



Learn simply

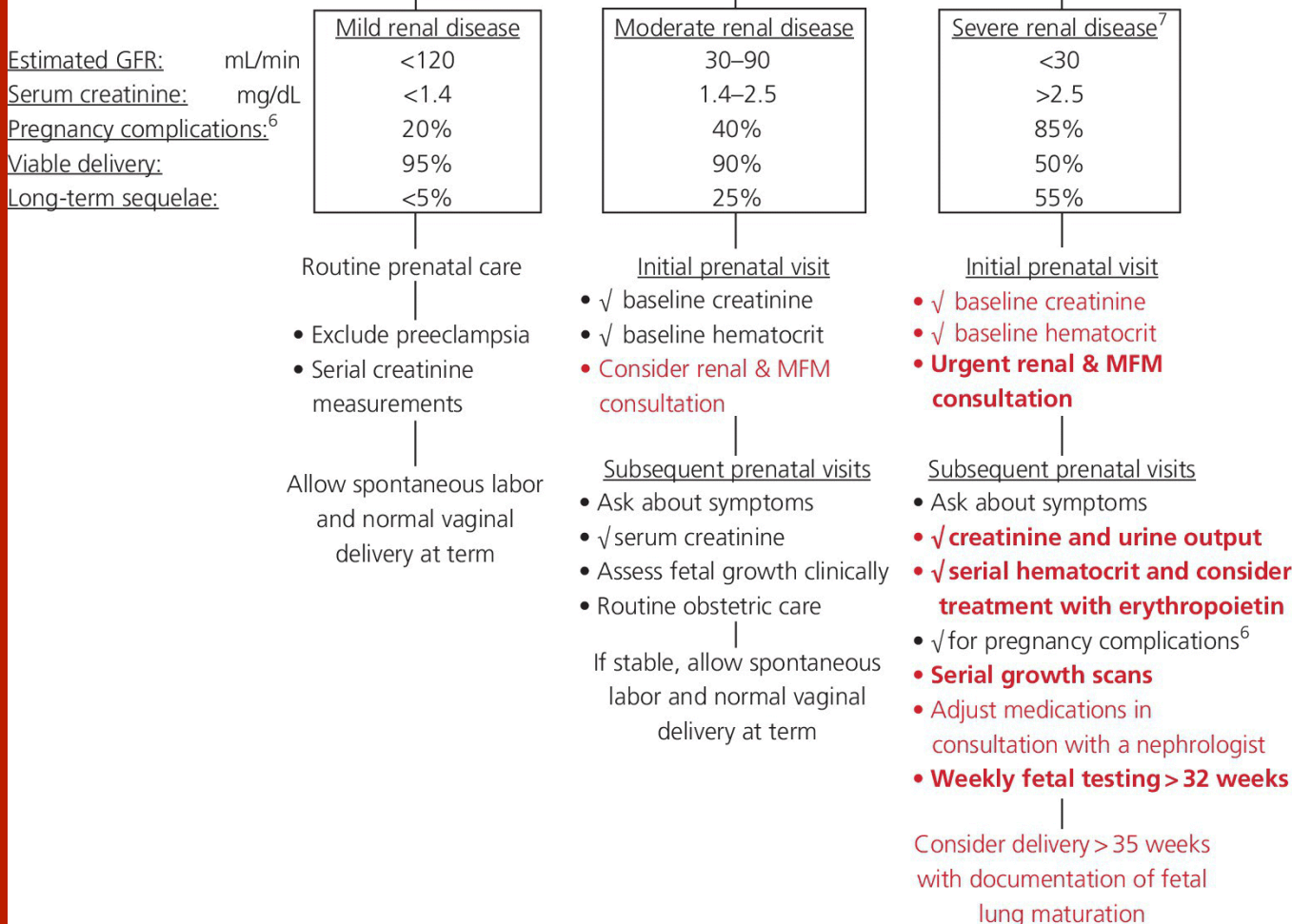
Renal Disease In Pregnancy

Passion profession same

Confirm the diagnosis of renal disease

- Take a detailed history, perform a physical examination including careful blood pressure assessment, and obtain relevant renal function tests¹
- Be aware of the normal physiologic changes in the renal system during pregnancy^{2,3}
- Consider differential diagnosis⁴

