Use of antibiotic following kidney transplantation does not prevent virus infection

November 15 2014

Among kidney transplant recipients, a 3-month course of the antibiotic levofloxacin following transplantation did not prevent the major complication known as BK virus from appearing in the urine. The intervention was associated with an increased risk of adverse events such as bacterial resistance, according to a study appearing in *JAMA*. The study is being released to coincide with its presentation at the American Society of Nephrology's annual Kidney Week meeting.

Kidney transplantation is the preferred treatment for end-stage renal disease. The development of potent immunosuppressant medications has reduced the incidence of acute rejection to less than 10 percent; however, immunosuppression can lead to reactivation of the BK virus, a polyomavirus which has a prevalence of 60 percent to 80 percent in the general population. BK virus infection progresses through discrete stages, appearing first in the urine (BK viruria), which is associated with a high risk of transplant failure. There are currently no therapies to prevent or treat BK virus infection. Quinolone antibiotics have antiviral properties against BK virus but efficacy at preventing this infection has not been shown in prospective controlled studies, according to background information in the article.

Greg A. Knoll, M.D., of the Ottawa Hospital Research Institute and University of Ottawa, Ontario, Canada, and colleagues randomly assigned 154 patients who received a living or deceased donor kidney-

only transplant in 7 Canadian transplant centers to receive a 3-month course of levofloxacin (n = 76) or placebo (n = 78) starting within 5 days after transplantation. Patients were tested for occurrence of BK viruria within the first year after transplantation.

The overall average follow-up time was 46.5 weeks in the levofloxacin group and 46.3 weeks in the placebo group; 27 patients had follow-up terminated before end of the planned follow-up period or development of viruria because the trial was stopped early because of lack of funding. BK viruria occurred in 22 patients (29 percent) in the levofloxacin group and in 26 patients (33.3 percent) in the placebo group.

Analysis of other virologic measures including occurrence of BK viremia (virus in the blood), peak urine and blood viral loads, and time to sustained viruria showed that such measures were not significantly different between groups. There was an increased risk of resistant infection associated with isolates usually sensitive to quinolones in the levofloxacin group (58 percent vs 33 percent) and also a nonsignificant increase in suspected tendinitis (8 percent vs. 1 percent).

"These findings do not support the use of levofloxacin to prevent posttransplantation BK virus infection," the authors conclude.

More information: DOI: 10.1001/jama.2014.14721