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Coronavirus in a patient with hepatitis C: case report

Coronavírus em paciente portador de hepatite C: relato de caso

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ABSTRACT

In February 2020, the World Health Organization (WHO) named the infection with the new coronavirus, which appeared in December 2019 in China, as COVID-19, and defined it as a worldwide pandemic. There is not much evidence about the relationship between liver disease and COVID-19. Laboratory tests have played a fundamental role in confirming COVID-19, what is usually done by the polymerase chain reaction (PCR) sample. The present study reports the laboratory aspects of a patient with type C hepatitis diagnosed with COVID-19 with an unfavorable evolution, devoting special attention to laboratory tests that were almost normal.

Key words: pandemics; hepatitis C; coronavirus infections; laboratories hospital.

RESUMO

Em fevereiro de 2020, a Organização Mundial da Saúde (OMS) chamou a infecção pelo novo coronavírus, que surgiu em dezembro de 2019 na China, de COVID-19, definindo-a como pandemia mundial. Não há muitas evidências sobre a relação das doenças hepáticas e a COVID-19. Os exames laboratoriais vêm exercendo um papel fundamental na confirmação da infecção, que é feita geralmente pela amostra de reação em cadeia da polimerase (PCR). O presente estudo relata os aspectos laboratoriais de um paciente portador de hepatite do tipo C e diagnóstico de COVID-19 com evolução desfavorável, dando atenção especial para exames laboratoriais que estavam pouco alterados.

Unitermos: *pandemias; hepatite C; infecções por coronavírus; laboratórios hospitalares.*

RESUMEN

En febrero de 2020, la Organización Mundial de la Salud (OMS) nombró a la infección por el nuevo coronavirus, que surgió en diciembre de 2019 en China, COVID-19, declarándola como pandemia mundial. No hay mucha evidencia sobre la relación entre enfermedades hepáticas y la COVID-19. Las pruebas de laboratorio han ocupado un lugar fundamental para confirmar la infección, lo que generalmente se hace por la muestra de reacción en cadena de la polimerasa (PCR). El presente estudio reporta los aspectos de laboratorio de un paciente con hepatitis C y diagnóstico de COVID-19 con evolución desfavorable, llamando la atención sobre pruebas de laboratorio con resultados casi normales.

Palabras clave: *pandemias, hepatitis C; infecciones por coronavirus; laboratorios de hospital.*

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INTRODUCTION

Coronavirus is an important pathogen that affects human beings and animals. In December, 2019, a new coronavirus was identified as the cause for a group of pneumonia cases in the city of Wuhan, province of Hubei, China. There was a rapid dissemination of this virus, which reached a growing number of countries in the world. In February 2020, the World Health Organization named the disease COVID-19, defining it as a worldwide pandemic[1].

This case report aims at presenting the clinical, radiological and laboratory aspects of a male patient with COVID-19, with evolution of the liver disease in this epidemiological profile, correlating data with the world literature.

CASE REPORT

Male patient, 45 years old, with type C hepatitis diagnosed more than 10 years ago, in need of medications for treatment. The patient sought the emergency service of a tertiary hospital with a three-days progressive dyspnea worsening by minimal effort. He reported dry cough and fever (not measured in the service). He denied other complaints. He denied contact with people presenting similar symptoms. At physical examination, his blood pressure was 120 × 70 mgHg; heart rate: 115 bpm; respiratory rate: 24 bpm; Sat: 94%, and axillary temperature: 38.2°C. Patient in fair general condition, ruddy, hydrated, acyanotic, and anicteric. No alteration was seen at the patient mouth assessment. At lung auscultation, diffuse and mild expiratory wheezing could be heard in the lower third of both hemithoraces. Due to the current context, COVID-19 was suspected, and laboratory tests were ordered, yielding the following results: hemoglobin (Hb) – 12.3; leukocytes – 12,302 without left shift; platelets – 156,000; urea – 45; creatinine – 1.1; sodium –137; potassium – 4.3; C-reactive protein (CRP) – 1.2; arterial blood gas analysis – pH 7.44; PO_2 – 82; HCO_3 – 24; lactate – 1.8; gamma-glutamyltransferase (GGT) – 117; aspartate transaminase (AST) – 41; alanine transaminase (ALT) – 43. While waiting for the conduction of RT-PCR test, we carried out a chest computed tomography (CT), which revealed consolidations accompanied by ground-glass opacities, extensive in both lungs (**Figure**). The patient underwent oxygen therapy with nasal cannula, and intravenous (IV) dipyrone was prescribed, besides inhalation of bronchodilators. The patient was kept in respiratory isolation, for observation. He developed desaturation (88%-90%), with an increasing need of supplemental oxygen; orotracheal intubation was indicated and the patient was transferred to intensive care unit (ICU). Five days later, he received the RT-PCR positive result for SARS-CoV-2. At the ICU bed, the patient went into cardiopulmonary arrest (CPA); the monitor showed pulseless electrical activity, CPA protocol was implemented. In spite of all measures, the patient died.

