Peer Review Report

Review Report on An analysis of epidemiological characteristics of microvascular complications and comorbidities among type 1 diabetes patients

Original Research, Acta Biochim. Pol.

Reviewer: Justyna Klusek
Submitted on: 10 Apr 2025
Article DOI: 10.3389/abp.2025.14569

EVALUATION

Q 1 **Please summarize the main findings of the study.**

The objective outlined in the introduction clearly indicates a focus on the analysis of complications rather than type 1 diabetes itself. The Results section also focuses on complications. That is why, first of all, I would suggest revising the title to: "An analysis of epidemiological characteristics of microvascular complications and comorbidities among type 1 diabetes patients." This study investigated the epidemiological characteristics and co-occurrence of selected microvascular and autoimmune complications in patients with type 1 diabetes. Using clinical data from 306 patients, the analysis focused on the prevalence and predictors of hypertension, retinopathy, neuropathy, and Hashimoto's disease. The results confirmed known risk factors, such as diabetes duration and age, and revealed that most patients did not present with coexisting complications.

Q 2 **Please highlight the limitations and strengths.**

Strengths: While the study largely confirms previously established associations—such as the influence of diabetes duration and age on the risk of complications—it remains valuable in its methodological approach and scope. In particular, the combined analysis of autoimmune and microvascular complications, together with the use of k-means clustering to explore patterns of co-occurrence, adds a novel perspective that has been less frequently addressed in earlier research.

Limitations: Its retrospective, cross-sectional design limits the ability to infer causality — the findings reflect associations rather than directional relationships. Additionally, important factors such as physical activity, dietary habits, and diabetes education were not assessed, although they may also influence the risk of complications.

Q 3 **Please comment on the methods, results and data interpretation. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.**

The methods, results, and data interpretation are appropriate, and the findings support the conclusions. However, the discussion is overly detailed, with repeated data already presented in the results section, which may hinder the clarity and flow of the argument.

Check List

Q 4 **Please provide your detailed review report to the editor and authors (including any comments on the Q4 Check List)**

No answer given.

Q 5 **Is the English language of sufficient quality?**

Yes.

Q 6 Is the quality of the figures and tables satisfactory?

Yes.

Q 7 Does the reference list cover the relevant literature adequately and in an unbiased manner?

Yes.

Q 8 Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)

Yes.

Q 9 Are the methods sufficiently documented to allow replication studies?

Yes.

Q 10 Are the data underlying the study available in either the article, supplement, or deposited in a repository? (Sequence/expression data, protein/molecule characterizations, annotations, and taxonomy data are required to be deposited in public repositories prior to publication)

Not Applicable.

Q 11 Does the study adhere to ethical standards including ethics committee approval and consent procedure?

Yes.

Q 12 Have standard biosecurity and institutional safety procedures been adhered to?

Yes.

QUALITY ASSESSMENT

Q 13 Originality

Q 14 Rigor

Q 15 Significance to the field

Q 16	Interest to general audience	
Q 17	Quality of the writing	
Q 18	Overall quality of the study