

Risk to the Health Care Workers in Present Pandemic of COVID-19- Case Report

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Abstract

Background: Presently little is known about the effectiveness of personal protective equipment for health care workers who are directly in contact with the patients infected with Novel (SARS- CoV-2) [1,2].

Objective: To assess the clinical picture and risk of the health care worker who come in contact with the COVID 19 patients directly before they were known to be positive patients.

Keywords: COVID19; PCR; Nasopharyngeal Swab; Health Care Workers

Case Report

The patient was a 56 years old middle-aged lady with diabetes mellitus and hypertension who was hospitalized in January 2020 for community-acquired pneumonia. She had not travel recent travel history to China nor had had contact with anyone known to have COVID-19. She required supplemental oxygen on admission; the following day, she developed respiratory distress that required endotracheal intubation by the emergency airway team and mechanical ventilation in the Intensive Care Unit (ICU). She was then shifted to the ICU (Intensive Care Unit) for intubation. She improved clinically after 5 days of mechanical ventilation and was subsequently extubated to noninvasive ventilation. On the day that the patient was extubated, a nasopharyngeal swab was sent as part of COVID-19 surveillance, and it was positive for SARS-CoV-2 on Polymerase Chain Reaction (PCR) assay [3]. Two other swabs obtained on subsequent days tested positive for SARS-CoV-2.

On the basis of contact tracing, 38 health care workers (Including Doctors, Nursing staff, Ward boys, Sweeper) were identified as having exposure to aerosol-generating procedures for at least 15 minutes at a distance of less than 2 meters from the patient who happened to be COVID-19 Positive. The aerosol-generating procedures included endotracheal intubation, extubation, noninvasive ventilation, and exposure to aerosols in an open circuit [4]. All 38 health care workers were placed under home isolation

for 14 days, with daily monitoring for cough, dyspnea, and myalgia and twice-daily temperature measurements. In addition, they had nasopharyngeal swabs scheduled on the first day of home isolation, which could have been day 1, 2, 4, or 5 after last exposure to patient, and a second swab scheduled on day 14 after their last exposure. The swabs were tested for SARS-CoV-2 by using a PCR assay. None of the exposed health care workers developed symptoms, and all PCR tests were negative.

Discussion

The primary route for the spread of COVID-19 is thought to be through coughing, sneezing, or breathing due to the aerosolized droplets that are expelled, but there. In the situation we describe, 85% of health care workers were exposed during an aerosol-generating procedure while wearing a surgical mask, and the remainder were wearing N95 masks. That none of the health care workers in this situation acquired infection suggests that surgical masks, hand hygiene, and other standard procedures protected them from being infected. Our observation is consistent with previous studies that have been unable to show that N95 masks were superior to surgical masks for preventing influenza infection in health care workers [5]. We emphasize, however, that nearly all experts recommend that health care workers wear an N95 mask or equivalent equipment while performing an aerosol-generating

procedure. We recognize the limitations of this single case report and acknowledge that additional studies are necessary to determine how best to protect health care workers from becoming infected with SARS-CoV while they are providing care for patients with COVID-19. Moreover, the distancing should be maintained at least 2 meters from the COVID19 patient for decreasing the spread of infection. More isolation centers should be established for keeping the patients under observation with protection to the normal healthy health care workers. Though the use of PPE and N95 masks be encouraged in anyway.

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