

Peer Review

Review of: "Investigating the Role of Vitamin D in the Prevention and Control of Dengue Virus Vectors and Related Diseases: A Systematic Review"

Altat Abdulkhaliq¹

1. Faculty of Medicine, Clinical Biochemistry, Umm Al-Qura University, Saudi Arabia

The current study entitled "Investigating the Role of Vitamin D in the Prevention and Control of Dengue Virus Vectors and Related Diseases: A Systematic Review," has significant implications for clinical practice. The findings suggest that Vitamin D3 can play a crucial role in controlling dengue fever by reducing viral load and the severity of the disease in patients. This is achieved through the inhibition of the inflammatory response and the enhancement of the immune response.

Overall rating

4/5

Clarity

4/5

Novelty

3/5

Impact

4/5

Title:

It would be more proper to change the title of the study to:

"Investigating the Role of Vitamin D in the Prevention and Control of Dengue fever and Related Diseases: A Systematic Review,"

Abstract:

It would be more appropriate to refer in the abstract to the role of vitamin D in modulating immune responses and reducing viral load as a hypothesis to investigate the aim.

Introduction:

The introduction states that infection by the dengue virus is common in tropical and sub-tropical regions; however, the burden of this infection would be more effectively shown in numerical data such as determining the “prevalence of the disease.”

In addition, although the introduction tries to explain the significance of dengue fever and the potential role of vitamin D in its prevention and control, it would be more scientifically appropriate to elaborate in detail on the various mechanisms of the immunomodulatory role of vitamin D on innate and adaptive immunity during viral infections.

This is because, in the results section of the manuscript as well as in the discussion section, there are references to numbers of signal molecules and genes for the first time without being defined or explained in the introduction section. Examples of these issues include page 6 (*TLR, RIG, SOCS-1, INF, PKR, OAS, and miR-155-5p, miR-130a-3p, miR-182-5p, and miR-125b-5p*), and pages 7 and 8 (*I κ B α , LL-37, Peg- α -2b/ribavirin and Peg/RBV, CYP27B1, IL-2, 17, 6*).

Therefore, the introduction section should elaborate coherently and cohesively on the mechanism that integrates or relates the previous molecular proteins or genes together during the immunomodulatory effects of vitamin D.

Lastly, the abbreviation of all scientific names should be defined for the first time, and as an option, the author may wish to include an abbreviation page.

Material & Methods:

The systematic review method is well-constructed and detailed, including the search strategy, inclusion and exclusion criteria, and quality assessment. This enhances the credibility of the findings.

Results:

The results section is well-organized, with a clear presentation of the findings from the studies included. The use of tables to summarize the characteristics of the studies is particularly effective. However, as has been mentioned previously, the scientific names of several molecules and genes that

are involved in the immunomodulatory mechanism of vitamin D are reported for the first time, although they should be referred to earlier in the introduction.

Discussion:

There are wide areas for improvement in this section, which include the following:

1. **Clearer Arguments in the Discussion:** While the discussion section provides a good summary of the findings, it could benefit from clearer arguments relating the results to the broader context of dengue prevention and control. For instance, the author could elaborate more on how the findings support or contradict existing theories or practices.
2. **Additional Experiments or Data:** The conclusion mentions the need for more studies. It would be helpful to specify what kind of additional experiments or data would strengthen the research. For example, the author may wish to suggest longitudinal comprehensive studies to assess the long-term effects of vitamin D supplementation on dengue fever severity.
3. **Highlighting Limitations and Recommendations:** At the end of the discussion section, it would be more supportive of the aim of the study to indicate clearly its limitations that were reported during the collection of data and accordingly construct recommendations in the conclusion section to be considered for further work on this topic.

Declarations

Potential competing interests: No potential competing interests to declare.