuses
  - Nasopharynx
  - Thyroid gland



Now, coming on to the TB of the Ear, Nose and Throat; this constitutes less than 5 percent of all cases of EPTB. This involves the larynx, ear, pharynx, oral cavity, salivary glands, paranasal sinuses, nasopharynx, and the thyroid gland.

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### TB of the larynx

- All patients with laryngeal TB have radiological evidence of pulmonary TB & are sputum smear-positive
- Patients often present with hoarseness of voice
- Pain is also an important feature which may radiate to one or both ears & may lead to odynophagia
- Can be infectious, unlike other forms of EPTB



TB of the larynx, all patients with laryngeal TB have rare logical evidence of pulmonary TB and a sputum smear positive. Patients often present with hoarseness of voice, pain is also an important feature which may radiate to one or both ears and may lead to odynophagia. It can be infectious, unlike other forms of EPTB.

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TB of the Ear & Oral cavity	
Site	Clinical manifestations
Ear	<ul style="list-style-type: none"><li>• Presents as chronic suppurative otitis not responding to antibiotics</li><li>• Hearing loss disproportionate to clinical appearance</li><li>• Complicated by facial paralysis &amp; inner ear involvement</li></ul>
Oral	<ul style="list-style-type: none"><li>• Lesions are usually ulcerative &amp; painless, sometimes with a necrotic base &amp; discharge</li><li>• Tongue most common site &amp; accounts for nearly half the cases</li></ul>



TB of the ear and oral cavity; TB of the ear presents as chronic suppurative otitis media not responding to antibiotics, hearing loss is disproportionate to clinical appearance and it may be complicated by facial paralysis and inner ear involvement.

Oral TB, the lesions are usually ulcerative and painless, sometimes with the necrotic base and discharge. Tongue is the most common site affected and it accounts for nearly half of the cases of oral TB.

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TB of the oropharynx, paranasal sinuses, glands	
Site	Clinical manifestations
Oropharyngeal	TB of tonsils - asymmetrical enlargement with ulceration TB cervical spine can extend as retropharyngeal abscess - pain on swallowing
Sino nasal	Very rare, usually presents with nasal obstruction, bleeding & runny nose & lymphadenopathy
Salivary gland	Very rare, associated with immunosuppression & swelling of gland. Parotid gland is commonly involved
Thyroid gland	Very rare, multiple presentations from isolated nodules to thyrotoxicosis



TB of the oropharynx, paranasal sinuses and the glands, TB of the tonsils, which is more common presence as asymmetrical enlargement with ulceration TB of the cervical spine can also extend as a retro pharyngeal abscess and causing pain on swallowing.

Sino nasal TB is very rare, it usually presents with nasal obstruction, bleeding and running nose and lymph adenopathy. Salivary gland TB is also very rare, associated with immunosuppression and swelling of gland. Parotid gland is the most commonly affected. Thyroid gland TB is very rare and the presentations ranged from isolated nodules to thyrotoxicosis.

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### Congenital TB

- Rare
- Transmitted to fetus haematogenously via umbilical vein or by fetal aspiration or ingestion of infected amniotic fluid prior to or during delivery
- Onset 2-9 weeks after delivery
- Symptoms mimic bacterial sepsis

Failure to thrive, Respiratory distress, Abdominal distension, lethargy, Fever & irritability, Poor feeding

Now, coming on to the next entity that is Congenital TB; this is rare. This is transmitted to fetus hematogenously via umbilical vein or by fetal aspiration or by ingestion of infected amniotic fluid prior to or during delivery.

Onset is usually between 2 to 9 weeks after delivery and the symptoms may mimic bacterial sepsis, which include failure to thrive, abdominal distension, fever and irritability, respiratory distress, lethargy and poor feeding.

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### Congenital TB

- Hepatosplenomegaly and lymphadenopathy are common
- Diagnostic criteria - proven TB lesions in infant plus one of the following:
  - ✓ lesions occurring in the first week of life
  - ✓ a primary hepatic complex
  - ✓ maternal genital tract or placental TB
  - ✓ exclusion of postnatal transmission by investigation of contacts
- Abnormal chest radiographs with up to 50% showing a miliary pattern



Hepatosplenomegaly and lymphadenopathy are commonly seen and the diagnostic criteria include proven TB lesions in infant plus one of the following that is lesions occurring in the first week of life.

A primary hepatic complex, maternal genital tract or placenta TB and exclusion of post natal transmission by investigation of contacts; Abnormal chest radiographs with up to 50 percent showing a miliary pattern, may also be observed.

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### Key Messages

- TB primarily affects the lungs
- Other organ systems can also be affected
- Lymphnode TB and pleural TB are the commonest forms of extra pulmonary TB
- Extra pulmonary TB more common in PLHIV
- Clinical manifestations can be systemic and/ or organ specific



So, the key messages of this session on clinical manifestations of TB include that TB primarily affects the lungs, other organ systems can also be affected. Lymphnode TB and pleural TB are the commonest forms of extra pulmonary TB. Extra pulmonary TB are more common in people living with HIV. Clinical manifestations can be systemic and, or organ specific.

Thank you.