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Letter to the editors

The critical role of complete blood count in the management of patients with COVID-19

Maryame Ahnach[1,&], Nouama Bouanani[1], Sara Nejjari[1], Mounia Bendari[1], Kamal Doghmi[2], Chafik El kettani[3]

[1]Department of Hematology, Cheikh khalifa International University Hospital, Mohammed VI University of Health Sciences Casablanca, Morocco, [2]Department of Hematology, Military Hospital Mohammed V, Mohammed V University Faculty of medicine and Pharmacy, Rabat, Morocco, [3]Department of Anesthesiology and Reanimation, Cheikh khalifa International University Hospital, Hassan II VI University Faculty of Medicine and Pharmacy, Casablanca, Morocco

[&]**Corresponding author:**
Maryame Ahnach, Department of Hematology, Cheikh khalifa International University Hospital, Mohammed VI University of Health Sciences Casablanca, Morocco

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Corresponding author: Maryame Ahnach, Department of Hematology, Cheikh khalifa International University Hospital, Mohammed VI University of Health Sciences Casablanca, Morocco, mahnach@um6ss.ma

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To the editors of the Pan African Medical Journal

Since March 2020, the world has declared a global health crisis caused by the coronavirus COVID-19 pandemic. After Asia, Europe, the United States is the most affected. The main features described are pulmonary manifestations, however, this systemic infection seems to have a direct impact on the hematopoietic system. Many publications have documented the clinical, biological and radiological characteristics of COVID-19 infection, and several international societies have developed protocols for management and follow-up. In these recommendations, biological analysis and especially the complete blood count, represents a major tool in the diagnosis, monitoring, detection of severe forms, and hematological complications [1]. Quantitative hematologic abnormalities have been reported since the first papers, all blood cells can be affected during COVID-19, mainly leukocyte and platelet cells [2].

During asymptomatic forms or the incubation period, patients can manifest a moderate abnormality in the blood count, Qilin et al suggested the potential value of eosinopenia as predictors of early identification of COVID-19 [3]. Regarding symptomatic forms, Guan et al found in a large series of 1099 cases, a predominance of lymphopenia (83%), thrombocytopenia (36.2) and neutropenia (33.7%) [4]. In severe cases, these abnormalities were more prominent (96.1% versus 80.4% lymphopenia, 57.7% versus 31.6% thrombocytopenia and 61.1% versus 28.1% for leukopenia) [5]. Lymphopenia is the most common sign, in fact, the coronavirus attack directly and indirectly the lymphocytes by immune and inflammatory mechanisms [6]. The analysis of the lymphocyte count is therefore a reliable indicator of the severity, which can be really useful in the monitoring and therapeutic adaptation, moreover after clinical improvement the lymphocyte count is corrected [7].

Among recent studies, a meta-analysis, have reported the association between low platelet count (less than 30 10^9/l) and the increased risk of severity and mortality from COVID-19. The pathophysiologic mechanism of thrombocytopenia is multifactorial due mainly to disseminated intravascular coagulation, micro-vascular thrombosis and macrophagic activation syndromes, that can cause bleeding and poor outcome [8]. In summary, the blood count as a routine biological analysis, keeps a prominent role in the early diagnosis and follow-up of COVID-19 infection. The blood cells perturbations are seen as a prognosis factors, careful analysis and interpretation of lymphocyte and platelet count, allows not only to evaluate the prognosis, but above a clinician to adapt

therapeutic care. Compared to specific inflammatory biomarkers tests (Lactate dehydrogenase, Interleukin, procalcitonin, etc.), the blood count remains a less expensive alternative, especially in countries with limited resources.

Competing interests

All authors declare no competing interests.

Authors' contributions

Maryame Ahnach conceptualized and write the manuscript. Nouama Bouanani, Mounia Bendari , Kamal Doghmi and Chafik El kettani collect data. All authors have read and approved the final version of manuscript.

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