



Letter to the Editor

Non-cardiac Conditions Which Can Elevate The Serum Levels of sST2



Sir,

I congratulate the authors Dattagupta A and Sathyamurthy I for the lucid presentation about the very important topic, sST2 current status in the article titled 'ST2: Current status'.¹ In this article, they have mentioned that 'while ST2 is associated with allergic and immunologic diseases such as asthma, among normal subjects, sST2 was not found to be higher in them'.

We wish to add some additional information regarding the non-cardiac conditions which can elevate the serum levels of sST2. These conditions are rheumatoid arthritis, systemic lupus erythematosus (SLE), macrophage activation syndrome, juvenile idiopathic arthritis and bronchial asthma.^{2–5}

Serum sST2 levels were found to be higher in patients of rheumatoid arthritis than in the healthy subjects. The levels of IL-33, sST2 and C-reactive proteins decreased after the conventional DMARD treatment.² In the cases of SLE, serum sST2 levels were higher than healthy controls and showed the positive correlation with the disease activity (by using the SLEDAI index and serum anti-DNA antibody).³ Similarly, in the patients with macrophage activation syndrome and in juvenile idiopathic arthritis, the levels of sST2 were higher than those in healthy persons. In these cases, levels of sST2 correlated well with the activity and reduced during the phase of remission.⁴

Serum sST2 levels serve as a biomarker for the severity in bronchial asthma such as pneumonia and sepsis. It also can predict the exacerbation within 3 months. High serum sST2 levels are strongly related to the neutrophilic and not the eosinophilic inflammation in asthma. Neutrophilic asthma is the most severe phenotype of bronchial asthma.⁵

Despite the effect of these immunological and inflammatory diseases on serum sST2 levels, it stands as the best prognostic biomarker in the cases of heart failure to predict risk stratification and is even better than galectin-3. In comparison with sST2, natriuretic peptides are better cardiac biomarkers for the diagnosis of heart failure, but they get affected by age, body mass index and serum creatinine.⁶

Conflict of Interest

None declared.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.ihj.2018.11.014>.

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Response to the Editor,

We thank Patil S et al for their interest in our article.

As correctly pointed by them in their letter to editor, ST2 has been studied in the context of inflammatory and autoimmune diseases. In addition, as mentioned, there are studies showing its correlation with the severity of asthma exacerbation and other non-cardiac conditions such as systemic lupus erythematosus, rheumatoid arthritis, and so on.

The field of cardiac biomarkers is a highly dynamic field with a lot of research currently underway. In particular, ST2 has been the focus of several interesting studies that are exploring its utility and diagnostic accuracy in various disease states and providing us new data about its scope. However, in our endeavour to present a concise overview of the current status of ST2 and to keep the article from becoming very lengthy, we had to prioritize key points while leaving out a few others, and hence, this omission. Nonetheless, we sincerely thank Patil S et al for the valuable inputs regarding this additional important role of this novel biomarker.