Reviewer's report

Title: Cardiac medication prescribing and adherence after acute myocardial infarction in Chinese and South Asian Canadian patients

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Reviewer: Jack Tu

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This retrospective cohort study compares prescribing and adherence to ACE-inhibitors, beta blockers, and statins following discharge for an AMI among elderly Chinese (n=258), South Asian (n=511), and non-Asian patients (n=9,157) in British Columbia. Medication adherence was assessed using a measure of the ‘proportion of days covered’ (PDC), with a PDC of >0.80 indicating optimal adherence. Ethnicity was identified using validated surname algorithms.

Adherence rates were measured for patients discharged during the period April 1, 1994 to January 1, 2002, while prescribing rates were measured for patients who were discharged between April 1, 1999 and January 1, 2002. Only patients who survived at least 1 year and 3 months after the hospital admission were included.

Chinese patients were more likely to be prescribed beta blockers and South Asian patients were more likely to be prescribed statins compared to non-Asian patients. Both Chinese and South Asian patients were less adherent to ACE-inhibitors compared to Non-Asian patients, while South-Asian patients were more adherent to beta blockers.

Comments

This study addresses an important and relevant topic. Understanding disparities in prescribing rates and adherence to cardiac medications among different ethnicities may lead to the identification of specific risk factors for this behaviour and the development of culturally-tailored interventions to improve adherence.

This study makes use of surname algorithms (one of which was developed by a co-author on this study) to identify patient ethnicity which is an imperfect method of identifying ethnicity that may result in misclassification of subjects.

It was observed that both Chinese and South Asian patients were less likely to be adherent to ACEI therapy relative to non-Asian patients. This finding may result in more aggressive monitoring and increased support to optimize adherence among these patients.

Major Compulsory Revisions

The design of this study is confusing. The authors state that since prescribing patterns change over time the data collection period was restricted to April 1st 1999 to March 31st, 2003. However, adherence is measured over the time period
of April 1st 1994 to March 31, 2003. It is not clear why the adherence cohort wasn’t restricted to the same time frame as the prescribing cohort. Was this to ensure an adequate sample size to measure adherence?

A 25% non filling rate seems extremely high. Could it be more a problem that the patients were getting their medications but it is not being captured in these databases. (?private pay).

Over 8 years have elapsed since the end of this study period (March 31, 2003). Substantial changes to prescribing practices may have occurred since then. The results for the prescribing rates and adherence of ACE inhibitors may be especially impacted, as ARBs have become more widely used since this study period, and are often prescribed to patients who experience negative side effects from ACEIs. This should be addressed in the limitations.

The authors do not have access to more detailed clinical information on these patients (e.g lv function, creatinine, cholesterol levels, etc.) which could explain some of the ethnic differences observed. This should also be discussed in the limitations.

The sample size of Chinese and South Asian patients is pretty small.

The patient characteristics (Table 1) are stratified by ethnicity and adherence to ACEIs, BBs, or statins combined (sub-optimal vs optimal). It would have been useful to see the characteristics stratified by ethnicity alone in order to clearly examine how demographic and clinical factors vary among the three different groups of AMI patients overall.

In Table 2, it would be informative to see how many patients filled a prescription for either an ACEI, BB or Statin.

Is it possible to supplement this study with clinical outcomes. Did patients who were adherent have improved mortality. Did mortality differ between ethnic groups?

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

no