С.Д.АСФЕНДИЯРОВ АТЫНДАҒЫ ҚАЗАҚ ҰЛТТЫҚ МЕДИЦИНА УНИВЕРСИТЕТІ

НАЦИОНАЛЬНЫЙ МЕДИЦИНСКИЙ УНИВЕРСИТЕТ ИМЕНИ С.Д. АСФЕНДИЯРОВА

INDEPENDENT WORK OF STUDENT:

TUBERCULOSIS OF THE KIDNEY AND URETER

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Plans:

- **Introduction:**

What is the tuberculosis of the kidney and ureter?

- **Main part**:

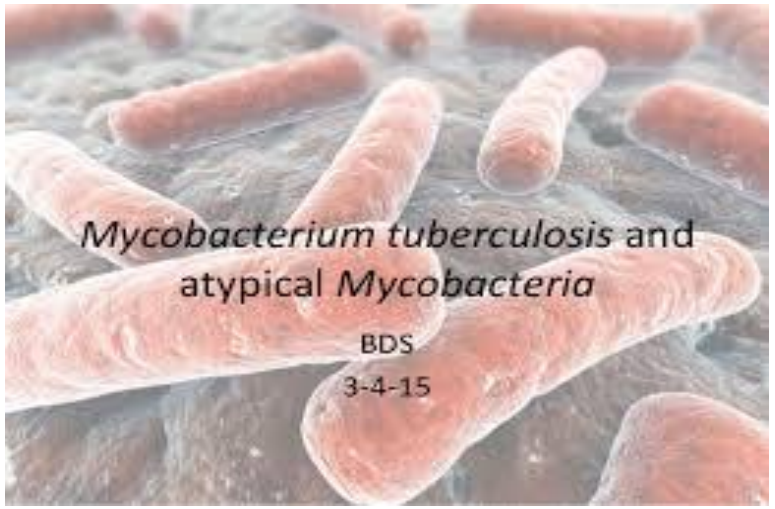
- Etiology
- Pathogenesis
- Pathology anatomia
- Clinical features/symptoms
- Diagnosis
- Differential diagnosis
- Treatment

- **Conclusion:**
- **Used literature.**

Etiology

A specific pathogen of tuberculosis of the urinary system and male genital organs is Mycobacterium tuberculosis and human bacillus Koch.

- Weakly gram+ ive,ACID fast
- Non-motile,non sporing,strictly aerobic,straight or slightly
- Curved rod 2to 4 Nm in length with a diameter of 0,3 to 0.6Nm.
- TB kills 1.7million people every year,nearly 5,000 people every day,one person every 20 seconds.



Pathogenesis

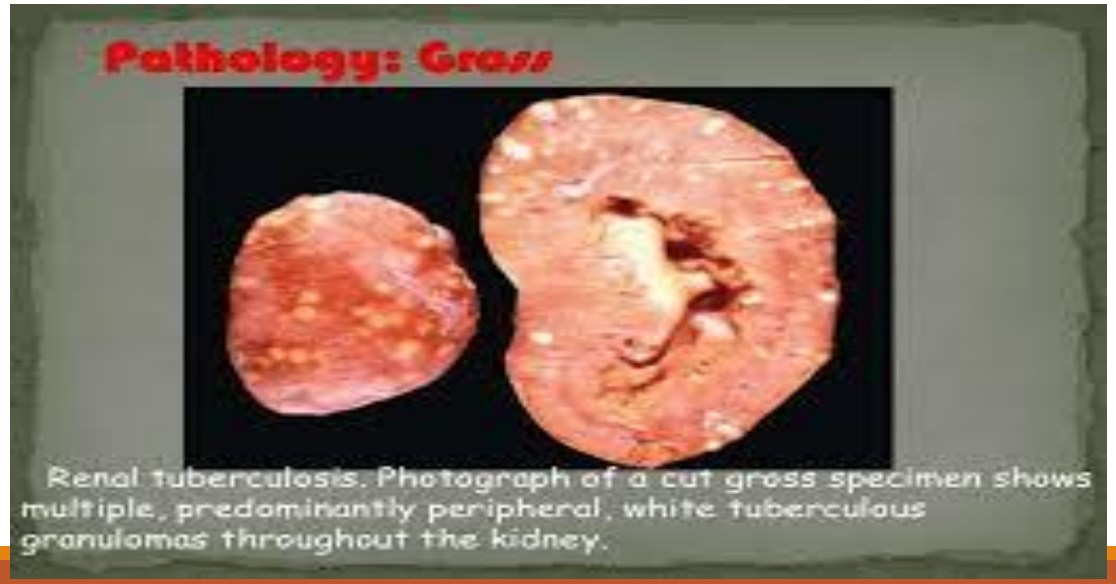
- Primary pulmonary infection
- Imflammotory reaction
- Little resistance/ Multiplication
- Spread Limphatic then blood
- Immune response within 4 weeks
- Most individuals control 1ry infection
- Dormant Bacilli wait appropriate circumstances.

