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Editorial

Severe Acute Respiratory Syndrome: A Newly Recognized Viral Zoonosis of Public Health Concern

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Currently, there are 1415 microbial infections affecting human beings, of which 868 are reported as zoonoses; and among these, 534 zoonotic diseases are of viral etiology. Recent years have witnessed the emergence of several viral zoonoses, such as monkey pox, Hanta virus infection, Crimean Congo haemorrhagic fever, buffalo pox, Nipah virus disease, contagious ecthyma, swine flu, camel pox, Hendra virus disease, Rift Valley fever, severe acute respiratory syndrome, Ebola hemorrhagic fever, avian influenza, West Nile fever, and Marburg disease, which have attracted the attention of national and international public health organizations. Emerging zoonotic diseases are significant causes of high morbidity as well as mortality throughout the world. The implications of these zoonoses are economic, social, environmental, psychological, and political. The transmission of these zoonotic diseases to humans occurs directly or indirectly. In addition, viral zoonoses also require blood sucking arthropods for their transmission to humans. Among these, severe acute respiratory syndrome is a highly infectious life threatening viral zoonotic disease of public health importance. After its first appearance in China in November 2002, severe acute respiratory syndrome spreads to more than 24 countries of the world. It is estimated that from November 2002 to July 2003, 8098 cases and 774 deaths were recorded worldwide. The disease is caused by SARS associated Corona virus (SARS-CoV), which is sensitive to heat and common disinfectant. Severe acute respiratory syndrome was recognized as the first Coronavirus that present severe symptoms in human beings. Humans acquire the infection by direct contact with respiratory secretions and/body fluids of diseased patients. The infection is transmitted most readily by respiratory droplets. Cockroaches, faeces, and sewage are suspected as transmitters of infection in Hong Kong. Severe acute respiratory syndrome is most contagious during the second week of illness. Himalayan civet cat is considered as source of infection. Disease is reported from several countries, such as Cambodia, China, Hong Kong, Singapore, and Hanoi. The incubation of disease is 2 to 7 days, maximum 10 days. Clinical manifestation is characterized by high fever, chills, cough, shortness of breath, difficult breathing, diarrhea, and myalgia. Most of the patients develop pneumonia, and case fatality may reach 10- 50 %. Serious complications, such as heart failure, respiratory failure, and liver failure most likely occur in elderly patients. The virological (isolation of virus from clinical specimens such as nasal secretion, blood, stool on cell line), immunological (enzyme linked immunosorbent assay (ELISA), indirect fluorescent antibody (IFA) to detect SARS-CoV IgG antibodies in patient's sera), and molecular (reverse transcription polymerase chain reaction (RT-PCR) techniques are employed to confirm the diagnosis of severe acute respiratory syndrome. Presently, no effective specific antiviral agent is available. However, supportive treatment with board spectrum antibiotics, such as cefuroxime, clarithromycin, and erythromycin may be tried. In the absence of commercially available vaccine for immunization, certain measures, such as frequent washing of hands with soap and water or alcohol based sanitizer, avoid touching nose, eye, and mouth with unclean hands, use handkerchief or tissue paper when coughing or sneezing, and precautions while handling, killing, selling, preparing and serving the food of civet and other wild animals may help in prevention of disease. It is advised that symptomatic patients should not work in food establishments and also should not interact with healthy people. There is a need of multisectorial collaboration involving specialists from veterinary, medical, public health and wildlife in order to control this emerging viral zoonosis. The further work on the ecology, reservoir, and transmission dynamic should be undertaken to elucidate the epidemiology of severe acute respiratory syndrome. Attempts should be made to develop safe, effective, low cost therapeutic agent to mitigate the morbidity and mortality due of severe acute respiratory syndrome. Since the reservoir of most of the zoonotic pathogens exists in animal kingdom, it is, therefore, advised that Public Health Veterinarian should be appointed in public health programme both at national and international level. It is highly imperative to create zoonotic centers all over the world including India to have active surveillance and diagnosis for devising effective measures for the control of emerging and re-emerging zoonoses, which pose global serious threats to humans and animals health.

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