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A Case of a Pneumocystis Pneumonia Twenty-four Years After Living Kidney Transplantation Due to Withdrawal of Sulfamethoxazole/Trimethoprim Prophylaxis

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In your 2017 April issue, Goto et al[1] recommended lifelong prophylaxis with trimethoprim-sulfamethoxazole (TMP-SMX) for the prevention of *Pneumocystis jirovecii* pneumonia (PCP) in kidney transplant recipients. We read the report with great interest and agree with the treatment policy they suggested based on our experience with the following impressive case of a patient with PCP.

We describe a case involving a patient who developed PCP 24 years after a living kidney transplantation. A short 4-month cessation of TMP-SMX prophylaxis against PCP within a 13-year period of therapy allowed the development of PCP. The patient was a 39-year old woman who had developed end-stage renal disease due to chronic glomerular nephritis. She received an ABO-compatible living kidney transplantation from her father when she was 15 years old. Her preoperative and postoperative courses were unremarkable, and her serum creatinine stabilized in the 1.6 to 1.9 mg/dL range. Tacrolimus, 3.5 mg; mycophenolate mofetil, 500 mg; and methylprednisolone, 4 mg were administered as maintenance immunosuppression. By 11 years after her transplantation, our faculty had been in the practice of prescribing lifelong prophylaxis due to increasing incidences of PCP infections. Therefore, we prescribed a twice weekly dose of TMP-SMX (40 mg TMP/200 mg SMX) for PCP prevention. Twenty-four years after transplantation, however, she stopped taking the TMP-SMX for unknown reasons without informing her physician in charge. Four months later, she visited the emergency department complaining of malaise, cough, and fever. Her temperature was 38.3°C, and her oxygen saturation was 95% in ambient air. Computed tomography showed bilateral ground glass opacities. A definitive diagnosis of PCP was made after a β-D-glucan assay returned positive results (836 pg/mL) and a sputum culture for *Pneumocystis jirovecii* was amplified via polymerase chain reaction. We began administration of TMP-SMX, 4 g per day. Because the therapeutic dose of TMP-SMX caused nausea, it was replaced with atovaquone 1.5 g. The atovaquone was continued for 3 weeks and a repeat computed tomography demonstrated improvement of the disease. After these treatments, we resumed the administration of TMP-SMX prophylaxis twice a week.

Goto et al reported that they followed up the patients up to 20 months after starting lifelong prophylaxis, which seemed effective in the timeframe. Our case showed that even after 13 years of prophylaxis with TMP-SMX, a few months withdrawal from the medication can lead to PCP infection. Universal guidelines suggest 3 to 12 months of prophylaxis after transplantation, which may be beneficial in preventing early-onset PCP,[2,3] because the risk is greatest in the first year after transplantation. However, growing evidence shows that for as long as maintenance immunosuppression therapy is needed, PCP prophylaxis must also be continued to minimize the risk of developing PCP, which could occur at any time posttransplantation.[4-6] Therefore, based on this information, the report from Goto et al, and the evidence we present through our experiences, we strongly support the practice of lifelong PCP prophylaxis after transplantation.

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