



Rethinking the First COVID-19 Death in Turkey

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We write to describe the case of the first official death due to COVID-19 in Turkey, in order to throw light on the Turkish health system's response to pandemic in its initial phase.

The case concerned a 90-year-old male patient who presented to our hospital in İstanbul on March 10, 2020, before the first confirmed case of COVID-19 had been detected in Turkey. His presentation consisted of cough, dyspnea, fever (37.8 degrees), and bilateral basal fine crackles. The patient had a history of hypertension, ischemic heart disease, and idiopathic hypereosinophilic syndrome with a long history of corticosteroid use. His lymphocyte and CRP levels were 1.850 (29%) and 0.53 ($n < 0.05$) respectively. Computed tomography (CT) of the thorax showed peripherally located ground-glass opacities, more prominent in the bilateral lower lobes. He had no history of international travel. We started treatment with ceftriaxone, clarithromycin, and oseltamivir with a pre-diagnosis of community-acquired pneumonia. Lab investigations revealed negative serology for both influenza and respiratory viruses and no bacterial growth in the culture.

At that time, clinicians had insufficient knowledge on the clinical aspects and CT findings of COVID-19. Although we considered COVID-19 as a possible diagnosis after evaluating the laboratory results together with radiological and clinical findings, the final diagnosis of COVID-19 was not made until much later. When the patient deteriorated with worsening hypoxemia that required non-invasive mechanical ventilation treatment two days after hospitalization, his lymphocyte count had decreased to 960 and the D-dimer level reached 8.650 ($n < 500$). Testing for COVID-19 was not easy at that time since there was only one authorized reference laboratory for PCR in Ankara to serve a country of 84 million. Although the country has adequate capacity and capability of microbiology laboratories, the Ministry of Health abstained from authorizing them for PCR testing for SARS-CoV-2.

The patient's relatives eventually managed to find a lab to perform PCR, and we started hydroxychloroquine treatment after he tested positive for COVID-19. We also contacted the district health directorate for serological testing. The official PCR result came back negative 28 hours after we sent the respiratory swab to the authorized lab in Ankara. At that time, we did not have sufficient information about the frequency of false negativity of the PCR. Despite this, we continued treatment and conducted a second PCR test. The result was communicated "verbally" as "high-risk" after 48 hours. The patient died seven days after hospitalization due to respiratory failure despite hydroxychloroquine and lopinavir/ritonavir treatment.

Since the PCR test result was not officially reported from the lab in Ankara, the death was classified and reported as "Infectious Diseases - Natural Death." After his death, a team from the district health directorate conducted contact tracing and monitored his close contacts. The patient is classified as the first official patient who lost his life because of COVID-19 in Turkey inasmuch as "high-risk" translates into "positive" and only after the repercussions of his story were published in the media.

This case demonstrates useful lessons:

1. We had to lose time in obtaining the official PCR results from Ankara although we had many similar facilities in İstanbul. We also would like to point out the discrepancy between the PCR results and the confusion we had to deal with. PCR's sensitivity and specificity for SARS-CoV-2 is limited. The lack of formally written notification of official lab results

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from Ankara to our hospital blurred the coherence and led us to question the transparency.

2. Where there are deficiencies in lab testing capacity, clinical diagnosis may be necessary. Under these circumstances, clinical judgment should be the premise to rely on.
3. To control the spread of the disease, preparedness and organizational capacity of the healthcare systems at every tier play a crucial role. The unprecedented delays we faced in this case, and the untimely and improper flow of information can be interpreted as signs of Turkey's lack of preparedness for COVID-19, although there was quite a long time since its declaration as a "Public Health Emergency of International Concern" by the WHO on January 30, 2020.
4. Last but not least, Turkey's chief focus on hospital-based control strategies as opposed to a public health approach for containment has fallen short in mobilizing the capacities of hospitals and laboratory facilities in the initial phase. We believe that Turkey's performance could be much better if the initial plans in terms of preparedness were in place in accordance with commitment to increased testing capacity.

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