Author’s response to reviews

Title: Periprocedural heparin bridging in patients receiving oral anticoagulation: a systematic review and meta-analysis

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Version: 1 Date: 09 Jul 2017

Author’s response to reviews:

July 9, 2017

Editor-in-Chief
BMC Cardiovascular Disorders,

Renato De Vecchis
Editor
Cardiology Unit, Presidio Sanitario Intermedio "Elena d'Aosta", Italy

Dear Editor-in-Chief and Dr. Renato ,

Thank you very much for your thoughtful letter on our manuscript entitled “Periprocedural heparin bridging in patients receiving oral anticoagulation: a systematic review and meta-analysis " (BCAR-D-17-00230). We appreciate the valuable comments and suggestions made by the reviewers and Editorial Board. In the following, we respond to the comments point by point. All the page numbers refer to the revised manuscript in which all changes are highlighted in red.
font. We hope that the revised manuscript is improved to the point where it can now be accepted for publication in BMC Cardiovascular Disorders. Thank you again for your consideration.

Should you have any queries, please do not hesitate to contact us at my e-mail addresses:2548700738@qq.com.

Sincerely yours,

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Response to Editor

1. However, the article has not distinguished between small surgery and major surgery. In the Study Limitations, please highlight this shortcoming further.

We thank the editor for this valuable suggestion. We agree with the reviewer that small surgeries and major surgeries may have different impact on bleeding risk. We have discussed this in the manuscript on Page 9, starting on line 26, which reads, “In current analysis, we included studies on different procedures and patients with varying degrees of thromboembolic and bleeding risk profiles. Although pre-defined subgroup analyses and meta-regressions were performed to explore the between-group heterogeneity, these analyses were only able to assess the study-level values provided by the included publications rather than individual patients. We did not have the capability to group the studies according to the type of surgery or patients’ risk profiles.”
Additionally, according to the editor’s suggestion, we have added sentences in the Limitation on page 10, starting on line 22, which now reads “Finally, bleeding risks may vary between major and minor surgeries. However, most of the individual studies didn’t report bleeding risk according to the type of procedure, which made us unable to perform analyses to account for such potential variation.”

2. “In fact, the most important finding is that patients undergoing heparin bridging, surprisingly, show a probability of thrombotic events which substantially coincides with that of patients left without any type of protective anticoagulation at the time of surgery. Please point out this issue better and represent further the possible biases related to the presence of numerous observational studies (19 in all over a total of 25 studies pooled within the present meta-analysis).”

We thank editor for these helpful comments. According to the reviewer’s suggestion, we have discussed this issue on Page 9, starting on line 3, which reads, “However, we found that patients undergoing heparin bridging, surprisingly, showed a probability of thromboembolic events which was quite similar with that of patients without any type of protective anticoagulation at the time of surgery. The findings of current analyses indicate that perioperative risk of thromboembolic events among patients requiring interruption of OAC treatment may have been overstated and may not be attenuated by bridging therapy.” We also acknowledged the potential bias caused by the number of observational studies in the Limitation section on Page 10, starting on line 8. It reads, “First, most of included studies (19 of 25 studies) were observational studies. We acknowledge that the control groups of the observational studies might consist of low thromboembolic-risk patients compared with bridged groups. Therefore, there is the possibility of treatment and control groups having different thromboembolic risks at baseline, which could lead to a risk of systemic bias in regard to which patients were bridged or not. This could partially explain the similar thromboembolic risk between bridged and non-bridged patients in this meta-analysis. It is possible that bridging therapy may have reduced a high thromboembolic risk in these high-risk, bridged patients to the level similar with that in the lower risk, non-bridged patients.”