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REVIEW

Swine flu

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Summary The recent outbreak of human infection with a novel Swine-Origin Influenza A (H1N1) virus is spreading rapidly through sustained human-to-human transmission in multiple countries. Human-to-human transmission occurs by inhalation of infectious droplets and droplet nuclei, and by direct contact, which is facilitated by air and land travel and social gatherings. The most frequently reported symptoms are fever, cough, myalgia, and sore throat. Detailed contact and travel histories and knowledge of viral activity in community are essential for prompt case detection by the health personnel. Real-time Reverse Transcriptase-Polymerase Chain Reaction analysis of throat swabs or lower respiratory samples is a sensitive means of diagnosis. Use of oral oseltamivir may be warranted for the treatment of severe illness.

Contents

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Introduction

The recent outbreak of a novel Swine-Origin Influenza A (H1N1) virus (S-OIV), which was first detected in April 2009 in California (USA) [1], has now migrated to other parts of the Americas, Europe, Australia, and Asia. S-OIV is a 'triple-reassortment' influenza virus, containing genes from human, swine, and avian influenza A viruses [2]. As of 19 August 2009, 210 countries have officially reported over 182,166 cases of S-OIV infection, including 1799 deaths reported by over 40 countries. The United States has reported the majority of fatal cases: 7511 laboratory-confirmed human cases, including 477 deaths. The other countries reporting laboratory-confirmed cases are Mexico, Canada, the United Kingdom, Australia, Thailand, Chile, Spain, Panama, Brazil, India, etc. [3]. On April 29, 2009 the World Health Organization designated the outbreak a pandemic.

Clinical features

Transmission

Transmission of S-OIV is thought to occur in the same way as seasonal flu [4,5]. Human-to-human transmission occurs by inhalation of large infectious droplets and droplet nuclei as well as by direct contact with secretions or aerosols [6]. Possibly, swine-to-human transmission may occur [7]. At present, there is no evidence of spread of infection by eating pork, or through water. Judging the pandemic potential of S-OIV is difficult with limited data, though recent epidemiological analyses suggest its transmissibility is substantially higher than that of seasonal flu, and comparable with previous influenza pandemics [8].

Infectious period

Data regarding the estimated duration of S-OIV shedding by patients is limited and based upon seasonal influenza virus infection. In general, persons with S-OIV infection should be considered potentially infectious from 1 day before to 7 days following illness onset or until symptoms resolve. Children, patients with lower respiratory tract infections, elderly and immunocompromised patients might be infectious for up to 10 days or longer [9,10]. This is due to low cytotoxic T-lymphocyte activity which is responsible for viral clearance and recovery from infection [11]. Cytotoxic T-lymphocyte activity declines in the elderly as well as in immunocompromised individuals so that viral shedding could persist longer in them [12]. However, studies of viral shedding to define the infectious period of S-OIV are needed. The potential for persons with asymptomatic infection