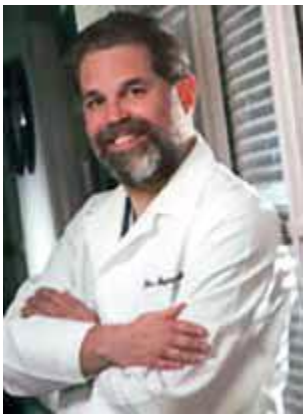
McGowan Institute for Regenerative Medicine
A program of the University of Pittsburgh and UPMC

Naturally Occurring Antibodies May Be Treatment for BK Nephropathy in Kidney Transplant Patients



A viral infection known as BK that commonly causes kidney transplant dysfunction in patients taking high doses of immunosuppressants may be treated with naturally occurring antibodies that already are widely available, according to UPMC-led research that was presented at the World Transplant Congress in San Francisco. McGowan Institute for Regenerative Medicine affiliated faculty member Ron Shapiro, M.D., Professor of Surgery at the University of Pittsburgh and the Robert J. Corry Chair in Transplantation Surgery at the Thomas E. Starzl Transplantation Institute, was a collaborator on this study.

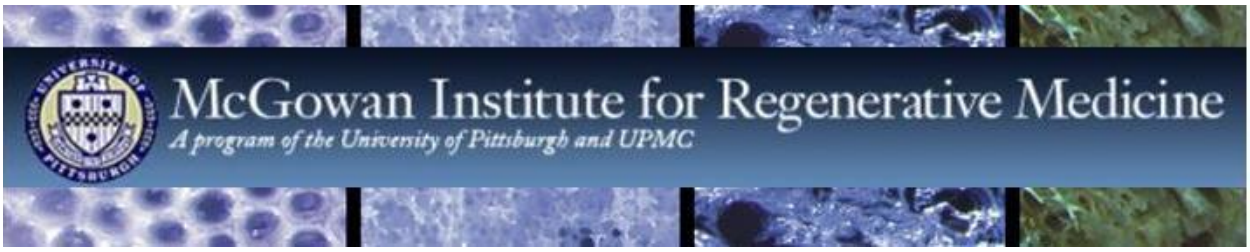
The BK virus infects most healthy children in the U.S., but the infection is usually asymptomatic and readily cleared by the immune system. However, following natural infection, latent virus persists in the kidneys for an indefinite time because antibodies in the plasma and circulating T-cells remain at levels that are high enough to prevent virus reactivation.

"However, if the immune system is suppressed — for example by kidney transplant medications designed to prevent rejection of the organ — viral infection flares up and damages the kidney. This causes a condition called BK virus nephropathy," said Parmjeet Randhawa, M.D., a UPMC pathologist and professor of transplant pathology at the University of Pittsburgh, who led the research. "Currently, there are no anti-viral drugs or vaccines specifically designed for BK nephropathy, and none is likely to be licensed for at least the next 10 years."

Dr. Randhawa and his team found that anti-BK antibodies are present at very high levels in immunoglobulin preparations currently being used to treat other viral infections, as well as immunologic disorders such as antibody mediated rejection of transplanted organs. These antibodies interact with a BK virus surface protein called VP-1 and effectively neutralize the virus. Such neutralized viruses can no longer infect human cells.

"By artificially constructing viruses varying in the composition of the proteins on their surface, we have shown that this neutralizing action is effective against all six common BK virus strains circulating in human populations," Dr. Randhawa said. "These findings open the way to conduct clinical trials for preventing and treating BK nephropathy in kidney transplant patients."

As the proposed immunoglobulin preparations are natural products derived from healthy human subjects, associated side effects are expected to be minimal, Dr. Randhawa said.



Read more…

UPMC/University of Pittsburgh Schools of the Health Sciences Media Relations News Release

Back to Home Page