

Peer Review

Review of: "Echocardiographic Changes in Prevalent Hemodialysis Population Based on Cardiac Symptomatology"

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Major Concerns

1. Sample Size and Statistical Power

The study includes only 79 participants, with a particularly small asymptomatic subgroup (n=18). This substantially limits:

Statistical power for survival analyses

Multivariable modeling

Subgroup analyses of remodeling patterns

The non-significant survival difference between groups may reflect underpowering rather than an absence of effect.

2. Grouping Based Solely on NYHA Classification

The New York Heart Association Functional Classification is subjective and may poorly discriminate cardiac from non-cardiac symptom sources in HD patients. Reliance on this classification may introduce misclassification bias. Incorporation of validated functional or quality-of-life instruments could improve symptom stratification.

3. Limited Multivariate Adjustment

Several variables differed significantly between groups (hydration, hemoglobin, urate, lean tissue index, miRNA-133). However, the analysis does not sufficiently evaluate independent predictors using

multivariable regression. Without adjustment, causal interpretation remains limited.

4. Interpretation of miRNA-133

The discussion of miRNA-133 as a potential biomarker is interesting but somewhat speculative. The manuscript does not establish:

Direct correlation between miRNA-133 levels and echocardiographic remodeling severity

Prognostic value for outcomes

Mechanistic relevance in HD-related cardiomyopathy

More cautious interpretation is recommended.

5. COVID-19 Confounding

Infection, predominantly COVID-19, accounted for the majority of deaths. While appropriately acknowledged, this factor substantially limits interpretation of cardiovascular outcome findings.

Declarations

Potential competing interests: No potential competing interests to declare.