Reviewer's report

Title: Stroke Characteristics, Care, and Mortality in a Hospital Stroke Registry in Viet Nam

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Reviewer: Károly Orbán-Kis

Reviewer's report:

The authors of the article present comprehensive data from a cohort study from Viet Nam’s Da Nang province. As of August 2012 there is a lack of reliable prospective data from the region, as such the study was necessary; also the authors’ quest for data is well defined. The implementation of the stroke registry and the methods used are generally appropriate for the assessment of the questions raised by the study. The collected data is sound and the statistical approach is excellent. The discussion is comprehensive and the conclusions are generally well supported by the presented data. The limitations of the study are generally well established except for one important detail (see below). The writing is generally good/excellent with a few exceptions (see below). There are a few issues to be considered, mainly regarding the method and discussion also some regarding the writing and presentation of the article.

Major Compulsory Revisions:

1. Although the authors discuss in detail the reasoning behind the admittance of patients to either ICU or the Cardiology unit, there is no data presented regarding the personnel, who cared and treated these patients (on page 2 we are only told that: “physicians and nurses from the ICU, cardiology ward and general internal medicine ward were trained…”). Were there neurologists? Were they stroke specialists? The strength of a stroke unit is given not only by the proper ICU care but on the training and expertise of the neurology staff, as the stroke patient presents many specific diagnostic and treatment challenges that may not be overcome by cardiologists and intensive care unit specialists. Furthermore, although the authors establish (page 1-2) that the diagnosis was made based on WHO criteria there is no mentioning about who made the diagnosis. The neurologist or other personnel with the help of the neuroradiologist? These are important questions to assess as the high percentage of fatality may also be explained by the lack of proper neurological care.

2. The authors explain the cultural significance behind the huge number of patients that were allowed to go home to die. However this issue is very important and complicates the interpretation of the data regarding fatality. There are more and more data suggesting that the withdrawal of medical support and other early care limitations, such as DNR orders within the first day of hospitalization are independent outcome predictors (i.e. many patients that die from ICH do so during the initial acute hospitalization, and these deaths usually occur in the setting of withdrawal of support due to presumed poor prognosis).
In this context, proper, aggressive neurological care and guideline-concordant therapy is needed for all ICH patients who do not have advanced directives specifying that this should not be undertaken. Also in order to properly assess the potential outcome of a stroke patient a trained and experienced neurologist is needed (See also current AHA-ASA guideline).

In conclusion of points 1-2 of my review, references must be made about the specialty of the staff that made the diagnosis and cared and treated the stroke patients and if they were not neurologists than the possible impact on the mortality must be discussed.

Minor Essential Revisions

3. There are several typographical errors (for example on page 17 Table 3 caption reads “...28-day morality”, should be mortality), article must have a final spelling check before final acceptance.

4. On page 15 (Table 1) there are several items marked with “+”, but we are not told what it means (is it the same as the “+” in Table 2?).

5. On page 17 in the header of Table 3 the columns are presented as % (that died or are alive), which is not correct: the last line on page 17 presents the mean systolic arterial pressure in mmHg (presents the mean arterial pressure in the case of dead and alive patients and not a percentage). The “%” has to be removed from the column header; the assignment of the unit of measurement must be made at the level of the rows of the table.

Discretionary Revisions

6. Because of the high number of hemorrhagic stroke cases all possible (even unlikely) risk factors should be assessed. For instance, according to latest stroke guidelines alcohol consumption is a potential modifiable risk factor (although less well documented) and a linear association exists between alcohol consumption and risk of hemorrhagic stroke.

See also for example:

1. Ariesen MJ, Claus SP, Rinkel GJ, Algra A. Risk factors for intracerebral


In the view of this data authors at least should explain the reasons why they choose not to collect (or not use) data (including alcohol consumption) regarding other risk factors that may influence the incidence of hemorrhagic stroke (logistical, financial, statistical, local-regional habits, etc reasoning).

7. Cigarette smoking indeed increases the risk of ischemic stroke and SAH, the data on ICH being considered at the moment inconclusive. However, except for well-developed high income countries (where data suggests an overall high validity of smoking selfreports, with average sensitivity and specificity estimates typically approaching 90%), estimates based on self-report, particularly if smoking is considered an undesirable behavior is subject to reporting bias.

See also for example:


Authors should describe in the “Methods” section the method of collecting data regarding smoking (was it self-estimate, etc) and if the method was self-estimated than the procedures undertaken to reduce reporting bias. Based on the data presented probably multiple methods were used as smoking status is missing only in 16 cases – page 7, whereas the percentage of patients with disturbed consciousness and speech disturbance is very high – Table 1, but this should be written down.

8. Also authors should explain why there is no physical activity assessment and BMI.

9. The reported number of patients with ICH is very high even among relative young (31-53 years). The authors should present data and/or discuss whether attempts were made (if possible, if not why?) in order to evaluate for underlying structural lesions (vascular malformations, tumors).

Level of interest: An article of importance 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.