Letter to the Editor

A Critical Appraisal of a Recently Published Systematic Review

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To the Editor,

I read with interest the published article titled "Reduced left ventricular global longitudinal strain in the coronary slow flow phenomenon: a systematic review and meta-analysis" in the latest issue of the journal *Research in Heart Yield and Translational Medicine*, authored by Seifi et al.[1] The authors conducted a systematic review and meta-analysis of studies reporting left ventricular global strain in patients with the coronary slow flow phenomenon. I identified several shortcomings in this manuscript, primarily related to the study design and data analysis, which undermine its clarity, reliability, and reproducibility.

1. Although the PRISMA guidelines were updated in 2020, the authors drew upon an older version.[2]

2. The keywords chosen for the search were not clearly and completely pointed in text or in supplements. Some researchers may use terms such as "automated functional imaging" instead of "speckle-tracking echocardiography" or may use "systolic strain" or "end-systolic strain" instead of "global longitudinal strain." Moreover, the authors failed to specify the exact date of the search or list the number of articles retrieved from each database.

3. Although the authors claimed to include only articles measuring left ventricular global longitudinal strain by speckle-tracking echocardiography, I found that the study by Nurkalem et al[3] (2009), which employed color-coded tissue Doppler imaging to assess left ventricular strain, was included. This inclusion could impact the results.

4. Some relevant manuscripts, such as those by Wu et al[4] (2022) and Wang et al[5] (2016), were not considered. Wang et al[5] (2016) evaluated both left and right atrial phasic function and assessed the global longitudinal strain of the left ventricle. Although the authors stated they considered related review articles in the field for identifying relevant studies, these omissions suggest otherwise.[6] Missing articles like these could influence the findings.

5. The article screening procedures were not detailed. It was unclear who was involved in the screening process. The abbreviation of the authors' names involved in screening was not provided, and it is unclear whether 2 groups of authors were responsible.

6. The eligibility criteria and process were not described. The query, therefore, remains as to who performed this step. The reasons for excluding studies should be included in a supplementary file.

7. The data extraction process was not clearly outlined. For instance, Narimani et al[7] (2016) used Samsung Medison software to measure global longitudinal strain, yet the authors stated they used GE software. In addition, Kemaloğlu et al[8] (2017) only measured global longitudinal strain in 3D speckle-tracking echocardiography, but the authors in Table 3 presented that they measured global longitudinal

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strain in 3D and 2D speckle-tracking echocardiography and presented values for them. Unfortunately, the authors failed to point to the final results of Table 3 in the body of their manuscript; as a result, I cannot be sure whether the results of the study by Kemaloğlu et al[8] (2017) were considered in the 2D speckle-tracking echocardiography section.

8. The process for assessing the quality of included studies was not explicitly detailed. It was unclear who performed the assessment or how it was conducted, nor was there any discussion of how study quality might influence the meta-analysis results.

9. Although the authors evaluated heterogeneity among studies, they did not assess inconsistency.

10. Despite identifying heterogeneity, the authors did not perform meta-regression to explore sources of variability or discuss this further.

11. The authors visually assessed publication bias using a funnel plot but did not perform statistical tests such as the Egger test or Begg test, which would have strengthened their analysis.

12. The study years recorded in figures were inconsistent with the reference list. Additionally, the article by Abdelsamei et al (2020) was not cited in the references. It is noteworthy that this particular article is not indexed in PubMed, Scopus, or Embase, despite the authors limiting their search to these databases. In contrast to the text, they indicated in Figure 1 that they used Google Scholar for the search, whereas several studies in Google Scholar were not considered.

13. Readers expect that scientific manuscripts are written by authors with scientific knowledge and practical experience in a specific field. This is a crucial expectation for readers.

In summary, these issues undermine the reliability of this systematic review, significantly limiting its contribution to the scientific literature.

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