

**SWINE FLU
EMERGING THREAT****VIEW POINT****H1N1 Virus in Immunocompromised Patients****Rahul Sharma, Ashutosh Gupta**

H1N1 virus infection continues to cause illness and death among persons worldwide specially in high-risk group ie elderly people, very young children, pregnant and people with certain chronic health conditions (chronic heart or lung disease, metabolic or renal disease or immunodeficiencies)(1). Thus, the concern for immunosuppressed patients during current pandemic is a genuine. On August 6, 2009, CDC detected evidence of resistance to the antiviral medication oseltamivir in two severely immunosuppressed patients found positive with novel influenza A (H1N1) virus infection in Seattle, Washington (2). One of them was a teen-aged male was diagnosed with leukemia in November 2008 and subsequently received outpatient immunosuppressive chemotherapy. Other was a female patient in her 40s who had a hematopoietic stem cell transplant for leukemia had a recurrence of leukemia in December 2008. Immunosuppressed patients with influenza virus infection can shed virus for prolonged periods, increasing the chances for development of drug resistance (3). Hence they can be infectious to community for longer time than the usual patients. Immunosuppressed patients are at increased risk for complications of influenza and are recommended for annual influenza vaccination (4). In otherwise healthy adults with seasonal influenza virus infection, viral shedding generally resolves within 7 days, compared with immunosuppressed patients, who can experience prolonged viral shedding for weeks to months. Antiviral resistance can develop during treatment of influenza in these patients, and prolonged viral shedding (3) of up to 18 months has been reported, including shedding of oseltamivir-resistant seasonal influenza A virus for more than 1 year (3). Clinicians caring for immunosuppressed patients with (H1N1) virus infection should be aware of the potential for development of antiviral drug resistance during therapy and prolonged viral shedding. Strict adherence to recommended personal protective equipment and infection-control measures is advised until an immunosuppressed patient with influenza virus infection has serial respiratory specimens that remain negative when tested by both rRT-PCR and viral culture (4). Oseltamivir resistance is usually associated with the H275Y mutation in the neuraminidase in such patients. All circulating novel influenza A (H1N1) virus strains worldwide remain susceptible to oseltamivir

and zanamivir but resistant to amantadine and rimantadine. CDC continues to recommend (5) oseltamivir or zanamivir for treatment of all hospitalized patients with suspected or confirmed novel influenza A (H1N1) virus infection and for outpatients at increased risk for influenza-related complications (e.g., young children, pregnant women, and persons with certain chronic medical conditions) with suspected or confirmed novel influenza A (H1N1) virus infection. Novel influenza A (H1N1) virus strains with the H275Y mutation are susceptible to zanamivir. Therefore, in immunosuppressed patients with oseltamivir-resistant novel A (H1N1) virus infection, zanamivir should be considered the antiviral treatment of choice. Thus, close monitoring for symptoms, early diagnosis and strict isolation as well as close monitoring of antiviral drug resistance among immunosuppressed patients receiving treatment for novel influenza A (H1N1) virus infection is highly warranted. At the Regional Cancer Center, Jammu cancer patients on chemotherapy developing flu-like symptoms are advised to postpone their current cycle of chemotherapy by a week besides practicing self-isolation and PPE's. Cancer patients developing febrile neutropenia are advised to screen for influenza A/H1N1 in addition to routine bacterial cultures. Similar precautions are being followed for ALL patients on maintenance therapy. Any cancer patient presenting with lung infiltrates and fever is prescribed a course of oseltamivir besides empirical antibiotics as per NCCN guidelines.

References

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