Haematological profile of hospitalised COVID-19 patients from a centre in Singapore

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February 24, 2021

Abstract

Background: Haematological markers such as absolute lymphopenia has been associated with severe COVID-19 infection. However, the described cohorts were generally unwell with a large proportion of patients requiring intensive care stay. It is uncertain if these markers apply to a population with less severe illness. We sought to describe the haematological profile of patients with mild disease with COVID-19 that were admitted to a single centre in Singapore. Methods: We examined 554 consecutive PCR positive SARS-COV-2 patients who were admitted to a single tertiary healthcare institution from Feb 2020 to April 2020 2020. We examined patients based on their haematological profile based on full blood count obtained within 24h of presentation. Results: Patients with pneumonia had higher neutrophil percentages (66.5±11.6 vs 55.2±12.6%, p<0.001), lower absolute lymphocyte count (1.5±1.1 vs 1.9±2.1 x109/L, p<0.011) and absolute eosinophil count (0.2±0.9 vs 0.7±1.8 x109/L, p=0.002). Platelet counts (210±56 vs 230±61, p=0.020) were slightly lower in the group with pneumonia. We did not demonstrate significant differences in the neutrophil-lymphocyte ratio, lymphocyte-monocyte ratio and platelet-lymphocyte ratio in patients with or without pneumonia. Sixty-eight patients (12.3%) had peripheral eosinophilia. This was more common in migrant workers living in dormitories. Conclusion: Neutrophilia and lymphopenia were found to be markers associated with severe COVID-19 illness. We did not find that combined haematological parameters: NLR, MLR and PLR, had any association with disease severity in our cohort of patients with mild-moderate disease. Migrant workers living in dormitories had eosinophilia which may reflect concurrent chronic parasitic infection.

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