

Reply to: More erroneous statements about the use of frequentist statistical methods in medical research

Sirs,

The communication by Boers reacts to my reply to Dr Yazici (1), who claimed that some secondary outcomes in the paper Anakinra for Colchicine-Resistant Familial Mediterranean Fever.... (2) might be type 1 error (related to the finding that anakinra suppresses FMF-joint attacks $p=0.019$) and type 2 error, (related to the finding that anakinra did not suppress the abdominal attacks $p=0.38$). At that time, I thought that one must view the null hypothesis, before suggesting type 1 or type 2 errors (because type 1 and type 2 errors rely on the null hypothesis), but I was wrong. Statistical inference always bears the possibility that the conclusion might be incorrect. The whole idea behind the p -value is to determine the level of error if the null hypothesis is correct. In this

respect, Dr. Yazici's claim is not different from a general notion that despite the significance or insignificance of the p -value, there is still room for possible inference mistake. The same concern applies for any new drug or device tested for performance, founding its effectiveness based on the p -value obtained from the test, and submitted for regulatory approval. I do not see any reason to discuss this matter specifically for the anakinra paper.

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1. LIVNEH A, HARARI G, BEN-ZVI I: Reply. *Arthritis Rheumatol* 2017; 69: 1914.
2. BEN-ZVI I, KUKUY O, GIAT E *et al.*: Anakinra for colchicine-resistant familial mediterranean fever: a randomized, double-blind, placebo-controlled trial. *Arthritis Rheumatol* 2017; 69: 854-62.