



COVID-19 in Kazakhstan: A Fatal Case Report

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ABSTRACT

Background: COVID-19 is a new severe acute respiratory infection that arises from coronavirus SARS-CoV-2, that has spread around the world, including Kazakhstan. Here, a fatal clinical case with COVID-19 in East Kazakhstan was presented.

Case Report: A 40-year woman complained of severe weakness, fever (39,0°C), body aches, headache, malaise, dry cough, chest pain, shortness of breath, feeling of lack of air for four days. The condition was severe due to acute respiratory and acute cardiovascular failure. She was inhibited; her skin was cyanotic, cold. Her temperature - 35°C, cachexia, breath rate – 39/min, blood pressure - 50\30 mmHg., pulse rate – 122/min, SO₂ – 52, weak breathing in auscultation of lungs, moist rales and hepatomegalia. She did not travel outside the city, the history of alcohol abuse. Laboratory examination revealed leukopenia, thrombocytopenia, ESR acceleration, CRP increase, and positive PCR of nasopharyngeal smear on COVID-19. Chest X-ray showed bilateral focal pneumonia. Acute onset, toxemia, pneumonia, severe course complicated with acute respiratory and acute cardiovascular failure, positive PCR on COVID-19 were supported by a clinical diagnosis of COVID-19, pneumonia, severe course. Complications included acute respiratory failure II-III, acute respiratory distress syndrome, accompanying disease – alcohol intoxication. Antibiotic therapy with Clavam 1200 mg x 1 time intravenous N1 were started together with intravenous fluid infusions. Tracheal intubation was performed. Although mechanical ventilation and ongoing resuscitation saturation did not rise, cardiac arrest developed and resulted in death.

Conclusion: The physicians should be aware of the clinical presentations of the severe pneumonia as local cases of the COVID-19.

Keywords: COVID-19, clinical case, epidemiology

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INTRODUCTION

COVID-19 is a new severe acute respiratory infection that arises from coronavirus SARS-CoV-2 (1). Disease has spread over the world, including Kazakhstan. According to data from the World Health Organization (WHO), first cases of unknown pneumonia were associated with Wuhan City, Hubei Province, China, on 31 December 2019. Later, a novel coronavirus revealed in biomaterials from these patients and new coronavirus infection has rapidly spread around the world. On 30 January 2020, the WHO declared a public health emergency of international concern and on 11 March 2020 - a pandemic of COVID-19. Here, a fatal clinical outcome of the COVID-19 case was presented and summarized the epidemiology of the COVID-19 recorded in the East region and Kazakhstan.

CASE REPORT

A 40-year woman complained about severe weakness, fever (39.0°C), body aches, headache, malaise, dry cough, chest pain, shortness of breath, the feeling lack of air for four days was applied to the hospital. The onset of the disease was acute with a dry cough, after two days of high fever, chest pain, shortness of breath, and feeling lack of air developed. She drank alcohol the seven days before. Patient was hospitalized in a provisional hospital with a diagnosis of community-acquired pneumonia, severe course, respiratory failure II-III and alcohol intoxication. After positive PCR results for COVID-19 patient was transported to infectious diseases hospital in severe condition due to acute respiratory and acute cardiovascular failure. The physical examination findings of the patient were that the skin was cyanotic, cold. Temperature - 35°C, cachexia, breath rate – 39/min, blood pressure - 50\30 mm Hg., pulse rate – 122/min, SO₂ – 52, weak breathing in auscultation of lungs, moist rales and hepatomegalia. She did not travel outside the city, a history of alcohol abuse. Laboratory examination revealed leukopenia, thrombocytopenia, ESR acceleration and CRP increased (Table 1). Chest X-ray showed bilateral focal pneumonia. Acute onset, toxemia, pneumonia, severe course complicated with acute respiratory and acute cardiovascular failure, positive PCR on COVID-19 were supported by a clinical diagnosis of COVID-19 with severe pneumonia. The diagnosis was made as COVID-19 complicated with acute respiratory failure II-III,

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Table 1. A summary of the case laboratory test results according to hospital days

Laboratory test	Hospitalization days	
	1 day	2 day
WBC (X10 ⁹ /l)	1.3	2.8
Neutrophils (%)	69	47.3
Lymphocytes (%)	25	49.1
Haemoglobin (g/L)	111	103
Thrombocytes (X10 ⁹ /l)	125	38
RBC (X10 ¹² /l)	3.57	3.31
Haematocrit		31
ESR (mm/h)	48	48
ALT (U/L)	33	166
AST(U/L)	153	196
Glucose (mmol/L)	5.6	5.49
Creatinine (mcmol/l)	88	93.36
BUN (mmol/l)	6.4	7.8
Protein (g/l)	63	50.39
TT (sec)	12.4	19.9
INR	1.1	1.42
Fibrinogen (g/l)	7.3	2.66
APTT (sec)	32.6	
CRP	296.2	3.2

