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Tailored oral anticoagulant prescription in patients with atrial fibrillation: Use and misuse of clinical risk prediction scores

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In the last 15 years, the practice guidelines as well as the real-world clinical care of patients with atrial fibrillation (AF), in particular the management of thromboembolic risk, has evolved and deeply changed.[1] Nowadays, all the current international guidelines recommend unanimously that AF patients need to be treated with oral anticoagulant (OAC) drugs, with the only exception of patients at low thromboembolic risk.[2] Among the available OAC drugs, again the guidelines uniformly indicate the non-vitamin K antagonist OACs (NOACs) as the preferred treatment compared with vitamin K antagonists (VKAs), on the basis of evidence indicating a similar (even superior) effectiveness and a safer clinical profile.[2] Recent epidemiological evidence confirmed that on these premises the overall rate of OAC prescription has significantly increased in the recent years.[3]

Notwithstanding the clear indications coming from the guidelines, a high baseline bleeding risk is commonly considered as a major contraindication to withhold OAC prescription.[4] This practice may occur despite the fact that all the guidelines agree that a high bleeding risk at baseline evaluation is not a sufficient reason for avoiding prescription of OAC.[2] Rather than doing this, a high bleeding risk should be a reason to flag patients that should receive specific interventions in order to control and modulate all the modifiable and potentially modifiable bleeding risk factors.[2]

In the study presented by Gamble et al., published in the *European Journal of Preventive Cardiology*, which focused on a cohort of AF patients experiencing a stroke event, the majority of patients (64%) reported both a high thromboembolic risk (based on CHA_2DS_2-VASc score) and a high bleeding risk (based on a modified version of the $HEMORR_2HAGES$ score).[5] The authors analyzed the prescription of OAC prior to stroke occurrence and found that only two thirds of patients with high thromboembolic and bleeding risks were treated with OAC before the occurrence of event. Moreover, they analyzed the impact of previous OAC treatment on both in-hospital and long-term mortality.[5] They found that those patients with high thromboembolic and bleeding risks that were on treatment with OAC prior to the stroke occurrence had a significantly lower risk for both in-hospital (~30% risk reduction) and long-term mortality (~20% risk reduction), after full multivariate adjustment.[5]

While we should not be surprised that those patients with a high thromboembolic risk reported a contemporary high bleeding risk, in consideration of the similarity in terms of risk factors recognized for both conditions, the reported data regarding the reduced mortality risk are extremely interesting. The evidence that even in high-risk patients, such as those that had already reported a stroke event, the prescription of OAC in patients with a high bleeding risk may grant a significant reduction in short- and long-term mortality risk underlines and substantiates the guidelines' recommendations on properly considering the data regarding baseline risk evaluation and avoiding any decision-making based on perceptions rather than facts. On one hand, following the evaluation of thromboembolic risk to guide prescription confirms the significant role in reducing adverse outcomes of great clinical value. On the other hand, notwithstanding the high bleeding risk, the net clinical advantage of OAC prescription appears to be substantial and persistent.

Previous data have already confirmed that OAC prescription according to the guidelines' recommendations

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provide a significant reduction of major adverse events in AF patients.[6,7] Furthermore, the data presented confirm and reinforce the previous data, illustrating how the appropriate prescription of OAC in AF patients is associated with a significant reduction in mortality.[8]

Considering the previous evidence and the data presented by Gamble et al.,[5] we can again confirm how the evaluation of bleeding risk should not be the basis for excluding OAC prescription; rather, we stress the clinical value of using the so-called 'Birmingham 3-Step' management strategy.[2] In this clinical management proposal, while the evaluation of thromboembolic risk is pivotal to identify patients to be treated with OAC (Step 1), the evaluation of bleeding risk is necessary to distinguish those that need to be more carefully followed and for which specific strategies are needed to reduce the risk of major bleeding events (Step 2). Finally, careful evaluation is needed to choose the more adequate OAC treatment according to the patient's specific characteristics (Step 3).[2] This approach should be further included in an integrated model to manage AF patients in an holistic way, in order to optimize the clinical management and reduce the overall risk of adverse outcomes, such as the recently proposed 'Atrial Fibrillation Better Care' (ABC) pathway[2] (Figure 1), which aims to control for all the relevant aspects that could contribute to reducing the overall risk of adverse outcomes, as well as the strict control of any contributing risk factors,[9] such as lifestyle[10] or smoking habits.[11]

The appropriate use of clinical risk scores is necessary to optimize the management of AF patients and to propose to the patients' their best options on the basis of more informed evidence coming from clinical practice guidelines. The misuse of these tools should be avoided, which includes delegating to the scores the 'core' of the clinical decision process, resulting in 'score-related automatic decisions'. Conversely, the value of risk prediction scores is undebatable as a reliable tool to help, and not replace, the complex process of medical decision-making.

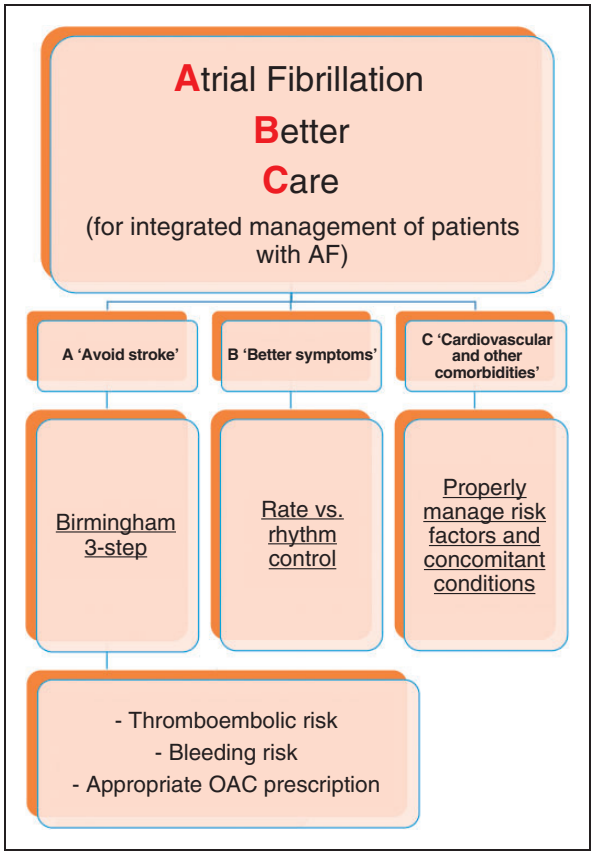

Figure 1. The ABC pathway for integrated management in AF patients.

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