Prognosis and subsequent management depends on the patient's baseline renal status⁵



1. A number of renal disorders can complicate pregnancy. Asymptomatic bacteriuria and urinary tract infection/pyelonephritis
2. Acute and chronic renal disease may be asymptomatic or may present with complaints of oliguria/polyuria, frequency, urgency, and pain or bleeding on urination.
3. Carefully assess blood pressure and consider which medications are appropriate for pregnancy. Renal function tests useful in diagnosing and following renal disease include serum and urine creatinine and urea (blood urea nitrogen (BUN)) measurements, BUN/creatinine ratio, fractional excretion of sodium (FeNa), and 24-hour urinary collections for protein estimation and creatinine clearance.
4. In general, women with mild, well-controlled renal disease tolerate pregnancy well. Women with severe renal disease are at risk of symptomatic deterioration and end-stage renal insufficiency.
5. A number of changes occur in the genitourinary system during pregnancy.
6. The glomerular filtration rate (GFR) increases by 50% early in pregnancy, leading to an increase in creatinine clearance and a 25% decrease in serum creatinine and urea concentrations.
7. The increased GFR results in an increase in filtered sodium, and aldosterone levels increase twofold to threefold to reabsorb this sodium.
8. The increased GFR also results in decreased resorption of glucose; as such, 15% of normal pregnant women exhibit glycosuria. Mild hydronephrosis and hydroureter (Right > Left) are common sonographic findings due both to high levels of progesterone (which is a smooth muscle relaxant) and partial obstruction of the ureters by the gravid uterus at the level of the pelvic brim.



1. As regards the fetal genitourinary system, fetal urination starts early in pregnancy and fetal urine is a major component of amniotic fluid, especially after 16 weeks. Fetal renal function improves slowly as pregnancy progresses. Until delivery, the placenta performs much of the waste disposal responsibilities.
2. The differential diagnosis of intrinsic renal insufficiency includes dehydration,
 - RENAL ARTERY STENOSIS,
 - PRE-RENAL DISORDERS (HYPOVOLEMIC OR SEPTIC SHOCK,
 - CONGESTIVE CARDIAC FAILURE),
 - OBSTRUCTIVE UROPATHY (RENAL STONE, POSTOPERATIVE STRICTURE OR OBSTRUCTION),
 - AND ENDOCRINE DISORDERS SUCH AS SYNDROME OF INAPPROPRIATE ADH SECRETION (SIADH),
 - DIABETES INSIPIDUS,
 - HYPERALDOSTERONISM, AND
 - CUSHING SYNDROME.
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3. Pregnancy outcome depends on baseline renal function (above) and on the presence and severity of hypertension. The degree of proteinuria does not correlate with pregnancy outcome. Many of these patients with preexisting renal disease will already be under the care of a nephrologist, but those who are not will significantly benefit from renal consultation.
4. Maternal-fetal medicine (MFM) consultation can also be useful in negotiating the maternal-fetal risks and assisting in the plan of care.



KAWITA BAPAT

1. **Pregnancy-related complications of renal disease include infertility (due usually to chronic anovulation), spontaneous abortion, preeclampsia, intrauterine growth restriction (IUGR), stillbirth/ intrauterine fetal demise (IUFD), and spontaneous preterm birth.**
2. **In women with end-stage renal disease, renal transplantation offers the best chance of a pregnancy success especially if renal function is stable for 1-2 years after transplantation and there is no hypertension. Triple-agent immunosuppression (cyclosporine, azathioprine, and prednisone) should be continued during pregnancy.**

