A Case of COVID-19 Patient Presenting with Gastrointestinal-Specific Symptoms in Indonesia

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ABSTRACT

Coronavirus disease 2019 (COVID-19) is an emerging infectious disease officially declared as a pandemic on 11 March 2020 by the World Health Organization (WHO). Indonesia's COVID-19 case fatality rate remain consistently high, approximately twice the global case fatality rate available. Patients typically present with fever, dry cough and dyspnea. However, there were reports of atypical COVID-19 symptoms such as myalgia, fatigue, diarrhea, nausea, and vomiting. These atypical presentations were suggested to indicate a more severe COVID-19. Here, we present a case of COVID-19 patient presenting with gastrointestinal-specific symptoms in Indonesia.

Keywords: *COVID-19, coronavirus disease, gastrointestinal symptoms, Indonesia*

ABSTRAK

Penyakit Coronavirus 2019 (COVID-19) adalah penyakit menular yang pada 11 Maret 2020 secara resmi dinyatakan sebagai pandemi oleh World Health Organization (WHO). Angka fatalitas kasus COVID-19 di Indonesia secara konsisten tetap tinggi, sekitar dua kali angka fatalitas kasus secara global yang ada. Pasien biasanya mengalami demam, batuk kering dan dispnea. Namun, ada laporan gejala COVID-19 yang atipikal seperti mialgia, kelelahan, diare, mual, dan muntah. Presentasi atipikal ini diusulkansebagai salah satu khas penyakit COVID-19 yang lebih parah. Di sini, kami menyajikan kasus pasien COVID-19 yang datang dengan gejala spesifik gastrointestinal di Indonesia.

Kata kunci: *COVID-19, Penyakit coronavirus, gejala gastrointestinal, Indonesia*

INTRODUCTION

Recently, a new type of coronavirus, the 2019 novel Coronavirus (2019-nCoV), was identified by the World Health Organisation (WHO) known to cause an emerging infectious disease known as Coronavirus Disease 2019 (COVID-19). COVID-19 was officially declared a pandemic on the 11th of March 2020[1]. As of March 29, 2020, the total number of COVID-19 cases was 509,164 worldwide with 156,602 of which had recovered; and a 4.76% case fatality (mortality) globally. The first cases of COVID-19-positive patient found in Indonesia was officially announced on March 2, 2020, which contracted from a foreigner positive with Covid-19. More concerning, Indonesia's case fatality rate is consistently high, within a range of 8-9%, which accounts for twice the global case fatality rates available.

Patients with COVID-19 typically presents with fever (> 37.3°C), dry cough, and dyspnea, but studies have also reported other clinical characteristics, such as myalgia, fatigue, diarrhea, nausea or vomiting[2]. Presentation of atypical COVID-19 infection has been speculated to indicate a more severe form of the disease. Involvement of gastrointestinal-specific symptoms have been found, however in very low number of COVID-19 patients[2-4]. Similarly, the first confirmed case of COVID-19 infection in the United States also reported a 2-day history of nausea and vomiting on admission[5]. Here, we report a case of confirmed COVID-19 patients presenting with gastrointestinal-specific symptoms.

CASE ILLUSTRATION

The patient was a 54-year-old male with a known history of Type II Diabetes mellitus and chronic hypertensionwho came to a 24-Hour Executive Clinic in Cipto Mangunkusumo Hospital on March 8, 2020. The patient presented with a chief complaint of 2-day history of nausea and vomiting after every meal. Patient experienced fever and productive cough with clear sputum which started 6 days before administration. The fever subsided and temperature returned normal after given over-the-counter (OTC) antipyretic. On admission,the patient complained of epigastric pain with a visual analog scale (VAS) of 3 (out of 10) that worsen with time and subsidedwhen the patient rested. The patient denied any shortness of breath and travel history to countries with emerging cases of COVID-19. The patient had no history of allergy but had a history of Type II Diabetes Mellitus and chronic hypertension and routinely consumed amlodipine 5mg once daily, candesartan 8mg once daily, linagliptin/metformin HCl (Trajenta Duo) 2.5mg/850mg twice daily. All other history was unremarkable.

On arrival to the hospital, the patient was alert and looked well. Physical examination revealed a body temperature of 37.4°C, blood pressure of 157/94 mm Hg, respiratory rate of 18 breaths per minute, pulse of 95 beats per minute, and oxygen saturation of 96% while the patient was breathing ambient air. The patient was 179 cm tall and weighed 82 kg. On respiratory examination, there were crackles on auscultation on all regions of the lung. Abdominal examination showed epigastric pain upon palpation. All other physical examination results were unremarkable.

