

**The Lancet, Response to correspondence by Giacomo Cafaro et al. and Satoshi Funada et al., November 2022**

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**Authors' response:**

We agree with Dr. Cafaro that comparing different types of cardiovascular outcomes occurring in patients with systemic sclerosis to those occurring in patients with other autoimmune diseases would be of interest. However, we had relatively few participants with systemic sclerosis and even fewer cardiovascular events, precluding a meaningful analysis of individual outcomes.

Dr. Funada and colleagues also highlight potential differences in types of cardiovascular outcomes across the range of autoimmune diseases studied. Again, while we agree in principle, in practice, because we investigated 19 autoimmune diseases and 12 cardiovascular outcomes, this created 228 individual result permutations (456 when one considers adjusted and non-adjusted analyses). It was simply not practical to report all of these individual findings. However, when preparing our manuscript, we did examine individual disease associations, and did not identify major heterogeneity across the range of autoimmune diseases and cardiovascular outcomes examined. Moreover, as explained for systemic sclerosis, the smaller sample sizes and numbers of events included in any individual analysis made resultant findings less statistically robust.

The goal of our analysis was to harness the strength of the large overall cohort of patients with autoimmune diseases to demonstrate a clear and consistent association with a broad range of cardiovascular outcomes, accepting that more detail about individual diseases and specific outcomes would be welcome and hopefully will come from the future investigations of other populations.