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

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Potential competing interests: No potential competing interests to declare.

According to the authors, the aim of the study was to investigate the echocardiographic changes in prevalent HD patients. Unfortunately, this is not science - the study simply remained at the level of data collection coupled with p-hacking and therefore does not advance our knowledge on the subject.

The authors grouped their patients based on NYHA classification, which is an inadequate choice, given the lack of objectivity and steadiness of this classification - the researchers have to rely on what the patients declare, and the same patient might migrate from one NYHA class to another depending on various other conditions that might influence exertion capacity (respiratory conditions, including intercurrent ones, anemia, body iron level, psycho-emotional state, etc.) - indeed, the authors found a statistically significant difference in terms of hemoglobin level between the two groups, but no difference regarding cardiac (i.e., echocardiographic) parameters, including EF (even worse: cardiac dysfunction was more prevalent among group 1 - see Table 3). Therefore, the difference in exercise ability of the two groups is due to anemia, and not to cardiac dysfunction.

Although multiple comparisons have been performed, the authors have employed no strategy for dealing with the multiple comparisons problem - consequently, the results of the study are only an exercise in p-hacking: perform enough comparisons, and something will always pop up.

The unscientific character of the article is even more evident in the Discussion section:

- the authors assert "With regard to NYHA functional testing, 22.8% of the prevalent HD patients did not have any cardiac problems." - so what? This result has no meaning as long as it is not compared with a reference/control sample of patients/individuals.

- then the authors assert "LVH prevalence was insignificantly lower in asymptomatic patients (55.5%) compared to those with symptoms (59%)." - if this difference was not statistically significant, it is not warranted to declare it.

- afterwards, the authors allege that "HFpEF was significantly higher in asymptomatic patients (61%) versus symptomatic patients (34.4%)" - but it was not, as revealed by Table 3.

The article should be rejected.