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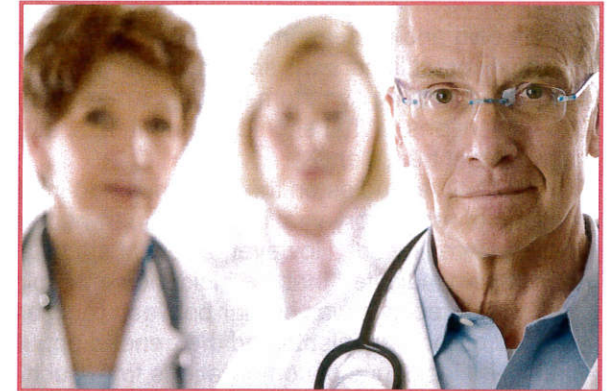
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# Doctor to Doctor



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# Upper Respiratory Tract Infections in Renal Transplant Patients

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The cold and flu season is upon us, and offices of family practitioners will soon be filled with patients manifesting symptoms of upper respiratory tract infections. What should you do if this patient has a renal transplant?

Prospective studies on the incidence and implications of respiratory viral infections in transplant patients are limited. However, a recent study from Spain indicated that the incidence of respiratory viral infections was similar between recipients of solid organ transplants and the general population. The incidence of complications from such infections (pneumonia, bronchitis, sinusitis) was, however, higher in transplant patients. In general, infections should be treated conservatively in immunosuppressed patients in an attempt to prevent the latter complications. Below are some guidelines for the evaluation and treatment of upper respiratory tract infections in recipients of renal transplants.

## **Evaluation of renal transplant patients with URI symptoms**

Patients with renal transplants should, for the most part, be evaluated similarly to non-transplant patients. A history and physical, complete blood count, electrolytes, and liver function tests should be obtained. Unless the initial evaluation suggests a clear diagnosis, studies detecting influenza viruses and cytomegalovirus (CMV) should be performed. Some transplant patients may be particularly susceptible to CMV, depending on whether or not they were exposed to CMV prior to their transplant. A chest x-ray should also be performed, as indicated, depending on the patient's symptoms.

Assessment of the patient's renal function will ensure that the patient is keeping him/herself adequately hydrated while feeling ill. A significant increase in creatinine, especially in the context of fevers, suggests that the patient is not able to maintain an adequate fluid intake and may require hospital admission. An increase in creatinine could also be an indication of rejection, as one study from the University of Pittsburgh showed that 62 percent of adult organ transplant recipients developed some degree of allograft rejection during an influenza infection. A significant increase in creatinine (>25 percent above baseline) is an indication to contact the patient's transplant center.

## **Treatment of renal transplant patients with URI symptoms**

Patients in which influenza is strongly suspected or confirmed should be treated with appropriate antivirals such as rimantadine, oseltamivir, or zanamavir. If a bacterial superinfection occurs, then antibiotic therapy based on presumptive bacterial etiologies should be initiated. Some antibiotics may alter levels of immunosuppressive drugs therefore it is always wise to contact the patient's transplant center to determine if changes need to be made in their oral immunosuppressive regimen.

If the patient does not respond as expected to the treatment initiated, a referral to the transplant center is indicated. This lack of response may be an indication of an infection or superinfection with organisms specific to the immunocompromised host.

Depending on the severity of the infection, the level of the patient's immunosuppression may need to be altered, or even temporarily halted. This change should only be made by the transplant center.

## **Pediatric patients**

Compared to adult patients, in which the incidence of influenza-related complications is fairly low, such complications in pediatric patients may be much more severe. In one study from the University of Pittsburgh, the most common complications of influenza B infection in a group of pediatric renal transplant recipients were central nervous system involvement (80 percent) and pneumonia (60 percent). Influenza-related mortality was 20 percent, and this was associated with CNS involvement.

## **Immunization**

Recipients of renal transplants should be immunized against influenza infections. At the University of Nebraska Medical Center, we recommend vaccination for any renal transplant recipient who is at least 6 months out from his/her transplant. Those within 6 months of transplantation may not respond to the vaccine, given the heavy immunosuppression used during this time period. Serum hemagglutinin-inhibiting titers of 1:40 or greater are associated with protection against influenza. In a study of 68 adult organ transplant recipients who received a trivalent inactivated influenza vaccine, only 15 – 26 percent of the patients developed titers > 1:40 after the first dose.

Transplant recipients should receive inactivated formulations of influenza vaccines. Live attenuated vaccines should not be used in renal transplant recipients, as their safety in this patient population has not yet been verified.

In summary, the diagnosis and treatment of upper respiratory viral infections in renal transplant patients is similar to that of the general population. Patients not responding as expected to treatment, or those with an increased creatinine or whose symptoms interfere with continuing their oral immunosuppressant regimen, should be referred to their transplant center.

At the University of Nebraska Medical Center, physicians and their staff are always available to answer any questions with respect to the treatment of influenza or other infections in renal transplant patients.

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