

Reviewer #1:

This work aims to investigate the impact of *Streptococcus pyogenes* infection in susceptibility to psoriasis. This topic is interesting and may provide a potential therapeutic target to psoriasis. However, there are some critical questions need to be improved as following:

1. The manuscript requires English revision, preferably by a native speaker.

Response: Dear reviewer, the corresponding author of the manuscript declared that the authors of the present manuscript are non-native English speakers but our manuscript has been reviewed for clarify by a colleague whose native language is English.

2. In order to follow the PRISMA stablished protocols, the authors should include the PRISM checklist as well as part of Supplementary material, this in order to perform a detailed description for methods and results. E.g it is not clearly stablished what was the data collection process in order to extract information from each study (methods sections).

Response: Dear reviewer, we have provided the PRISMA checklist as supplementary file of the manuscript; Also, the methods section was revised to be more informative.

3. all the studies included are about 10 years before, recent studies should be included.

Response: Thanks for your suggestion, we are performed a new computer-assisted comprehensive literature search to obtain recent relevant studies by three independent authors, however, there is no additional documents to include in this study.

4. Authors should introduce this study briefly in the Introduction part instead of just presenting other people's research.

Response: Dear reviewer, it is discussed in the last paragraph of the introduction to cover your idea.

5. Authors should add the website of the four databases in the Method part.

Response: Dear reviewer, thanks it has been suggested.

Reviewer #2:

- Specific Comments to Authors: Dear Authors I commend your efforts to analyses this angle of infection altering the microbiome to be a risk factor for psoriasis. Although various entities have been established as being a risk factor for psoriasis, considering the higher prevalence of *Strep pyogenes* infection to be a risk factor and the causality could not be established considering the quality of the studies and the heterogeneity involved in them. Moreover, the authors have not probed in to the reason for the heterogeneity and did not tend to analyses the reason for the publication bias in the studies included.

Response: Dear reviewer, there is different in design of the included studies and it can be cause potential source of heterogeneity, due to lack of access to raw data, we are not able to perform the subgroup analysis or sensitivity analysis. We are apologizing, however, this concerning issue had been suggested in the limitation of the study.

- The methodology needs more transparency in term of providing the complete search strategy for at least one of the databases utilized for literature search and it is always better to involve a minimum of 4 databases when the number of search results out of all the included databases were minimal.

Response: In the Method section, we employed various essential standard criteria for meta-analysis including: search in addressed global databases, use of keywords based on MeSH term, inclusion criteria, excluded criteria, as well as statistical softwares.

- The authors still have not given the reasons for the exclusion of the articles considered for full text screening.

Response: thanks, our exclusion criteria for full-text articles were 1) unclear materials or results, 2) Repetitive samples, it has been suggested.

- The risk of bias assessment table is not provided in the submitted manuscript.

Response: We are apologizing for the mistake; it is revised in the Table 1.

- The authors failed to included certain key research articles on the domain of assessment in the discussion part of the manuscript such as <https://jmg.bmj.com/content/39/10/767>
<https://www.longdom.org/open-access/psoriasis-a-sequela-of-streptococcal-infection-similar-to->

acute-rheumaticfever-2327-5073-1000244.pdf

<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1440-0960.1996.tb01087.x> A strong discussion to validate the hypothesis with the results achieved out of the study is needed to give a reasonable weightage to the hypothesis being presented to be accepted and to prove its rationality behind.

Response: Thanks, three citations has been added within the discussion.