Ultrasound examination of the liver showed the patients had fatty liver disease (Figure 1). Chest radiology examination of the lungs showed opacity at the lower lobe of the right lung (Figure 2).Blood laboratory results showed anemia, with an elevated aspartate aminotransferase (AST), slightly elevated blood ureum and creatine with decreased eGFR, elevated random blood glucose, and hyponatremia and hypochloremia (Table 1). Urinalysis results

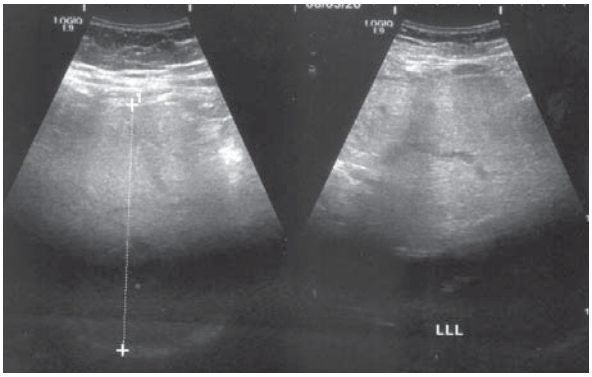

Figure 1. Ultrasound image of the liver (08/03/2020)

Figure 2. Chest radiography showing opacity at the lower lobe of the right lung (08/03/2020)

reported an increase in erythrocyte found in the urine as well as albuminuria. Other laboratory results were unremarkable.

Therefore, the initial working diagnosis was Viral-like pneumonia, dyspepsia, type II Diabetes mellitus with signs of nephropathy (renal insufficiency), grade I hypertension, fatty liver, grade I obesity. The patient was admitted as inpatient and immediately given intravenous ringer acetate 500 mL for 8 hours, ondansetron 8mg IV and paracetamol 1000 mg IV.

The patients treatment regiments were symptomatic and included pantoprazole (Pantozol) 40 mg IV once daily, ondansetron (Narfoz) 8 mg IV three times daily, domperidone (Vometa) 10 mg tablet three times daily, meropenem (Meronem) 1000mg IV twice daily, levofloxacin (Cravit) 750 mg IV once daily, N-acetylcysteine (Fluimucil) 200 mg capsule three times daily, and paracetamol (Tamoliv) 1000 mg IV three times daily. Diet specific for diabetes mellitus and GI problems were also administered to the patient. Patient was planned to carry out a Urea Breath Test examination, as well as nasopharyngeal swab for detection ofInfluenza AH1N1, Influenza A H5N1 and COVID-19. On the second day, laboratory result showed bicytopenia (anemia with slightly thrombocytopenia), lymphocytopenia, increased blood lipase and signs of inflammation indicated by elevated erythrocyte sedimentation rate, procalcitonin, and CRP-quantitative (Table 1).

After 2 days of admission in the hospital, on the 10th of March 2020, the patient was referred to a national referral hospital for COVID-19 (Persahabatan Hospital). Nasopharyngeal swab results turned out to be positive and not long after the patient experienced acute respiratory distress syndrome (ARDS) which worsened and died.

DISCUSSION

COVID-19 is an emerging infectious disease caused by an evolved coronavirus. This new diseasehas yet to be properly characterised, and more importantly, no vaccines or definitive treatment for this disease have been found[6]. The problem also lies in the rapid spread of COVID-19, known to be more infectious than an influenza virus,thus resulting in a global spread of the disease[7].

Our patient presented with a chief complaint of profound epigastric pain with frequent episodes of vomiting on day 4 of fever, however the patient initially experienced fever and productive cough with sputum. The patient reported no travel history to places with COVID-19, which could suggest a possible local transmission. No COVID-19 specific treatment (including the recommended antiviral and hydroxychloroquine) was given to the patient in our hospital as our hospital was not a national referral hospital and resource-deficient. Laboratory test such as polymerase chain reaction (PCR) of the nasopharyngeal swab were notcarried out in our hospital as it was only available in selected hospitals and special laboratories for COVID-19.

The presentation of gastrointestinal symptoms, as found in this patient, have been previously reported in other studies before. However, the occurrence of GI symptoms was rather rare, found to be in about 5-20% of COVID-19 patients[3, 8, 9].To date, no studies have explored the mortality of COVID-19 patients with and without GI symptoms. However, studies have suggested that confirmed COVID-19 patients presenting with GI symptoms were more likely to have a severe type of the disease[3, 10] Thus, GI symptoms presentation in this patient could indicate a severe progression of disease, leading to death.

Pre-existing comorbidities have been a known risk factor to contracting COVID-19 and are also found to aggravate the course of the disease. A meta-analysis of 46248 COVID-19 patients indicate that hypertension and diabetes were the two most prevalent comorbidities[11]. Furthermore, among 32 non-survivors from ICU patients with COVID-19, 22% had diabetes[12]. Other studies also reported that patients with severe COVID-19 disease had hypertension and diabetes[9, 13, 14]. Previously, chronic diseases were also found to be significantly related to severe influenza and was a major risk factor for MERS-Cov patients[15, 16]. Our patient who presented with a severe type of COVID-19 had pre-existing Type II diabetes mellitus with signs of nephropathy (anemia, elevated blood ureum and creatinine, and decreased GFR)and chronic hypertension. Recent advances in COVID-19 research proposed that the link between chronic diseases and COVID-19 could be due to a proinflammatory state and the attenuation of innate immune response. Therefore, impairment of macrophage and lymphocyte function caused by metabolic disorders would lowering immune function[11].In another view, the underlying illness could be aggravated by the 2019-nCoV. COVID-19 are found tocause extra-pulmonary organ damage such as the heart, liver, kidneys as well as the blood and immune systems leading to multiple organ failure, ARDS, shock and eventually death[17, 18].

