

## Anticoagulation management in deep venous thrombosis - real world data and unmet needs

Ioannou P, Kladou E

Internal Medicine Department of University Hospital of Heraklion, Heraklion, Greece

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Dear Editor,

Venous thromboembolism (VTE) includes deep venous thrombosis (DVT) and pulmonary embolism (PE) and affects 5 % of people during their lifetime. VTE is treated with anticoagulants for at least three months to prevent thrombus extension, embolization, recurrence, and development of post-thrombotic syndrome<sup>1</sup>. Treatment of VTE requires balancing the benefits of anticoagulants against the risk of bleeding. Choices for VTE treatment include direct oral anticoagulants (DOACs; rivaroxaban, apixaban, edoxaban, and dabigatran), vitamin K antagonists (VKA), low molecular-weight heparin (LMWH), and unfractionated heparin (UFH)<sup>1</sup>. After their establishment as non-inferior for VTE's treatment, DOACs have been increasingly used due to their simplicity, minimal interactions with food and immediate action<sup>1</sup>. However, DOACs are used in less than 50 % of cases, as shown by real-world data<sup>2</sup>.

In our hospital, 195 patients were hospitalized in the Internal Medicine Department from 2014 to 2018 with a DVT diagnosis. The mean age was 65.8 (standard deviation: 19.1) years, 102 (52.3 %) were men, and the median length of stay was three (interquartile range: 2-6) days. Among them, 11 (5.6 %) had a history of previous DVT, and 49 (25.3 %) were re-hospitalized within six months after discharge. Within six months of anticoagulation, two patients (1 %) had bleeding necessitating hospitalization, three patients (1.5 %) had a recurrence of DVT, and seven patients (3.6 %) died. Data on anticoagulation were retrieved for 181 patients (92.8 %) from the electronic health system. Among them, 108 patients (59.7 %) were treated with a DOAC, 49 (27.1 %) with LMWH or fondaparinux, and 24 (13.3 %) with a vitamin K antagonist.

Patients treated with DOACs had similar age with those treated with LMWH, fondaparinux or a vitamin K antagonist (66.4 vs 68.7 years,  $p=0.41$ , unpaired t-test) and did not differ in terms of gender (55.6 % vs 47.9 % males,  $p=0.31$ , chi-square test). However, they had a smaller duration of hospitalization (three vs four days,  $p=0.004$ , Mann-Whitney test) and lower mortality at six months (0.9 % vs 6.8 %,  $p=0.04$ , Fischer's exact test). Finally, re-hospitalization at six months was slightly lower in the group treated with DOACs even though this was not statistically significant (20.4 % vs 32.9 %,  $p=0.06$ , chi-square test).

In our center, DOACs were used in more than 50 % of DVTs, a rate higher than in other studies<sup>2</sup>, and were associated with a shorter duration of hospitalization. Our data imply that given the low risk of bleeding, recurrent DVT, and death, the vast majority of patients can be treated with DOACs without being admitted, thus, reducing healthcare costs. Indeed, more than 80 % of DVT patients present without bilateral, massive, or splanchnic DVT, and can be safely discharged from the Emergency Department on DOACs<sup>3</sup>. In that direction, even though we noticed an increased use of DOACs in our institution, there is an unmet need for reduction of cost by careful selection of those patients who can be treated as outpatients with DOACs, with a close follow-up.

### Conflict of interest

The authors declare no conflict of interest.

### References

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**Corresponding author:** Petros Ioannou MD, MSc, PhD, Internal Medicine Department, University Hospital of Heraklion, Stavrakia and Voutes crossroad, 71110 Heraklion, Crete, Greece, tel: +302810392728, fax: +302810392359, e-mail: p.ioannou@med.uoc.gr