THE KIDNEY

15. Pregnancy in women with hypertension and/or kidney disease

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Pregnancy in women with hypertension and/or kidney disease

Is it safe to start a family if I have kidney disease?

Many young women with hypertension and/or kidney disease wish to start a family. In the past such women were advised to avoid becoming pregnant. Nowadays, advances in antenatal and obstetric care make it possible for many of these women to complete successful pregnancies, with safe outcomes for themselves and the birth of full-term healthy babies.

What are the problems associated with pregnancy if I have kidney disease?

Women with renal disease considering pregnancy need to consider three important questions regarding their decision:

1. Will they be able to become pregnant?

For several reasons, (including hormonal imbalances leading to infrequent ovulation), women with impaired kidney function are less likely to become pregnant. Women with kidney disease who have previously required treatment with medications such as cyclophosphamide are also less likely to become pregnant, because of the effect these drugs may have on the ovaries.

2. Will the kidney disease affect the pregnancy and its outcome?

Kidney disease can have a detrimental effect on pregnancy with problems such as failure of the placenta (the developing foetus' lifeline) to grow normally, reduced foetal growth, and early delivery of a smaller-sized baby. In general, the more severe the underlying kidney disease, the more likely it is that pregnancy will be unsuccessful.

3. Will pregnancy worsen the underlying kidney disease?

Women should consider the possibility of the pregnancy causing deterioration in the underlying condition causing the kidney disease. Most of the kidney diseases of the adult population can be encountered in women contemplating pregnancy.

In general, the following features are of most importance:

> The majority of women with mild kidney disease and a good level of kidney function at conception, only have a slightly increased risk of foetal or maternal complications.

> Women with high blood pressure and/or reduced levels of kidney function may encounter more complications than those who do not have these problems.

> Women with protein in their urine (proteinuria) very commonly experience an increased level of protein in their urine during the pregnancy, which may or may not improve after the pregnancy.

> Women with pre-existing high blood pressure (see also section 11) often experience an increase in their blood pressure.

> High blood pressure occurs much more commonly in women with impaired kidney function who become pregnant than in those who have normal kidney function.

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Pregnancy in women with hypertension continued...

What features most reliably predict the effect of kidney disease on the outcome of pregnancy?

Level and stability of the underlying kidney function

The poorer kidney function is beforehand, the more likely it is that problems will arise during pregnancy. Regardless of the nature of the underlying kidney disease, women with impaired kidney function, and/or deteriorating renal function prior to pregnancy, have a greater risk of this progressing rapidly during pregnancy. It must also be appreciated that the chances of a successful outcome for the pregnancy are also reduced if renal function is impaired, particularly if renal function deteriorates during the pregnancy. Most women with a blood creatinine level (a blood test which estimates the level of kidney function) below 0.15 mmol/L, which has remained stable in the six months before conception, have successful pregnancies.

Women with blood creatinine levels between 0.15 and 0.25 mmol/L, have an intermediate risk of difficulties with pregnancy. Women with blood creatinine levels greater than 0.25 mmol/L are probably best advised not to become pregnant.

If they succeed in becoming pregnant, most women with a blood creatinine level above 0.25 mmol/L can expect problems with blood pressure, further deterioration of kidney function, and premature delivery of smaller sized-babies. There is also an increased risk of reduced foetal growth and miscarriage.

Presence of pre-pregnancy urinary tract infections

Urinary tract infections (see section 9) even without symptoms **(asymptomatic bacteriuria)** increase the risk of **acute pyelonephritis** in pregnancy, which in turn may cause spontaneous premature labour, with risk to the foetus. It is important to detect the presence of urinary tract infections during pregnancy, as early treatment may prevent this from happening. For this reason, all pregnant women are screened for the presence of bacteria in their urine.

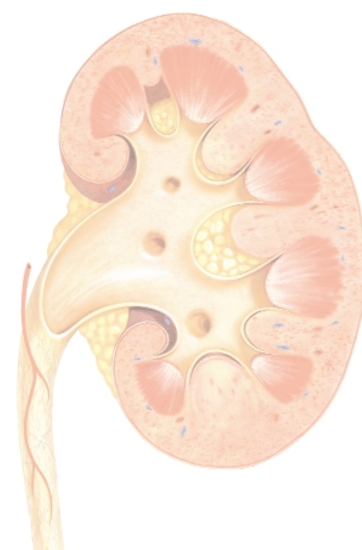
Also, some kidney diseases such as **reflux nephropathy** carry an increased risk of urinary tract infection. Although this is not considered a reason not to become pregnant, it is important that all women with kidney disease and associated urinary tract infections, are screened regularly throughout their pregnancy for bacteria in the urine.

Presence of high blood pressure prior to becoming pregnant

Poorly controlled high blood pressure before pregnancy carries a risk of reduced foetal growth and the development of pre-eclampsia (an increase in blood pressure and development of proteinuria, along with potential abnormalities in the function of several other organs). Any woman with high blood pressure contemplating starting a family needs to be carefully assessed and frequently reviewed to monitor her blood pressure control. Adjustment to the patient's usual drug treatment may be necessary, as some antihypertensive drugs are safer to take in pregnancy than others. Most of women with high blood pressure whose condition is carefully monitored and controlled throughout their pregnancy avoid problems.

When hypertension is due to underlying kidney disease, it may become more severe during the pregnancy, more difficult to control, with greater risks of placental insufficiency and maternal complications. These women should be frequently monitored in a special High Risk Pregnancy Clinic on a weekly or fortnightly basis.

The majority of women with high blood pressure whose condition is carefully monitored and controlled throughout their pregnancy have successful outcomes.



Babies born to women requiring treatment for kidney disease with powerful drugs used to control the immune system (immune-suppressive medications) may be at increased risk of birth defects.

Pregnancy in women with hypertension continued...

Necessity for certain classes of therapy

Babies born to women requiring treatment for kidney disease with powerful drugs used to control the immune system **(immune-suppressive drugs)** may be at increased risk of birth defects.

While there is a growing body of evidence that most babies born to women taking drugs such as corticosteroids (cortisone), azathioprine and cyclosporin A are entirely normal, there is less information available for other immune-suppressive drugs. Women requiring such treatment as intravenous (by drip) pulse cyclophosphamide for an active kidney disease such as lupus nephritis (see also section 14) should be strongly advised against conception, at least until this treatment is no longer necessary.

Many people with kidney disease are prescribed medication from a class of drugs known as angiotensin converting enzyme inhibitors (ACE inhibitors) to help control high blood pressure and to protect the kidneys by several different mechanisms. Women taking such medications should avoid becoming pregnant while taking them and should **never** take them after the first trimester (3 months) of pregnancy as they can lead to serious problems in the foetus.

Nature of the renal disease

It is known that some renal diseases worsen in pregnancy, and also may effect the outcome. The most important disease in this situation is systemic lupus erythematosis (see also section 14). There is an increased risk during pregnancy, and an even greater risk soon after the birth. Among the other problems associated with this condition, there are frequently an increased risk of blood clots in the mother and an increased risk of damage to heart development in the foetus.

The risks are less clear for other kidney diseases. Most kidney diseases progress at much the same rate whether or not pregnancy occurs. Generally the potential for problems is related more closely to the factors listed above than to the exact nature of the underlying kidney disease itself.