

Correspondence

The specificity and definition of blood eosinophil*To the Editor:*

We read with great interest the article titled “Blood eosinophil count thresholds and exacerbations in patients with chronic obstructive pulmonary disease” by Yun et al.¹ This article confirmed that eosinophil count in circulation of patients with chronic obstructive pulmonary disease (COPD) was a predictive factor for exacerbations of COPD. Moreover, they tried to induce a novel type of COPD, eosinophilic COPD. However, there are some points that need to be clarified.

First, the timing of blood testing was not introduced clearly. The blood cell count during an attack of acute exacerbation of COPD changed significantly and would be quite different from the count in a patient with stable symptoms. Besides, some patients might present allergic conditions, such as dermatitis and rhinitis, which was not documented. These conditions might influence the eosinophil count significantly and causes bias.

Second, in this era of artificial intelligence, identification of a novel predictive marker for a certain disease has lost its charm. Blood cell count was considered as a predictive marker for many diseases,²⁻⁵ and other factors seem to be critical prognostic factors for COPD as well.⁶⁻⁸ However, novel mathematical models with artificial intelligence have presented exceedingly more application value.⁹ Because Yun et al have got a large database of COPD, they shall develop a novel predictive model for acute exacerbations of COPD instead of identifying a controversial factor.

Above all, eosinophilic COPD was a very promising stratification of patients with COPD, which might help in patient clarification, pathological investigation, and fundamental trigger development of novel treatment.

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REFERENCES

1. Yun JH, Lamb A, Chase R, Singh D, Parker MM, Saferali A, et al. Blood eosinophil count thresholds and exacerbations in patients with chronic obstructive pulmonary disease. *J Allergy Clin Immunol* 2018;141:2037-47.e10.
2. Zhang ZL, Wang J, Liu F, Ding MJ, Chen SF, Lu WJ. Circulating neutrophil counts decrease in response to mitigated air quality in stable COPD patients. *Biomed Environ Sci* 2018;31:66-71.
3. Xing YF, Cai RM, Lin Q, Ye QJ, Ren JH, Yin LH, et al. Expansion of polymorphonuclear myeloid-derived suppressor cells in patients with end-stage renal disease may lead to infectious complications. *Kidney Int* 2017;91:1236-42.
4. He YM, Li X, Perego M, Nefedova Y, Kossenkova AV, Jensen EA, et al. Transitory presence of myeloid-derived suppressor cells in neonates is critical for control of inflammation. *Nat Med* 2018;24:224-31.
5. Nan J, Xing YF, Hu B, Tang JX, Dong HM, He YM, et al. Endoplasmic reticulum stress induced LOX-1(+) CD15(+) polymorphonuclear myeloid-derived suppressor cells in hepatocellular carcinoma. *Immunology* 2018;154:144-55.
6. Chen R, Guan L, Wu W, Yang Z, Li X, Luo Q, et al. The Chinese version of the Severe Respiratory Insufficiency questionnaire for patients with chronic hypercapnic chronic obstructive pulmonary disease receiving non-invasive positive pressure ventilation. *BMJ Open* 2017;7:e017712.
7. Zheng Z, Qi Y, Xu X, Jiang H, Li Z, Yang Q, et al. Sputum mucin 1 is increased during the acute phase of chronic obstructive pulmonary disease exacerbation. *J Thorac Dis* 2017;9:1873-82.
8. Chen X, Lu X, Chen J, Wu D, Qiu F, Xiong H, et al. Association of nsv823469 copy number loss with decreased risk of chronic obstructive pulmonary disease and pulmonary function in Chinese. *Sci Rep* 2017;7:40060.
9. Elkin PL, Schlegel DR, Anderson M, Komm J, Ficheur G, Bisson L. Artificial intelligence: Bayesian versus Heuristic method for diagnostic decision support. *Appl Clin Inform* 2018;9:432-9.

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