Reviewer’s report

Title: Risk of Venous Thromboembolism after Total Hip and Knee Replacement in Older Adults with Comorbidity and Co-occurring Comorbidities in the Nationwide Inpatient Sample (2003-2006)

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Reviewer: Jean-francois F BERGMANN

Reviewer’s report:

· Major compulsory revisions

1) The quality of this paper is directly related to the quality of the record of the comorbid disease. The exhaustivity of the comorbidity recorded in the NSI is questionable. For example, a prevalence of 0.6 for cerebrovascular disease and 1.2 for congestive heart failure in elderly patients are much below the real prevalence of these diseases in elderly patients receiving orthopedic surgery. How did this information were collected ? How was the exhaustivity for the search for these comorbid diseases ?

2) The quality of the results is clearly related to the quality of the capture of the rate of VTE. It is necessary to know how this VTE was diagnosed, how much were symptomatic ? How many centers made systematic echography before discharge ?

3) We do not have any information about VTE appearing after discharge. Medium length of stay was three to four days but the majority of the VTE appear later. How many patients have been rehospitalized for VTE in the three months after the orthopedic surgery ?

4) The results are questionable probably due to a lack of power related to the multiple analysis. In comparison with literature, how could the authors explain a lower risk of VTE in patients with diabetes or cerebrovascular disease compared to patients with no comorbidity ? Why is the risk in case of congestive heart failure lower when this congestive heart failure is associated with coronary artery disease ? Why some very well-known risk factors like COPD increase the risk of VTE after knee surgery but not after hip surgery ? Why is the age a risk factor after hip surgery but not knee surgery ? All these results are in opposition with the previous literature.

5) More precise results are needed : in table 1, we need to know the frequency of the comorbid diseases for each different group of age. In table 2, we need the absolute number of events (VTE).

· Minor essential revisions

1) It is important to know how many patients receive a prophylaxis for a deep vein thrombosis prevention in the whole population, in the population with comorbidity, in the population with comorbidity and VTE.
2) Why did comorbidities considered in this paper were limited to coronary artery disease, congestive heart failure, COPD, diabetes and cerebrovascular disease? COPD and congestive heart failure are already well-known as risk factors for VTE. Arterial diseases are not. Then the results in table 2 are clearly in relation with the previous data and this paper does not add any new epidemiological information.

3) The ENDORSE study published by Alexander Cohen (Lancet 2008; 371: 387-94) has to be discussed and to be listed in the references.

4) On page 9, the number of patients included in the study by Gangireddy and by Kikura has to be given.

5) The title of this study might be more informative, saying that only cardiovascular comorbidity were studied.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I received fees and funding from AstraZeneca, Glaxo Smith Kline, SanofiAventis and Novartis