

SARS COVID 19 Infection: Dilemma of Thrombotic and Hemorrhagic Risk

Mehdi Simou, Mounir Louardi, Akram Mansour, Othmane Tahiri, Imane Khaoury, Mohamed Amine Abidi, Hussam Salem, Aymane Elouadghiri, Ali khamboubi, Hanane Ezzouine, Boubakar Charra*

Ibn Rochd University hospital of Casablanca, Morocco.

***Corresponding author:** Boubakar Charra, Head of the medical intensive care unit at Ibn Rochd University hospital of Casablanca, Morocco.

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Introduction

The recent emergence of SARS-CoV-2 and the ensuing global pandemic has presented a health emergency of unprecedented magnitude. 10 million people infected and 500,000 deaths are linked to this virus in more than 216 countries. Recent clinical data has highlighted that COVID-19 is associated with a significant risk of thrombotic complications ranging from microvascular thrombosis, venous thromboembolic disease and stroke. And while, a high incidence of thrombotic events in patients admitted for COVID-19 is reported, there is little or no described cases of hemorrhagic accidents under vitamin K antagonists (acenoucomarol) during COVID-19.

Observation

We report the case of a 55-year-old female patient who had an aortic valve replacement 7 years ago, and who's under ½ tsp of acecoumarol 4mg per day.

Her symptoms appeared 2 days before her admission, she had a dry cough, dyspnea, myalgia and asthenia evolving in a context of apyrexia. Given the worsening of her respiratory symptoms, the patient consulted the emergency department of Ibn ROCHD hospital. Due to the COVID-19 pandemic, an rt-PCR for SARSCOV-2 was performed, which came back positive. The patient was then transferred to the COVID-19 dedicated ICU.

On admission, she was conscious, deficit-free, GCS 15/15, hemodynamically stable with blood pressure at 13/07 and a heart rate of 77 beats / min. On the respiratory level, the oxygen saturation was 79% without oxygen and 96% under high concentration oxygen mask, the respiratory rate was at 40 cycles / min with the presence of signs of respiratory struggle. The temperature was 36.5 degrees. Moreover, the patient had hemorrhagic signs such as epistaxis and gingivorrhagia. The initial management required high concentration oxygen mask and half seated position.

Chest CT revealed bilateral pneumonitis, the viral origin of which is very likely with severe parenchyma involvement (50-75%).

On the electrocardiogram: a regular sinus rhythm at 75 bpm, fine QRS without repolarization disorder. The transthoracic ultrasound showed a moderate dysfunction of the left ventricle, an ejection fraction at 35%, a dilated atrial mass, a non-stenotic aortic prosthesis site of a minimal to moderate leak, fine inferior vena cava at 9mm, right ventricle undilated with good systolic function.

The biological assessment revealed lymphopenia at 440, WBC at 5930, Hb at 11.6, Plt at 299000, D-dimers at 690 ug / l for a normal value <280, troponin at 31.2, BNP at 80, ferritin a 395, INR at 8.9, TP at 7%, factor 5 at 80%.

Therapeutic management included: oxygenotherapy, non-invasive ventilation with FiO2 at 40% PEP at 5 and IA at 12 based on 4 sessions per day for the first 48 hours then 2 sessions on the 3rd day, stopping the vitamin K antagonist and 10mg of vitamin k, transfusion of 2 PFCs to manage the hemorrhagic accident under antivitamin K and the association Hydroxychloroquine 200mg * 3 per day + Azythromycin 500mg the first day then 250mg per day and methylprednisone at 80mg / day for 7 days. After normalization of the patient's INR, she was put under hnf 25000ui and ¼ tsp of acecoumarol 4mg. The evolution was favorable. After 5 days of treatment, the patient was eupneic, not dependent on oxygenotherapy.

A transthoracic control ultrasound showed an improvement of the ejection fraction to 45%, a mechanical prosthesis in a non-stenotic aortic position and a compliant inferior vena cava at 14mm.

The COVID 19 PCR test on Day 9 was negative. Patient was discharged with a INR of 2.8 and put on acecoumarol 4mg 1/2 tsp per day with a regular monitoring of the INR.

Discussion

The clotting function in patients with SARS-CoV-2 is significantly impaired compared to healthy people [1]. Indeed, a recent study has shown that venous and arterial thromboembolic events occurred in 8% of patients hospitalized in COVID unit (cumulative rate of 21.0%) and 50% of events were diagnosed within 24 hours of admission to hospital.

The development of COVID-19 syndrome in anticoagulated patients, and in particular their admission to intensive care units suffering from severe acute respiratory syndrome (SARS-CoV-2), expose them to specific problems related to their therapy, in addition of those associated with acute viral infection.

AVK patients hospitalized with SARS-CoV-2 have high instability of INR and TP due to variability in vitamin K metabolism, diet, fasting, co-drugs, liver failure and heart failure. This would explain the case of our patient [2,3,4]; In general, and in the case of patients who have benefited from a mechanical valve prosthesis in aortic position, the target INR must be located within a range between 2.5 and 3.5 [5]. Paradoxically, our patient had an INR lengthened to 8.9 with a collapsed PT at 7% and a normal factor 5.

This is why, we opted in our therapeutic management for heparin therapy. Especially since parenteral administration greatly facilitates antithrombotic treatment in patients who may be intubated and ventilated [6].

Conclusion

Hemostatic abnormalities and thrombotic risk associated with coronavirus disease 2019 (COVID-19) are among the most discussed topics in the management of this disease. That said, it will also be necessary to take into account hemorrhagic accidents rarely reported and establish protocols in this direction.

Competing interests

The authors declare no competing interests.

Authors' contribution

All the authors contributed equally in drafting of the manuscript. All the authors read and agreed to the final manuscript

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