Author’s response to reviews

Title: Ischemic stroke in Morocco: A systematic review

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Author’s response to reviews:

Submission of revisions requested by reviewers of the article « Ischemic stroke in Morocco: Systematic review » in your BMC Neurology

I would like to thank you for your interest in reviewing this systematic literature review.

Reviewer 1: Brehima Diakite, MD, PhD

1. Line 9. Delete &lt;&lt; address &gt;&gt; : I deleted the title "Address", at the level of line 9 on page 1

2. Align the address numbers vertically by including the postal code: It’s done, I aligned the address numbers vertically by including the postal code.

3. Abstract contains references, it is to resume (do not quote references in the abstract): It’s done, I deleted the references that appear in the abstract of the article.

4. No abbreviation in abstract, Justify the text in all manuscript: It’s done

   - I deleted all the abbreviations in the abstract

   - For the justification of the text in the article, among the instructions to authors given by the journal BMC neurology is to adopt an unjustified style of the text in the entirety of the article.
5. The analyses and interpretation of the results are confused with the numerical references in crochet; it will be desirable to put the name of the authors quoted: Indeed, this is a relevant remark, but the use of this style of presentation of bibliographic references (the numerical references in crochet), is one of the requirements of the BMC Neurology Journal.

6. Put the tests in statistical analysis with all variables: It’s done

For the statistical tests of each variable, I would like to inform you (as mentioned within the limits mentioned in the studies included in this systematic review) that the majority of the studies have only attempted to describe the distribution of the different variables in a descriptive way without the use of statistical tests. Except, I have added statistical tests for some variables included in the Case-control studies (Risk Factors and Genetic Factors). In this sense, I am sending you to tables 2.1 and 2.2 in relation to risk factors, and also to table 3 in relation to genetic factors.

7. Page 6 (Line 4-34): It is confusing; the authors must remarke this part: It is a part that aims to present in a synthetic way the different characteristics of the studies (e.g. the nature of the paper, the location, type of the study, the age group concerned by the study). In addition, I have tried to present the results of the concordance test of the methodological evaluation of the studies conducted by two reviewers (Kappa Test), and also the results of the methodological evaluation of the studies. This part is considered necessary before starting the presentation of the review results.

8. They must harmonize the number of digits after the commas in manuscript: It’s done, I tried to harmonize the number of digits after the commas of all the results mentioned in the manuscript.

9. Redimentionnee Table 2: For Table 2, I tried to split it into two tables. The first table summarizes the main associated comorbidities (hypertension, dyslipidemia, diabetes and heart disease...). The second table relates to toxic habits, contraceptive drug use and other risk factors (obesity and migraine).

10. Table 1: Authors' names are Bold. Why?: The names of the authors are in bold, only for visibility reasons. In this sense, I have removed the bold character from the authors' names (Table 1).

11. The legends in Table 2 do not match the content: All the elements of the legend are shown in Table 2 (2.1 and 2.2). In this sense, I have added other elements related to statistical tests...

12. To review discussions: It’s done


16. Page 17 (Line 6-9): What's "and this goes in line with the results"? To be rephrased: It's done.

17. Page 18 (Line 14): This is &lt;&lt; stroke &gt;&gt; in &lt;&lt; strokes &gt;&gt;: It’s done. I mentioned "stroke" instead of "Strokes".

18. Page 18 (Line 24): Space between &lt;&lt; that &gt;&gt; and &lt;&lt; 42% &gt;&gt;: This is &lt;&lt; 30-39 &gt;&gt; instead of &lt;&lt; 30 -39 &gt;&gt;.

I deleted the space between "that and 42%" and also put &lt;&lt; 30-39 &gt;&gt; instead of &lt;&lt; 30 -39 &gt;&gt;.

19. Page 19 (Line 4), This is G894T eNOS polymorphism of eNOS or G894T polymorphism of eNOS gene instead of eNOS G894T polymorphism: I put the G894T polymorphism of the eNOS gene instead of the G894T eNOS polymorphism.

20. Page 19 (Line 18-34): To be reworded &lt;&lt; As for the etiological TOAST classification..........or poor glycemic control. &gt;&gt;: It’s done.

21. Page 20 (Line 56-59): To be reformulated &lt;&lt; In the same perspective, the Daouda study (2017), 11% of cerebral infarctions did not benefit from &gt;&gt;: It’s done.

22. Page 21 (Line 33-34): This is (95% CI: 2-4%) instead of (95% CI 2-4%): I put (95% CI: 2-4%) instead of (95% CI: 2-4).

23. Page 21 (Line 33-34): space between [69]. and In addition: I added a space between [69]. and In addition.

24. Line 46-49: So, and according to our review, A rephrase: It’s done.

25. Page 21 (Line 58) Clear the space between spleen &lt;&lt; in one month was &gt;&gt; and miss in one month was (Page 22, line 1): I deleted the space between &lt;&lt; in one month was &gt;&gt; and n one month was.

26. In conclusion, what are incidence and prevalence figures?: No epidemiological studies in Morocco have attempted to calculate the prevalence and incidence rate of ischemic stroke in Morocco. Except for a single epidemiological study that provided an overview of the prevalence and incidence rate in the population of two major cities (Casablanca and Rabat) of stroke in general. This is an epidemiological study conducted by the Stroke Research Group in Morocco. Since Moroccan studies treating ischemic stroke is the main criterion for inclusion in this systematic review. We excluded all studies that generally treat stroke without specifying the ischemic form.
For more information, you will find below two publications mentioning prevalence and incidence figures of stroke in two Moroccan cities (Casablanca and Rabat).


