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Clinical course and outcomes of critically ill patients with middle-east respiratory syndrome coronavirus infection

Background: Since September 2012, 170 confirmed infections with Middle East respiratory syndrome coronavirus (MERS-CoV) have been reported to the World Health Organization, including 72 deaths. Data on critically ill patients with MERS-CoV infection are limited.

Objective: To describe the critical illness associated with MERS-CoV.

Design: Case series.

Setting: 3 intensive care units (ICUs) at 2 tertiary care hospitals in Saudi Arabia.

Patients: 12 patients with confirmed or probable MERS-CoV infection.

Measurements: Presenting symptoms, comorbid conditions, pulmonary and extrapulmonary manifestations, measures of severity of illness and organ failure, ICU course, and outcome are described, as are the results of surveillance of health care workers (HCWs) and patients with potential exposure.

Results: Between December 2012 and August 2013, 114 patients were tested for suspected MERS-CoV; of these, 11 ICU patients (10%) met the definition of confirmed or probable cases. Three of these patients were part of a health care-associated cluster that also included 3 HCWs. One HCW became critically ill and was the 12th patient in this case series. Median Acute Physiology and Chronic Health Evaluation II score was 28 (range, 16 to 36). All 12 patients had underlying comorbid conditions and presented with acute severe hypoxemic respiratory failure. Most patients (92%) had extrapulmonary manifestations, including shock, acute kidney injury, and thrombocytopenia. Five (42%) were alive at day 90. Of the 520 exposed HCWs, only 4 (1%) were positive.

Limitation: The sample size was small.

Conclusion: MERS-CoV causes severe acute hypoxemic respiratory failure and considerable extra pulmonary organ dysfunction and is associated with high mortality. Community-acquired and health care-associated MERS-CoV infection occurs in patients with chronic comorbid conditions. The health care-associated cluster suggests that human-to-human transmission does occur with unprotected exposure.

Biography

Deputy Chairman, Intensive Care Department, Consultant, Pulmonary and Critical Care Medicine, Professor, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Kingdom of Saudi Arabia, Dr. Aldawood graduate from College of Medicine in Kingdom of Saudi Arabia. Then he completed the Residency in Internal Medicine Program in McMaster University in Canada. He obtained Critical Care and Respiriology Fellowship Program in McMaster University, Canada (Jul 97-Jun 00). In July 2000, he joined King Abdulaziz Medical City, Riyadh, Saudi Arabia as a Consultant in Critical Care and Pulmonary Medicine up to the present. He is currently the Deputy Chairman of the Intensive Care Department and Professor in King Saud Bin Abdulaziz University for Health Sciences. In addition, he has more than 40 publications including articles in the New England Journal of Medicine (NEJM), JAMA, American Journal of Respiratory Critical Care Medicine, BMC Anesthesiology, and Critical Care Medicine.

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