Reviewer's report

Title: Acute elevations in serum creatinine in primary care engender similar mortality risk to acute kidney injury in hospital

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Reviewer: Nicholas Selby

Reviewer's report:

Thank you for asking me to review the manuscript ‘Acute elevations in serum creatinine in primary care engender similar mortality risk to acute kidney injury in hospital’. This is an important area and the authors are correct in their assertion that it is also a poorly studied one. It is highly relevant to attempt to determine the implications of applying AKI diagnostic criteria to a stable, outpatient population, obviously different from the acutely unwell hospitalised patients in which they have been so well studied. I have the following comments:

Major:

• It is essential that the authors report the time between the baseline creatinine and measured creatinine used to determine presence of AKI. As well a presenting mean/median data, they should include a frequency chart or histogram to show the proportion of patients in periods of time lapsed (e.g. 0-48hrs, 2-7 days, 8-28 days, 1-3 months, 3-6 months, >12 months). Without this, it is impossible to determine whether the authors are describing AKI or CKD, both of which can negatively impact outcome. In contrast to acutely unwell hospitalised patients in whom it is reasonable to suppose that an elevated creatinine (even with a gap between baseline and measured creatinine) is an acute change, the same cannot be said for a stable outpatient population.

• How many of the AKI stage 1 group were categorised only because of a rise in creatinine of 27micromol (with <50% rise), as the numbers of AKI stage 1 hugely outweigh the numbers in stage 2 and 3? It would also be important to know whether the associations with poor outcome held true for both groups within AKI stage 1 (ie those with >50% rise versus those categorised with only 27micromol rise).

• The authors have explained their decision to exclude patients with a rise in creatinine who also had a hospital admission during the study period. I understand that this group need to be analysed separately; however I would suggest that this group should be added to the manuscript and contrasts between the groups would be informative. Previously describing these data in a review article would not necessarily preclude their inclusion here. It is also misleading to discuss population based incidences when excluding certain subpopulations of AKI.
Minor:

• Please include the method used to measure serum creatinine (Jaffe or enzymatic) as this may have a bearing on precision of describing such small changes in serum creatinine

• The title is misleading and should be changed. There is no comparison with hospitalised patients; the title should reflect the study that has actually been performed.


Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

'I declare that I have no competing interests'