**Title page**

# Title: Letter to the Editor: Physical activities and surgical outcomes in elderly patients with acute type A aortic dissection

# Article type: Letter to the editor

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**Letter:**

To the Editor:

An article published in your esteemed journal, namely “Physical activities and surgical outcomes in elderly patients with acute type A aortic dissection”,1 recently came to our attention. The paper makes a valuable contribution to medicine because it highlights an essential correlation between postoperative physical inactivity and mortality in elderly patients undergoing ATAAD repair. It was instructive for us to discover such an extensive study, and we would like to congratulate the authors for their sincere efforts. We agree with the conclusion of the article that postoperative walking difficulty was an independent risk factor for late mortality in patients regaining ambulatory autonomy at discharge and in all cohorts. However, we would like to take this opportunity to point out some critical key points that may add value to this article.

Referring to limitations, since the paper is based on retrospective design, it increases the susceptibility of reporting bias due to lack of proper recall, which may lead to incomplete documentation; this would be fair if the author has used data of the present times. Additionally, in the results section, the author, while comparing patient characteristics between the two age groups, did not take Marfan syndrome, an inherited gene defect of fibrillin 1 (FBN1) gene which codes for the connective tissue protein fibrillin 1, into account in the younger population. This disorder damages the aortic wall in most patients, causing gradual expansion of the aortic wall increasing sensitivity to acute aortic dissection.

Based on the revised Ghent criteria, aortic root dilatation/dissection is one of the main clinical features of Marfan syndrome.2 In addition, the authors did not refer to the bicuspid aortic valve as a risk factor for acute aortic dissection. The likelihood of aortic dissection gradually increases at a sinus diameter of 5cm and then increases sharply at an ascending aortic diameter of 5.3cm. Hence early prophylactic ascending aortic replacement in patients with a bicuspid aortic valve should be considered in aortic centers to reduce the occurrence of acute type A aortic dissection in ones having aortic diameters greater than 5.0 cm or with a cross-sectional area to height ratio greater than 10cm2/m.3 On the other hand, the authors missed a vital association between aortic dissection and smoking. Smoking is associated with increased oxidative stress and damages the endothelial mucosa leading to aneurysm expansion and worsening hypertension, resulting in aortic dissection. The authors should have mentioned this key point.4 Finally, the article does mention having a more female population in the elderly group; however, it misses an essential relation between aortic dissection and pregnancy, especially in the younger population. Aortic dissection in pregnant women is the third most common cause of maternal death and has a significant impact on maternal and infant health. Pregnancy is associated with an increased risk of aortic dissection, and around 50% of the dissection in women of childbearing age is associated with pregnancy.5

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