



Family clustering of SARS-CoV-2 in Qazvin, Northwest of Iran

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Abstract

Background: Human infection affected by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been recognized as a global health concern. We report the epidemiological and clinical characteristics of patients with a familial cluster of SARS-CoV-2 from Qazvin province (located in the northwest of Iran).

Methods: In this cross-sectional study, we enrolled 332 hospitalized patients that were confirmed SARS-CoV-2 diseases with laboratory-based (PT-PCR) test in Qazvin province, Iran. Having family infection transmission and subsequently, family clustering of SARS-CoV-2 disease was assessed with the Generalized Estimating Equation model in patients.

Results: Crude odds ratio estimates of creating family clustering of SARS-CoV-2 infection was 0.47 times [95% CI: 0.23, 0.98, $p=0.045$] less for female compared to the males; 2.26 [95% CI: 1.11, 4.58, $p=0.024$] and 2.69 [95% CI: 1.47, 4.93, $p=0.001$] for SARS-CoV-2 patients that had digestive and muscle pain in comparison with those did not this mentioned symptoms, respectively. 1.52 [95% CI: 1.05, 2.23, $p=0.024$] for patients with a longer hospitalization compared with patients that had shorter duration of hospitalization and adjusted odds ratio estimates were 2.13 [95% CI: 1.12, 4.03, $p=0.020$] for patients who receive public health services in comparison those did not receive public health services.

Conclusion: Our findings confirm the person-to-person transmission of this novel coronavirus in family settings and hospitals, and the reports of infected travelers in other geographical regions. Major gaps in our knowledge about the potential factors in creating family clustering of SARS-CoV-2 infection, epidemiology, duration of human transmission and etc. need fulfillment by future studies.

Keywords: Epidemiology, SARS-CoV-2, COVID-19, Family Clustering, Close Contacts, Iran

Conflicts of Interest: None declared

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Introduction

Since the end of December 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was initially reported in Wuhan City, China (1). In January 2020, SARS-CoV-2 was declared to be a global health emergency by the World Health Organization (WHO) (2). Until

August 5, 2020, 18,727,013 confirmed cases and 704,783 deaths of 215 countries had been documented globally (3). Iran confirmed the first case of SARS-CoV-2 in February 2020 in Qom. Currently, 314,786 confirmed case and 17,617 deaths owing to SARS-CoV-2 have been reported

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↑What is “already known” in this topic:

Family clusters with SARS-CoV-2 cases have been confirmed and person-to-person transmission in family settings recognized as a serious threat to public health.

→What this article adds:

This study showed the important factors affecting family clustering among patients of SARS-CoV-2 include receiving government health services, days of hospitalization, and digestive and muscle pain symptoms.