

# Review of: "Cryptic evidence on underreporting of mRNA vaccine-induced cardiomyositis in the elderly: a need to modify antihypertensive therapy"

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Potential competing interests: No potential competing interests to declare.

Dear Editor,

I have read with extreme interest the paper by Dr Forsdyke "Cryptic evidence of underreporting of mRNA vaccine-induced cardiomyositis in the elderly: a need to modify antihypertensive therapy". The subject of this study is within the frame of mRNA-based anti-COVID-19 vaccines and in particular refers to the cardiomyositis in the elderly. Many reports have witnessed such events in the young or in people in their active life mainly if undergoing systematic physical activity. In this case report, the patient is a cardiologist, an experienced runner, a scientist and an elderly who underwent two booster doses (4<sup>th</sup> and 5<sup>th</sup>) for anti-COVID-19. After these two latter events he experienced systemic immune response deduced from local pain: a) teeth in the case of the 4<sup>th</sup> dose and b) chest-pain during jogging after the 5<sup>th</sup> dose. Of note, he took readings of blood pressure values twice a day (8:00 AM and 8:00 PM roughly) as a part of a study protocol for systolic and diastolic pressure drug adjustments with Losartan and subsequently Candesartan. It should be reminded that, approved vaccines in Europe increase the endogenous synthesis of SARS-CoV-2 Spike proteins from a variety of cells. Once synthesized in the cells reached by the vaccine, the Spike proteins first assemble in the cytoplasm and then migrate to the cell surface to protrude with a native-like conformation. Spike proteins are recognized by the immune system which rapidly develops an immune response. Furthermore, the Spike proteins assembled in the cells which are eventually destroyed by the immune response circulate in the blood as free-floating forms. Free-floating Spike proteins may interact with angiotensin-converting enzyme 2 (ACE2) receptors. The consequent loss of ACE2 receptor activity leads to a rapid drop in the generation of angiotensin1,7 resulting from inactivation of angiotensin II. The imbalance between angiotensin II (overactivity) and of angiotensin1,7 (deficiency) might play a role in the genesis of acute elevation in blood pressure.

Interestingly, both drugs taken by the patient/author are targeting the same SARS-CoV-2 receptors (ACE2) on cardiac cells and -correctly- the author suggests drug adjustments in those elderly undergoing BP assessment and taking mRNA vaccines either in short and long terms after vaccination in order to avoid BP spikes due to local immune response and baroreceptors unbalance.

Additionally, the author could also have suggested therapies to mitigate the inflammatory response that, in several individuals with functional B-cells defects or carrying specific polymorphisms in the several cytokines genes (IL-6, TNF- $\alpha$  etc) are now in the first line treatments.

The overall merit is to bring the attention on several population categories (elderly) and their complications that are less discussed when talking about mass vaccination with mRNA vaccines.