Pathogenesis:

- The small silent renal granulomas resulting from ilent hematogenous dissemination are typically founf bilaterally in the renal cortex.
- Arise from capillaries within and adjacent to glomeruli.
- Thee cortical granulomas remain dormant until unknown factors permit the bacilli to proliferate.
- In enlarging granuloma rupture,delivers organisms into the proximal tubule.

Pathology anatomia

Initial TB lesions are localized mainly in the kidney cortex. They are yellowish-white color, various sizes, are composed of infiltration areas, surrounded by specific granulation containing characteristic epithelioid giant cells and lymphoid cells. Infiltration process of the kidney cortex switches to its medulla, there is tuberculosis, destructive papillitis, going beyond the parenchyma, tuberculosis strikes the wall of the pelvis and extends to the ureters and bladder, develops cheesy disintegration of kidney tissue and forms a cavity. Tuberculosis may involve the kidney as part of generalized disseminated infection or as localized genitourinary disease. The morphology of the lesions depends on the site of infection, the virulence of the organism, and the immune status of the patient.



CLASSIFICATION:

We distinguish following clinical forms nephrotuberculosis:

- I STAGE- NONdestructive. Tuberculosis of renal parenchyma.(minimal,primary form)
- II STAGE- limited-destructive form.Tuberculosis papillitus(with inflammatory or non inflammatory of excretory tract.)
- III STAGE- Destructive form.Cavernous nephrotuberculosis with papillitys.
- IV STAGE- common-destructive form, the contralateral kidney failure,loss of kidney function.

Symptoms:

The clinical picture of the disease depends on the amount of destruction and process steps. With the development of destructive changes in the kidneys appear aching pain in the lumbar region, the symptoms of intoxication:weakness, fatigue, weight loss, low-grade fever,dysuria,may be result hematuria. In Children dominate the overall symptoms of the disease, they clearly indicate the location of the pain, pointing to the abdomen.

- Approximately 75% of patients present with symptoms suggesting urinary tract inflammation.

✔ ***DYSURIA***

✔ ***MILD OR MODERATELY SEVERE BACK OR FLANK PAIN***

✔ ***RECURRENT BOUTS OF PAINLESS GROSS HEMOTURIA***

✔ ***NICTURIA***

✔ ***PYURIA***

✔ ***RENAL COLIC-UP TO 10% CASES***

- Proteinuria
- Bladder symptoms in advanced cases(urgency,frequency)
- Paucity of constitutional symptoms usually associated with tuberculosis such as a fever,weight loss,night sweats and anorexia.
- Constitutional symptoms should lead to a search for other foci of tuberculosis.
- Loss of renal function.

DIAGNOSIS:

Laboratory analyses

A microbiologic diagnosis of tuberculosis usually is made by isolation of the causative organism from urine or biopsy material on conventional solid media or by an automated system such as radiometry. Acid-fast bacilli may be seen on microscopy of centrifuged urine, but care must be taken when very few bacilli are seen, because these may be environmental mycobacteria that contaminate the lower urethra. Full technical details are given by Collins et al. (28).

In recent years, nucleic-acid amplification techniques, such as PCR, have been investigated extensively for the detection of M. tuberculosis and other mycobacteria in clinical specimens, notably sputum. Relatively few studies have specifically evaluated PCR for detection of genitourinary tuberculosis, and these show the technique to be sensitive and specific, although some urine specimens contain inhibitory substances (29, 30). In addition, PCR has been used to detect mycobacterial DNA in urine in cases of HIV-related disseminated tuberculosis (31).

Differential diagnosis:

- Chronic nonspecific pyelonephrititis
- Necrotizing granulomas:1)Wegener’s granulomatosis; 2)fungal infections.
- Non-caseating granulomas:1)sarcoidosis; 2)leprosy; 3)brucellosis
- Foreign body type granulosis:1) amyloid; 2)myeloma protein; 3)therapeutic embolization.

TREATMENT:

Modern short-course antituberculosis drug regimens are effective in all forms of tuberculosis. They are based on an initial 2-mo intensive phase of treatment in which, usually, four drugs—rifampicin, isoniazid, pyrazinamide, and ethambutol (or streptomycin)—are given, and these destroy almost all tubercle bacilli. This is followed by a 4-mo continuation phase in which only rifampicin and isoniazid are given, with the aim of eliminating the few remaining near-dormant, persisting bacilli. Currently, the most commonly used drugs such drugs—rifampicin, isoniazid, pyrazinamide, and ethambutol (or streptomycin).

Prognosis

In tuberculosis of the kidneys and urinary tract prognosis depends on the stage of the disease, the sensitivity MBT to the specific drugs. In the early stages of conservative therapy leads to a complete clinical treatment. The worst prognosis in patients with the disease and with the IV stage of the urinary tract changes, in violation of the outflow of urine from the kidney, and immunodeficiency

USED LITERATURES:

- Урология.Под редакцией академика РАМН Н.А.Лопаткина.Глава 8ю,.стр.362-376
- Internet
- GRAY’S ANATOMY FOR STUDENTS.Second edition.
- PubMED