Reviewer's report

Title: Current ICD10 codes are insufficient to clearly distinguish acute myocardial infarction type: a descriptive study

Version: 1 Date: 27 March 2013

Reviewer: Amy Metcalfe

Reviewer's report:

Major compulsory revisions

• While the objective of the manuscript is important, the data used for this study does not seem sufficient to answer the stated research objective. Assessing trends in angioplasty and in 4-digit ICD-10 codes is insufficient to determine trends in STEMI vs. N-STEMI, as even though most N-STEMI patients will not receive PCI, higher risk patients might; and not all STEMI patients receive angioplasty.

• There is a disconnect between the results and the conclusion. While it is clear that it is difficult to differentiate STEMI and N-STEMI AMI based on ICD-10 codes alone, the rationale for selecting specific codes as STEMI is not clearly supported by the data (and contradicts another statement used by the authors in the discussion (p6, last line of second paragraph in discussion section).

Minor essential revisions

Overall

• Throughout the manuscript, the decimal place should be included as part of the ICD codes (i.e. I21.0 not I210)

Background

• The background section should be expanded, particularly in relation to:
  o The definition of STEMI vs. N-STEMI. More information is needed on what clinical parameters distinguish these subtypes of AMI and the treatment differences (particularly with regards to angioplasty).
  o The incidence of STEMI and N-STEMI AMI subtypes
  o What proportion of STEMI and N-STEMI patients typically receive angioplasty

• I would suggest replacing the statement “We will discuss how this [ICD-10-CM] fits with our findings within the conclusions” be rephrased as “However, ICD-10-CM is not currently in use in all countries and retrospective studies that include data prior to 2013 will still need to differentiate STEMI and N-STEMI AMI subtypes using the original ICD-10 coding framework.”

Methods

• A description of the angioplasty procedure codes should be included in Table 1
Discussion

- Results comparing the HES and MINAP data should be moved to the results section
- The discussion should be expanded to include comments on misclassification bias and how the lack of a gold standard with individual level data prevented a true validation of ICD-10 codes to differentiate STEMI vs N-STEMI

**Level of interest:** An article whose findings are important to those with closely related research interests

**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