



## LETTER TO THE EDITOR

### Methodology, as well as physiological and pathological conditions, can affect analysis of the lymphocyte-to-monocyte ratio



### A metodologia assim como as condições fisiológica e patológica podem afetar a análise da relação linfócitos/monócitos

To the Editor,

I read the article by Efe et al.<sup>1</sup> entitled “Calcific aortic stenosis and its correlation with a novel inflammatory marker, the lymphocyte/monocyte ratio” published in the *Portuguese Journal of Cardiology*. The authors aimed to assess the correlation between severity of calcific aortic stenosis and the lymphocyte-to-monocyte ratio (LMR) in adult patients. They reported that there was a statistically significant inverse relationship between severity of calcific aortic stenosis and LMR values in patients compared with healthy controls.

The LMR is calculated as the ratio of lymphocyte count to monocyte count from a whole blood count, which is a commonly used, automated, cheap and easily accessible laboratory test in clinical practice. Similarly to the neutrophil-to-lymphocyte ratio, the LMR may also be used as an indicator of systemic inflammation in several diseases such as malignancy or cardiovascular disease.<sup>2</sup> However, the lymphocyte count is affected by gender, age, race, time of sampling, physical and psychological stress, pregnancy, drugs (cephalosporin, chemotherapy, steroids), tuberculosis, viral infections, smoking, presence of anti-lymphocyte autoantibodies and procedures such as splenectomy.<sup>3,4</sup> Standardization of procedures in LMR analysis is vital for reducing variations in results from different laboratories. Different methods of sample collection, processing and analysis, as well as the time of collection, instruments and types of equipment used for the complete blood count, can cause

variations in lymphocyte counts. Circadian or diurnal variation of lymphocyte levels – variation in T cell counts at different time points during the day in the same person – is another factor affecting fluctuations in lymphocyte count, which can reach up to 20%. Finally, strenuous physical activity may also be an influential factor in variations in lymphocyte count.<sup>3</sup>

In conclusion, I think that the results of LMR analysis would be more reliable if based on prospective research into technical and methodological aspects, as well as physiological and pathological conditions. It would thus be easier to understand whether there is a strong correlation between LMR and severity of calcific aortic stenosis.

### Conflicts of interest

The author has no conflicts of interest to declare.

### References

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