

Journal of Hematology and Oncology Forecast

Is Eosinopenia a Primary Marker for Covid-19?

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Dear Editor,

In December of 2019, a novel coronavirus (SARS-CoV-2) crossed species barriers to infect humans and was effectively transmitted from person to person, leading to a pneumonia outbreak first reported in Wuhan, China [1]. The most common symptoms at onset of COVID-19 illness are fever, cough, and fatigue, while other symptoms include sputum production, headache, haemoptysis, diarrhoea, dyspnoea, and lymphopenia [2].

Eosinophils, along with neutrophils and basophils, belong to a group of leucocytes known as granulocytes. They originate from bone marrow-derived CD34+ cells. Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF), interleukin (IL)-3, and IL-5 regulate eosinophil development, IL-5 being the most specific for the eosinophil lineage [3].

Detailed clinical investigation of 140 hospitalized COVID-19 cases suggests that eosinopenia together with lymphopenia may be a potential indicator for diagnosis [4].

Li and colleagues reported that the combination of eosinopenia (defined as a reduction of circulating eosinophils $<0.02 \times 10^9/L$) and elevated high sensitive C-reactive protein can effectively triage suspected COVID-19 patients from COVID-19-like symptoms patients [5]. During the COVID-19 pandemic, eosinopenia was described as a hallmark of this infection in patients presenting with fever [6].

This finding is particularly useful for patients triage at the time of an epidemic outbreak when large number of patients with COVID-19 or COVID-19-like symptoms are expecting confirmative nucleic acid tests and/or radiographic examination, while related resources are limited [7].

Based on above mentioned points, we suggest that eosinopenia may be supposed as a primary diagnostic marker for covid-19.

Keywords: Eosinopenia; Covid-19; Diagnosis; Primary marker

References

1. Bozorgnia A, Gharibzadeh S and Bozorgnia M. Is it Possible to Prevent Covid-19 by ACE Inhibitors?. *SF J Clin Pharm Res.* 2020; 2(1): 1003.
2. Rothan HA and Byrareddy SN. The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. *J Autoimmun.* 2020.
3. Flores-Torres AS, Salinas-Carmona MC, Salinas E and Rosas-Taraco AG. Eosinophils and respiratory viruses. *Viral Immunol.* 2019; 32(5): 198-207.
4. Zhang JJ, Dong X, Cao YY, Yuan YD, Yang YB and Yan YQ, et al. Clinical characteristics of 140 patients infected with SARS-CoV-2 in Wuhan, China. *Allergy.* 2020.
5. Li Q, Ding X, Xia G, Chen HG, Chen F and Geng Z, et al. Eosinopenia and elevated C-reactive protein facilitate triage of COVID-19 patients in fever clinic: a retrospective case-control study. *E Clin Med.* 2020; 23: 100375.
6. Fabio A, Cedric H and Cyr YJ. Eosinopenia and COVID-19 patients: So specific?. *E Clin Med.* 2020; 24.
7. Xia Z. Eosinopenia as an early diagnostic marker of COVID-19 at the time of the epidemic. *E Clin Med.* 2020; 23.

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Received Date: 19 Sep 2020

Accepted Date: 25 Sep 2020

Published Date: 28 Sep 2020

Citation: Bozorgnia M, Zoughalchi K, Gharibzadeh S. Is Eosinopenia a Primary Marker for Covid-19?. *J Hematol Oncol Forecast.* 2020; 3(1): 1011.

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