

BK virus nephropathy

What is BK Virus?

BK virus was first identified in the urine of a renal transplant patient in 1971 with the initials BK. It is similar to another virus called JC virus and is a member of the polyoma family, so you may also hear it referred to as **polyomavirus**.

BK infections (**BK virus nephropathy**, meaning BK virus affecting the kidney) have increased over recent years, probably because we are better at diagnosing it, but also because of the more powerful anti-rejection drugs we use now. These drugs help to prevent kidney rejection but do increase the risk of developing infections particularly viral infections.

[More about infections after kidney transplant and while taking immunosuppressive drugs.](#)

BK virus infections may occur in around 3% (3 in every 100) of the renal transplant population, usually within the first year following transplantation.

How does BK virus spread?

How the virus spreads isn't known, but most healthy people have it in their kidneys in a harmless 'latent' (sleeping) form. It only causes trouble in some people after a kidney transplant. It is very unusual for BK virus to cause serious trouble in people who are immunosuppressed for other reasons.

How will I know if I have BK virus?

Most people who carry BK virus have no symptoms.

There are several ways of checking for BK virus, and different hospitals use different tests. Some places test for it routinely, whether there are any worrying signs or not. Others only look for it if there is something wrong, like worsened kidney function. It can be seen

- In kidney biopsies, especially if special techniques are used to show polyomavirus.
- In blood by a 'PCR' test, although these tests are not well standardised yet. ('Standardised' means that a test result from one place would give

the same answer in another.)

- In urine by looking for funny-looking cells infected by BK virus, or sometimes by PCR, although some virus may be normally present in urine and the test in urine is probably even less standardised than that in blood.

Sometimes a positive result in blood or urine may need to be confirmed by doing a kidney biopsy.

What does BK nephropathy do?

In BK nephropathy the virus attacks kidney cells and damages the transplant. One of the problems with BK nephropathy is that under the microscope it can look very like rejection, but its treatment is the opposite.

How can BK nephropathy be treated?

The usual treatment is reduction of immunosuppressive drugs. This usually begins with stopping either MMF or azathioprine but further reductions may be needed. This is a difficult balance because it increases the risk that you might get rejection.

Some second line treatments have been suggested, but none of these are proved to work, and some of them have significant side effects or risks.

How does BK virus affect my transplant?

BK nephropathy can be a serious problem if it doesn't respond to treatment. In the worst case it can lead to losing your transplant.

In a recent study from the USA, those who required treatment for BK nephropathy within the first 6 months following their transplant had an increased chance of losing their transplant. 79% of those who developed BK nephropathy still had a functioning transplant at 3 years compared to 90% of those who did not have BK nephropathy.

It takes weeks to see the effects of reducing immunosuppressive drugs, or of other possible treatments, so you may need to have more frequent blood tests for some months.

Acknowledgements The author of this page was Monica Doyle. It was first published Feb 2011. The date it was last modified is shown in the footer.