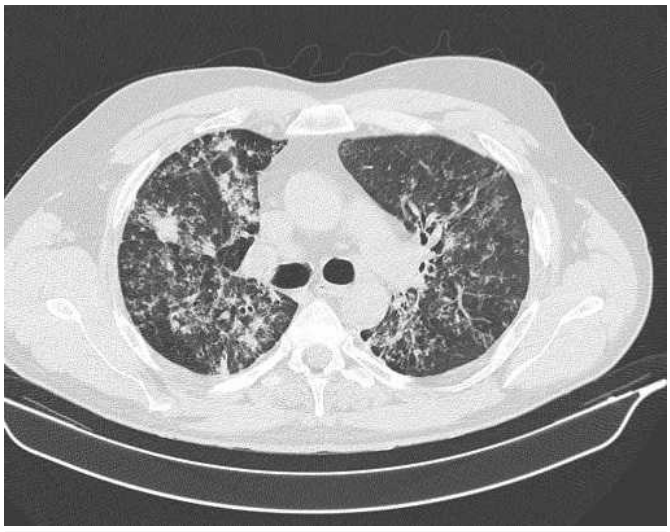

FIGURE – *Chest CT*
Chest CT revealing extensive ground-glass opacities in both lungs; one can notice consolidations with air bronchograms, suggesting inflammatory/infectious process. CT: computed tomography.

DISCUSSION

It is not surely known whether in the current context patients with chronic liver disease are more susceptible to SARS-CoV-2. Chronic liver disease with no presence of immune suppressive therapy seems to pose no increased risk of acquiring SARS-CoV-2 infection. At the same time, the liver seems to be susceptible to infection by SARS-CoV-2 due to the presence of receptors of angiotensin-converting enzyme 2 (ACE2) in biliary and hepatic epithelial cells[2]. The most common laboratory findings among patients infected by COVID-19 include high levels of aminotransferases, while the increase range of AST and ALT is often mild (less than five times the upper limit of normal)[3]. Higher levels of aminotransferases and acute hepatitis were reported in the literature[4]. In the present case, we observed just a slight increase in transaminases values in a patient with chronic hepatitis C. In hospitalized patients with COVID-19, biochemical changes with elevated liver enzymes were found, but not always can we correlate this increase with the manifestation of COVID-19. A wide clinical and laboratory investigation is necessary, as for example, review of the patient's medication list and serological testing for hepatitis virus infection[5]. In the present case, due to the already established

diagnosis of hepatitis C, new serum samples were not collected. However, a new collection of aminotransferases had been ordered in the ICU, what was never done due to the patient's fatal outcome. Some authors state that the use of remdesivir can be beneficial in some patients with COVID-19. In those with ALT less than five times the upper limit of normal, it can be a therapeutical option for patients with liver disease; in those with very elevated ALT levels, the medication must be discontinued[6]. In the present case report, the hypothesis on this medication was considered by the clinical team. In contrast, the literature does not provide a clear role for the use of this treatment, thus preference was given not to use it.

CONCLUSION

The final interest of this study is to present the case of a patient with chronic hepatitis C who had an unfavorable outcome. In the literature we did not find many cases involving patients with hepatitis, therefore, we cannot state whether such a condition would actually be a risk factor for a worst evolution of the disease. The RT-PCR sample has been proving a decisive laboratory tool for the establishment of a definite diagnosis[7], being very useful in the current scenario of this pandemic.

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