27. All abbreviations in the manuscript are not enumerated: It’s done. Indeed, some abbreviations are missing at the level of the manuscript (For example, AF, EMS, MENA, rt-PA, SITS ...).

28. References:

They should be provided in full, including both the title of the website and the URL, as well as the date was accessed.

Why certain references are bold and other no?

Interline between references is not respected throughout the manuscript

Page 26 (line 5): Ref 42, This is Mbagui instead of MBAGUI

Eight references are not available. If these references are not in the databases add the internet link

responses: - For the style of bibliographic references, we have adopted the BMC neurology style by the Endnote software

- The bibliographic reference management software that has automatically set this kind of style (Bold for some references and others not). In this sense, I have tried to standardize the presentation style of all the references in the article.

- I put Mbagui instead of MBAGUI

- I have added the web links of the eight references that are not available.

29. Quality of written English: This manuscript would benefit from professional english editing: It’s done. I reviewed the article regarding the quality of the English language through: Dr. Ouhaz Zakaria (Department of Experimental Psychology, University of Oxford, United Kingdom)

Reviewer 2: Michael Mazya, MD, PhD
Strongly recommend a professional English language editing service to be employed in order to improve legibility. The paper is quite fact-heavy, making a smoother reading experience all the more important…

I reviewed the article regarding the quality of the English language through: Dr. Ouhaz Zakaria (Department of Experimental Psychology, University of Oxford, United Kingdom)

- Inclusion criteria: why was 2010 chosen as the first year for study inclusion?: A systematic literature review in Arab countries published in 2009 showed that "There is significant potential in expanding epidemiological studies, particularly in populous countries such as Egypt, Algeria, Morocco and Syria. No data is available about time trends in stroke incidence or long-term outcome. Well-designed studies, fulfilling published quality criteria, are needed as a preparation to fighting this disabling condition in this part of the developing world".

For this reason, this systematic literature review aims to assess the state of stroke research in Morocco from the year of publication of this systematic review in the Arab world (2009) to 2018.


- Results, Table 5: the table should probably be re-named in English. Also, have the names of the hospitals (listed in the Location column) changed over the years, or do they simply need standardization? See "UHC Hassan II Fes" versus "CHU Hassan II Fes". Or are these two different locations?: It's done. "UHC Hassan II Fes" versus "CHU Hassan II Fes", it is the same hospital structure and only requires standardization.

- Discussion (and throughout): there is not a single mention of atrial fibrillation in the manuscript. Is it a non-entity in Morocco? There is some evidence of a paucity of AFib screening in MENA countries, but to see no mention of one of the top risk factors for ischemic stroke in a review appears strange. Or is it obscured in the somewhat cryptic "cardiac disease" risk factor category? If so, it should be discussed as a limitation.: Indeed, this is a very relevant point since atrial fibrillation is a significant risk factor for ischemic stroke. In this sense, I have reassessed the various studies included in this review, while highlighting the following findings:

- Studies have only mentioned heart disease in general.

- Other studies have focused on atrial fibrillation as an associated co-morbidity (Number=9 studies). I added the percentages of atrial fibrillation found in the nine studies.

Discussion: in relating the findings of the present review to studies of stroke in the Middle East and North Africa (MENA), recommend that the authors compare their findings to two very recent multi-national publications from the region, based on the Safe Implementation of Treatments in Stroke - MENA (SITS-MENA) registry, one on a general stroke population and
one on patients treated with IVT: Int J Stroke 2019 Oct;14(7):715-722 and Int J Stroke 2019 Oct 8:1747493019874729, both by Al Rukn et al.: In this context, we would like to thank you very much for the recommendation of the two recent and relevant publications, which will surely enrich the discussion of the results found in this systematic literature review.

To this end, I have opted for a comparison of the main results of the said publications in the MENA region and the results of this systematic review. (Discussion)

Conclusions, line one: retiring the term "cerebrovascular accident" is long overdue, at least in English medical literature. A stroke is no more an accident than a myocardial infarction or an aortic dissection. However, for some strange reason, stroke is the only disease with an acute presentation, to earn the qualifier "accident", adding to mystification, a perception of inevitability, "nothing to be done" etc. Suggest reword.: I deleted the concept of "cerebrovascular accident"

and I replaced it with "Ischemic stroke"

- Conclusions (and throughout the results): the authors point out that stroke studies in Morocco are mainly concentrated to cities with university hospitals. Meanwhile, there is no discussion of the possibility of bias which this pattern of study may introduce. In rural environments, often with higher average age and worse access to hospital care compared to cities, is it possible that older individuals with acute stroke would be taken to hospital to a lesser extent, thus skewing the epidemiology and etiological distribution? Could financial circumstances (government coverage / insurance / direct cost patterns) and resulting readiness to seek care influence the results of the studies? Recommend adding a section on limitations of the current study, as the possibility of these, and similar sources of potential bias (e.g. minor strokes not coming to medical attention) should be addressed.: According to an epidemiological survey conducted by the Research Group on Stroke in Morocco, only 43.3% of patients were hospitalized (45.7% were from urban areas and 40.4% were from rural areas). It can therefore be seen that despite the severity of stroke, less than half of patients are not treated in hospitals, due in particular to the flagrant lack of neurological beds in urban areas and the total lack of specialized hospital care in rural areas.


As well, this systematic literature review on stroke did not identify any studies conducted in a rural health facility. All studies are carried out in urban hospital structures and more specifically in university hospitals. Patients suffering from stroke in Morocco are drained exclusively to urban hospitals for possible treatment.

- I have added a whole part to the limits of the systematic review.

With my best regards,

Sincerely yours,
Ahmed Kharbach, PhD Student