Table 1. Clinical laboratory result

Clinical laboratory results	Reference range	Hospital day 1 (08/03/20)	Hospital day 2 (09/03/20)
Hemoglobin	13.0 – 17.0 g/dL	11.7	10.1
Hematocrite	40.0 – 50.0 g/dL	34.2	28.6
Erythrocyte	4.50 – 5.50 10^6/µL	4.04	3.50
Mean corpuscular volume (MCV)	83.0 – 101.0 fL	84.7	81.7
Mean corpuscular hemoglobin (MCH)	27.0 – 32.0 pg	29.0	28.9
mean corpuscular hemoglobin concentration (MCHC)	31.5 – 34.5 g/dL	34.2	35.3
Thrombocyte count	150 – 410 10^3/µL	162	141
Leukocyte count	4.00 – 10.00 10^3/µL	6.95	4.92
Basophil	0 – 2 %		0
Eosinophil	1 – 6 %		0
Neutrophil	40 – 80%		77.2
Lymphocyte	20 – 40%		17.0
Monocyte	2 – 10 %		4.9
Difference			0
Erythrocyte sedimentation rate	0 – 15 mm		86
Procalcitonin	< 0.05 ng/mL		0.43
Pancreatic amylase	8 – 51 U/L		46
Blood lipase	8 – 78 U/L		97
CRP-Quantitative	< 5.0 mg/L		66.8
Aspartate aminotransferase (AST)	5.00 – 34.00 U/L	55	
Alanine aminotransferase (ALT)	0.00 – 55.00 U/L	50	
Total bilirubin	0.2 – 1.2 mg/dL	0.57	
Direct bilirubin	0.0 – 0.5 mg/dL	0.35	
Indirect bilirubin	0.2 – 0.8 mg/dL	0.22	
Blood creatinine	0.73 – 1.18 mg/dL	1.50	
Blood ureum	18 – 55 mg/dL	57.4	
eGFR	79.00 – 117.00 mL/min/1.73m^2	52.0	
Random blood glucose	60 – 140 mg/dL	161	
Blood Sodium (Na+)	136 – 145 mEq/L	128	
Blood Potassium (K+)	3.5 – 5.1 mEq/L	4.3	
Blood Chloride (Cl-)	98.0 – 107.0 mEq/L	95.3	
Urinalysis			
Colour	Yellow	Yellow	
Appearance	Clear	Cloudy	
Leukocyte	0 – 5 / HPF	1 - 3	
Erythrocyte	0 – 2 / HPF	2 – 4	
Cylinder	0 – 2 / HPF; Hyaline cylinder	Coarse granula +	
Epithelial cells	+1; squamous epithelial cells	1+	
Crystals	Negative	Negative	
Bacteria	Negative	Negative	
Specific gravity	1.005 – 1.030	1.020	
pH	4.5 – 8.0	6.0	
Albumin	Negative	3+	
Glucose	Negative	Negative	
Ketone	Negative	Negative	
Blood/hemoglobin	Negative	Negative	
Bilirubin	Negative	Negative	
Urobilinogen	3.2 – 16.0 µmol/L	3.2	
Nitrite	Negative	Negative	
Leukocyte esterase	Negative	Negative	

In this patient, definitive diagnosis was done through PCR of nasopharyngeal swab and no CT-Scan was done. The current protocol in Indonesia forconfirmation of COVID-19 case is done through nasopharyngeal swab. There have been disagreements on which methods should be used to establish a definitive diagnosis; however, it is more inclining to suggest the potential use of chest CT for diagnosing COVID-19 cases. Studies have previously reported that chest CT has a high sensitivity for diagnosing COVID-19, provides a more rapid diagnosis, and is more superior to PCR. Sensitivity of chest CT from 1014 cases in China was 97%[19]. Another study reported that sensitivity of chest CT was 98% compared to RT-PCR with 71%[20].

To date, no definitive treatment and management protocols for COVID-19 has been established and management is addressed symptomatically. For GI symptoms, patients were given a proton-pump inhibitor, pantoprazole, with ondansetron and domperidone. Patients were also given antimicrobials as prophylaxis for secondary infection such as meropenem and levofloxacin. For lung disease, the patient was given N-acetylcysteine and for the fever, patient was given paracetamol. Paracetamol was given instead of ibuprofen because of several warnings saying that ibuprofen aggravates COVID-19 symptoms[13, 21].

In conclusion, more information is urgently needed to understand better the course of disease of COVID-19 in order to provide better diagnosis and establish

the most optimal treatment.Ways of reducing case fatality rates need to be further investigated, and most importantly, chain of transmissions need to be stopped to reduce the number of cases.The presentation of GI-specific symptoms as a chief complaint in COVID-19, as found in our patient, should not be overlooked. All healthcare workers should be aware of atypical presentations of this emerging disease, such as GI symptoms, as this could lead to serious implications to patients as well as healthcare providers.

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