

# Obstetrics & Gynecology TEAM



**Urinary disease in pregnancy**

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Red = important  
Blue = dr notes  
Green = extra

## Urinary Diseases in Pregnancy

### Anatomic Changes in Pregnancy:

- **Kidneys:** ↑ in length, weight, and pelvis size (physiologic hydronephrosis); Rt > Lt
- **Ureters:** dilated or hydroureter (Rt > Lt), urinary stasis
- **Mechanism:** hormonal or mechanical
- **Consequences:** ↑ risk of urinary tract infections

There is more working on the kidney and more blood flow

(because of PGS) More production of urine.

Rt>Lt: because it compressed between the pelvic bone and the uterus which usually lean to the right side

### Physiologic Changes in Pregnancy

- 40-50% ↑ in renal blood flow and glomerular filtration rate (GFR) → creatinine clearance
- ↓ serum level of creatinine, urea, uric acid by 25%
- Fluid volumes: ↑ extracellular volume (intravascular 50% & interstitial component)
- Na & Ka levels maintained
- Chronic loss of renal HCO<sub>3</sub> → ↑ risk of metabolic acidosis

### Urinary Excretion of Nutrients

- **Glucosuria:** ↑ filtered tubular glucose and ↓ tubular reabsorptive capacity, consequence: ↑ risk of UTI
- **Proteinuria:** abnormal
- **Aminoaciduria:** ↑ risk of UTI
- **Water-soluble vitamins:** folate and B12

### Urinary Tract Infections in Pregnancy

- Common medical complication of pregnancy (2-10%)
- Pathophysiology: ascending infection from vagina and rectum
- **Most common causative organisms:** gram -ve enteric bacteria (e.g: E.Coli 60-80%, Proteus, K. Pneumoniae, Pseudomonas, and GBS)
- Lactobacilli cause no UTI

### Risk Factors for UTI's in Pregnancy

1. **Mechanical obstruction:** ureteropelvic junction, urethral or ureteric stenosis, & calculi
2. **Functional obstruction:** pregnancy & vesicoureteral reflux
3. **Systemic diseases:** DM, sickle cell trait/disease, gout, cystic renal disease

## Classification of UTI's

### Clinical:

- Asymptomatic (8%)
- Symptomatic (1-2%)

### Anatomical:

- Lower tract dis: asymptomatic bacteriuria and acute cystitis
- Upper tract dis: acute pyelonephritis

### 1- Asymptomatic Bacteriuria (ABU)

- Incidence in pregnancy: 8%
- **Consequences:** acute pyelonephritis (30%)
- **Clinical presentation:** Usually asymptomatic but may present with symptoms
- **Diagnosis:** culture (MSU)
- **Lactobacillus** (normal vaginal contaminated )
- **Management:** outpatient Abx ( amoxicil, 1<sup>st</sup> generation cephalosporin, nitrofurantoin)
- length: 3-10 days 3 days for non pregnant , 7 days for pregnant(depend on the culture and abx type)

### 2- Acute Cystitis

- Incidence in pregnancy: 1-2%
- **Consequences:** acute pyelonephritis (30%)
- **Clinical presentation:** urgency, frequency, dysuria, suprapubic discomfort
- **Diagnosis:** symptoms and culture (MSU)
- **Management:** outpatient Abx , analgesics
- Length: 7-10 days → reculture

### 3- Acute Pyelonephritis

- Incidence in pregnancy: 1-2%
- **Consequences:** sepsis, adult respiratory syndrome, anemia, renal failure, preterm labour
- **Clinical presentation:** fever/chills, CVA tenderness (costovertebral angle)
- **Diagnosis:** symptoms, physical examination and lab: culture of urine and blood To detect septicemia

- **Management:** Inpatient : 1- Admission 2- Antipyretic agents 3- Abx ( i.v. ampicillin or cephalosporin then p.o)
- Length: 7-14 days → reculture

### Types of UTI Recurrences

1. Relapse: same organism within 2-3 wks

For short time

2<sup>nd</sup>ry to perineal colonization or inadequate Rx

2. Reinfection: new organism within 12 wks

Long time

2<sup>nd</sup>ry to recurrent bladder bacteriuria

3. Superinfection: new organism while on Rx (RX= therapy )

Superinfection is more common in immunocompromised pt : HIV, sickle cell anemia and renal stones

### Prevention:

Prenatal screening for ASB in pregnant women