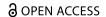
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LETTER





Questionable robustness in the findings of a meta-analysis

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ABSTRACT

Marchand and colleagues conducted a meta-analysis examining COVID vaccine effects on all-cause and cardiac-related mortality. Findings aligned with previous research, showing no association with all-cause mortality. However, cardiac-related mortality exhibited a 6% increase postvaccination. Concerns arise from reliance on a non-peer-reviewed study (Ladapo, 2022) influencing results significantly. Sensitivity analyses were lacking, undermining result robustness, particularly in gender-specific outcomes. Adherence to PRISMA guidelines for transparency and thoroughness could strengthen conclusions. This study underscores vaccine safety scrutiny, yet the influence of biased sources and absence of sensitivity testing warrant careful consideration.

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Meta-analysis; all-cause mortality; cardiac-related mortality; COVID vaccines; COVID-19

Marchand and colleagues¹ have recently conducted a metaanalysis examining the relationship between COVID vaccines and all-cause mortality as well as cardiac-related mortality. This work holds significant importance, given the substantial concerns surrounding the safety of these novel vaccines. Notably, this study stands as one of the few meta-analyses delving into these specific variables. The primary findings of the study indicate that there exists no association between COVID vaccines and all-cause mortality. These findings are consistent with other published studies.^{2–8} However, the authors report that the vaccines were associated with a 6% increase in heart-related mortality. Nonetheless, these results do not appear to be robust:

First and foremost, according to the data presented in Figure 3 of the study, the entire vaccine effect on mortality appears to stem from the non-peer-reviewed Florida study, which seems to carry an extraordinarily large weight (92%). In a recent investigation, preliminary versions of this work have surfaced, revealing that sensitivity analyses indicating the vaccine's risk as non-robust were removed. 10 Following these sensitivity analyses, the impact of the vaccine was not statistically significant.

Secondly, the authors of the meta-analysis concluded that they observed a statistically significant increase in cardiacrelated deaths, especially among males. However, the authors did not conduct a sensitivity analysis to evaluate the robustness of their results concerning the inclusion or exclusion of specific studies, such as the Florida study, which could have potentially impacted their findings. It is worth noting that the PRISMA guidelines also include a discussion about the sensitivity analyses¹¹

In summary, the work by Marchand and colleagues holds great significance as it delves into a crucial area concerning vaccine safety. However, the inclusion of a highly biased and non-peer-reviewed study, seemingly deliberately altered to demonstrate an increase in COVID vaccine-related effects, appears to distort the meta-analysis results.

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Author contributions statement

Borja Somovilla del saz was solely responsible for all aspects of this letter.

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