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Importation and Transmission Routes of COVID-19 into Northern Cyprus: Considerations and Challenges

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ABSTRACT

Coronavirus disease (COVID-19) that arises from severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has emerged from Wuhan, China, and has spread worldwide currently affecting more than 210 countries and territories. This study aims to report the first observed cases in Northern Cyprus, their importation and transmission routes, and the current challenges of the COVID-19 outbreak. The index case of COVID-19 in Northern Cyprus was identified as a 65-year-old German tourist on 9th March 2020, whereas the first local case was an individual who returned from a trip to England after which multiple transmissions of different origins occurred. Rapid containment measures were enacted to stop the spread of the disease. As of 25th April 2020, 108 COVID-19 cases and four deaths have been observed in the country. Although the epidemiological curve is currently far from a peak, increased preparedness by forming epidemiological surveillance teams to investigate current and future outbreaks, and setting up reference laboratories and centers fully-equipped with next-generation sequencing platforms in which molecular tests can be performed more rapidly and at a larger scale is imperative.

Keywords: Index case, COVID-19, Northern Cyprus, local transmission, preparedness, measures

INTRODUCTION

Coronavirus disease (COVID-19) has originated from the Wuhan Wholefood market in Wuhan, China and was declared as a pandemic by the World Health Organization (WHO) on March 11th, 2020 (1). Despite the containment efforts, public health authorities in China initiated, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has rapidly spread, and has been carried to many countries by travelers. There are 2 626 321 confirmed cases and 181 938 deaths reported globally as of 24th April 2020 (2). Northern Cyprus is located in the Mediterranean region with a population of ~374 000, where tourism as a leading sector and source of income. The first COVID-19 case in Northern Cyprus was reported on 9th March 2020 and was a tourist who air-travelled and presented with high fever and other COVID-19 related symptoms after arrival. This study aimed to report first observed cases in Northern Cyprus, their importation and transmission routes, the containment measures, as well as challenges of the COVID-19 outbreak.

MATERIALS AND METHODS

Case Definition, Case Finding and Data Compilation

The definitions of probable and confirmed cases have been based on WHO guidelines (3) and the cases were confirmed at the Burhan Nalbantoglu State Hospital molecular reference laboratory from nasopharyngeal swabs by quantitative real-time polymerase chain reaction (PCR) test as recommended by Centers for Disease Control and Prevention (CDC) (4). Cases were identified when patients were admitted to the state hospital (consequently converted to a pandemic hospital) or contacted the COVID-19 helpline with suspected symptoms. Contact-tracing of COVID-19 positive cases has been performed by the Primary Health Services Department. Regional and demographic data have been obtained from the Northern Cyprus Presidential Crisis Center.

RESULTS AND DISCUSSION

Detection of first Imported Cases

The first (index) case of COVID-19 in Northern Cyprus was laboratory-confirmed on 9th March 2020 and was announced on 10th March 2020 as a 65-year-old German tourist who arrived in Northern Cyprus on 8th March 2020 (5). All the individuals within the tourist group were immediately isolated and quarantined. Consequent cases linked with the spouse of the German tourist, other tourists travelling within the group, and the bus driver transporting them were observed, hospitalized and treated. On 13th March 2020, the first local case was identi-

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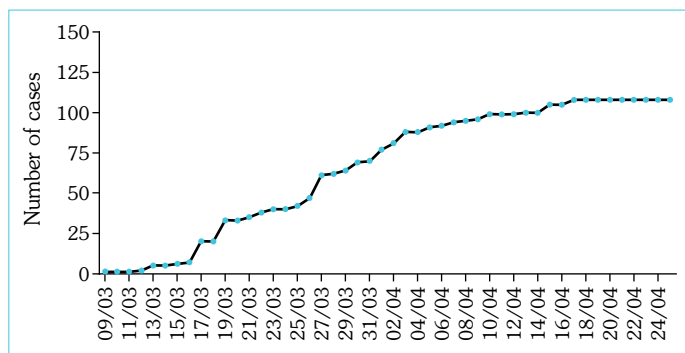


Figure 1. Number of COVID-19 cases observed in Northern Cyprus between 09th March 2020 and 25th April 2020

fied as a Northern Cyprus citizen who returned from England, and subsequent local transmission occurred via individual's contacts. All proximity-contacts were traced back and quarantined in government allocated sites.

Description of the Current Situation

As of 25th April 2020, a total of 108 cases of COVID-19 has been observed in Northern Cyprus. Of these, 12 cases are currently under treatment, and 92 cases have recovered. The number of cases detected between 9th March 2020 and 25th April 2020 is shown in Figure 1. No cases have been detected since 20th April 2020 (6, 7). So far, four COVID-19 related deaths have occurred, of which two are German (from the tourist group) and two are Northern Cyprus citizens. All German tourists who completed their quarantine period and/or treatment have returned to Germany. When the epidemiological distribution of COVID-19 was analyzed, nine geographical regions within the country were found to be affected. These regions included the capital city Nicosia, Gonyeli, Kyrenia, Karavas, Lapithos, Famagusta, Karpasia, Pergamos, and Lefka. When the number of tests performed (n=8747) are considered (as of 25th April 2020), ~2.34% of the population in Northern Cyprus (n=374 000) (8) has been tested.

Response, Containment Measures and Challenges

The response to COVID-19 instigated in Northern Cyprus has been a rapid one. After the first case was observed on 9th March 2020, all schools were immediately closed. All non-essential civil workers were allowed to go on administrative leave and asked to stay home. Large gatherings, such as meetings and social events, were banned. On 14th March 2020, travel restrictions started being put in place and on 19th March 2020, all international travel has stopped into the country, and all Northern Cypriot citizens entering the country were subjected to 14-day quarantine at a government allocated site. A full curfew was imposed on 1st April 2020 between 21:00 and 06:00, as well as a partial curfew, during the rest of the day and is still ongoing. On April 6th 2020, travel across districts within the country was also banned by the government. On 24th April 2020, the government implemented the mandatory use of masks in public areas in an attempt to reduce both droplet and aerosol routes of transmission (9), particularly by undetected pre-symptomatic or asymptomatic individuals. Although the containment measures have been highly successful in controlling the number of confirmed cases and the epidemiological curve is far from a peak, an increased number of tests may be required for a

better surveillance analysis, which may be economically challenging. Currently, only symptomatic patients and their close contacts are tested for the disease. An active screening strategy in individuals who have been actively working during the pandemic and have not self-isolated, as well as random sampling from multiple different regions, would be a good indicator of active or asymptomatic cases, which may give predictions on the level of herd immunity (10). Unfortunately, due to the lack of coordinated reference laboratories with trained laboratory staff and diagnostic molecular biology equipment, the current testing strategy may not be sufficient for the timely identification of all COVID-19 cases.

CONCLUSION

Although the situation in Northern Cyprus is currently steady without a major number of COVID-19 related deaths, reports from other countries show how easily the dynamics can change, particularly once restrictions are removed. An active screening strategy is required to provide a more accurate number of cases. The considerations in this report have been provided to promote decision-makers and authorities to increase preparedness by forming epidemiological teams to investigate current and future outbreaks, and set up reference laboratories and fully-equipped centers in which molecular tests can be performed more rapidly and at a larger scale.

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