## Lefter to the Editor

## Risk factors of pocket hematoma in patients with electrophysiological device implantation

Dear Editor,

We have read the article of Proietti et al, entitled "Risk of pocket hematoma in patients on chronic anticoagulation with warfarin undergoing electrophysiological device implantation: a comparison of different peri-operative management strategie" with great interest¹. The authors have evaluated the relation between periprocedural anticoagulation regimen with the risk of developing pocket hematoma in patients undergoing electrophysiologic device implantation who are on warfarin treatment, which is extremely important in clinical practice and might cause prolongation of hospitalizations. The article reviewed 15 studies, in which patients with maintenance of warfarin, discontinuation of warfarin and bridging with heparin were recruited. As a result of the study, they have shown that continuation of warfarin tratment during periprocedural period did not increase the risk of developing pocket hematoma and lowered the risk of developing pocket hematoma when compared with bridging therapy with heparin. Furthermore, the study have revealed that periprocedural bridging therapy with heparin increased the risk of developing pocket hematoma and prolonged duration of hospitalization. It has also shown with this study that the risk of pocket hematoma did not increase in patients undergoing electrophysiologic device surgery without discontinuation of warfarin treatment. Besides, adding some points to the study would be of benefit for guiding clinicians.

Pocket hematoma is an important complication, seen after electrophysiologic device implantation, at an approximate rate of  $2\text{-}5\%^{2,3}$ . A variety of factors such as experience of the operator, age of the patient, surgical technique, type of the device, antiplatelet/anticoagulant therapy, renal failure and subcutaneous fatty tissue play role in developing hematoma<sup>4,5</sup>. On the other hand, Guo et al<sup>6</sup> have shown in their study where they investigated the correlation between body mass index (BMI) and development of pocket hematoma, that the risk of pocket hematoma was higher in individuals with a BMI of < 23 kg/m² when compared to the ones with a BMI of > 23 kg/m². These data would give idea to the clinicians that they should avoid bridging therapy with heparin in patients with a BMI of < 23 kg/m².

As mentioned above, when determining the anticoagulation strategy for similar patient populations, we think that considering BMI value would decrease the risk of development of pocket hematoma. As a result, we congratulate the authors fort his original study and hope it to pioneer more studies in the future.

## **Conflict of Interest**

The Authors declare that they have no conflict of interests.

## References

- R. PROIETTI, I. PORTO, M. LEVI, A. LEO, V. RUSSO, E. KALFON, G. BIONDI-ZOCCAI, J.-F. ROUX, D.H. BIRNIE, V. ESSEBAG. Risk of pocket hematoma in patients on chronic anticoagulation with warfarin undergoing electrophysiological device implantation: a comparison of different peri-operative management strategies. Eur Rev Med Pharmacol Sci 2015; 19: 1461-1479.
- 2) TAKAHASHI T, BHANDARI AK, WATANUKI M, CANNOM DS, SAKURADA H, HIRAOKA M. High incidence of device-related and lead-related complications in the dual-chamber implantable cardioverter defibrillator compared with the single chamber version. Circ J 2002; 66: 746-750.

- 3) WIEGAND UK, LEJEUNE D, BOGUSCHEWSKI F, BONNEMEIER H, EBERHARDT F, SCHUNKERT H, BODE F. Pocket hematoma after pacemaker or implantable cardioverter defibrillator surgery: influence of patient morbidity, operation strategy, and perioperative antiplatelet/anticoagulation therapy. Chest 2004; 126: 1177-1186.
- 4) POOLE JE, GLEVA MJ, MELA T, CHUNG MK, USLAN DZ, BORGE R, GOTTIPATY V, SHINN T,DAN D, FELDMAN LA, SEIDE H, WINSTON SA, GALLAGHER JJ, LANGBERG JJ, MITCHELL K, HOLCOMB R; REPLACE Registry Investigators. Complication rates associated with pacemaker or implantable cardioverter-defibrillator generator replacements and upgrade procedures: results from the REPLACE registry. Circulation 2010; 122: 1553-1561.
- AHMED I, GERTNER E, NELSON WB, HOUSE CM, ZHU DW. Chronic kidney disease is an independent predictor of pocket hematoma after pacemaker and defibrillator implantation. J Interv Card Electrophysiol 2010; 29: 203-207
- 6) Guo JP, Shan ZL, Guo HY, Yuan HT, Lin K, Zhao YX, Wang YT. Impact of body mass index on the development of pocket hematoma: A retrospective study in Chinese people. J Geriatr Cardiol 2014; 11: 212-217.

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