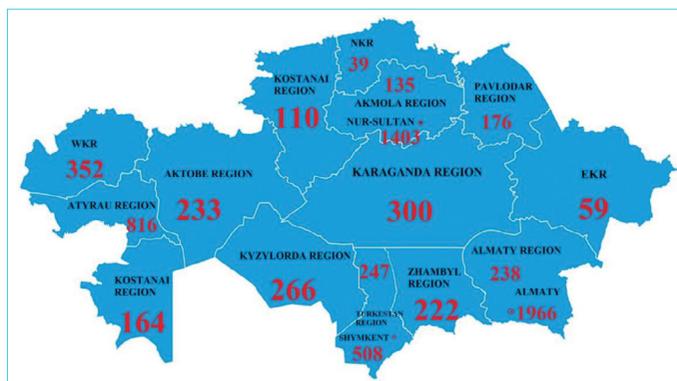
WBC: White blood cell count; ESR: Erythrocyte sedimentation rate; ALT: Alanine aminotransferase test; AST: Aspartate aminotransferase test; CRP: C-reactive protein; BUN: Blood urea nitrogen; INR: International normalized relation; TT: Thromboplastin time; APTT: Activated partial thromboplastin time

acute respiratory distress syndrome. Accompanying disease was alcohol intoxication. Antibiotic therapy with Clavam 1200 mg x 1 time intravenous N1 was started together with intravenous fluid infusions. Tracheal intubation was performed. Despite mechanical ventilation, ongoing resuscitation saturation did not rise; cardiac arrest developed and resulted in death.

DISCUSSION

In Kazakhstan, the first case of COVID-19 was recorded on March 13, 2020. The recorded cases were reached 6969 on May 20, 2020, (Fig. 1). Of these, 3.649 people recovered and 35 resulted in death due to COVID-19 (Table 2). For the prevention of the disease spread, a state of emergency was introduced from March 16 to May 11, 2020. There were restrictions on entry and exit from the country, quarantine or other restrictive measures in regions, stop of the activities in crowded places.

The state of emergency ended on May 11, but quarantine measures are kept with gradual mitigation depending on the epidemiological situation in the country and regions. There are three stages of mitigation of quarantine measures. The first stage is seen when within a week, the increase in cases of COVID-19 does not exceed 7%. The second stage of quarantine measures occurs when the

**Figure 1.** Distribution of the 6969 cases with COVID-19 according to the regions in Kazakhstan (recorded between 13 March and 20 May 2020)**Table 2.** Distribution of the fatal cases due to COVID-19, according to age groups in Kazakhstan, on May 20, 2020

Age	Male	Female	Total
<19	0	1	1
20–39	3	0	3
40–59	4	1	5
60–79	11	5	15
>80	7	0	7
	3	0	3
Total	28	6	35

increase in incidence during the week does not exceed 5%. The third stage is introduced when the incidence rate during the week does not exceed 2%.

The quarantine measures are divided into five different groups. First is the return to work of offices, government agencies, organizations and industrial enterprises (50% stay on the distant way). The second group of quarantine measures is educational services (kindergartens and other child organizations). The third group included relief in the service sector. In measures of the fourth and fifth groups, the population can move between cities and settlements.

Over the past two weeks, the situation in Kazakhstan was stabilized (increase in incidence does not exceed 7%). However, over the past week, the rise in COVID-19 incidence increased by 15%. There are three reasons for this: 1st increase of testing for coronavirus infection. Since the detection of the first cases of COVID-19, more than 559.000 tests have been conducted. Since March, the number of tests per day has increased from 6000 to 23000. This allowed the active identification of patients by screening among risk groups. 2nd increase in the incidence in closed groups. For example, 935 cases were recorded in the Tengiz field. 3rd increase in the number of citizens with signs of COVID-19 due to self-appeals. It occurs because people do not follow preventive measures.

On May 20, 2020, there were 59 cases registered in East Kazakhstan: Three were imported from Egypt and Russia; the rest were local. Of these, nine cases were recorded in Ust-Kamenogorsk

(including one death), 50 confirmed cases of coronavirus infection were in Semey. Male are prevailed - 54.2% (32), women are 45.8% (27). According age children from 0 to 17 years old are 20%, young people (18–44 years old) - 29%, middle-aged people (45–59 years old) - 34%, elderly people (60–74 years old) - 10% and people of senile age (75–89 years) - 7%. The average age was 40.5 years. The severity of the disease was predominantly mild (46%) and moderate (46%), severe - in 7% of cases and extremely severe - in 2% of cases. Nineteen patients (34%) developed community-acquired pneumonia.

Data from the investigation in China showed that the majority of confirmed cases (87%) were aged 30–79 years old and only 3% were people who were 80 years old and more. 51% of patients were male and 49% were female (2). In the Italian population of COVID-19 patients, the median age and prevalence of comorbidities were higher than in the Chinese population (3). In the US, patients' age was 65 years old and more were 31% of the confirmed cases, 45% of hospitalizations, 53% of the intensive care unit admissions, and 80% of the deaths. The highest incidence of severe outcomes accounted for the patients aged ≥ 85 years (4). In the UK, the median age of COVID-19 confirmed cases was 75 years; male prevailed (63%) (5). Children were affected rare than adults and accounted for 1–6% of all COVID-19 cases (6). Data of the study in China showed that only 2.1% of confirmed cases were in the age of 0–19 years (2). Median age was seven years (7). Data from the UK study revealed that the prevalence of infection was less than 5% in patients aged 0–18 years; a higher risk was in males (8). In the US, children were 1.7% of COVID-19 (9). The median age of children and young adults was 9.6 years; the median age was higher in critically ill patients (17.3 years). Males predominated in the critically ill cohort (10). In the Italian study, the median age of the confirmed cases of children was five years, and male prevailed (11). In one study, the median age was four years, and male predominated (12).

CONCLUSION

The clinical presentation of COVID-19 shows severe course due to late hospitalization and severe comorbid state (alcohol abuse). The physicians should be aware of the clinical presentations of severe pneumonia in local people during the pandemic of COVID-19.

Informed Consent: Written consent was taken from the husband of the presented patient.

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