The future of anticoagulation

H. ten Cate
Professor of clinical thrombosis and haemostasis, Maastricht University Medical Center and Cardiovascular Research Institute (CARIM), Maastricht, the Netherlands

Traditionally, longterm oral anticoagulant therapy consists of a vitamin K antagonist (VKA), the dose of which is adjusted on the basis of the prolongation of the prothrombin time (expressed as international normalized ratio, INR). In the Netherlands, VKA management is guided by an Anticoagulation Clinic ("Trombosedienst") in total these clinics guide 438.000 patients. A small, but increasing, proportion of patients self-manages VKA treatment (27.000, or 6% on average).

Non-VKA oral anticoagulants, or NOACs, have been developed to simplify anticoagulant therapy; this is achieved by administering a fixed dose that based on postulated stable pharmacokinetics, does not require frequent laboratory monitoring and adjustment. The NOACs act by direct inhibition of the active site of a coagulation enzyme, ie dabigatran in case of thrombin and rivaroxaban, apixaban or edoxaban, for inhibiting factor Xa. The lack of monitoring requirement for NOACs causes a shift in antithrombotic management; while in the traditional situation, Anticoagulation (AC) clinics have been "case manager" for the patients on VKA (in the ambulant care setting), for patients on NOACs there is as yet no good long term solution. In addition to the prescribing physician (in many cases cardiologist for patients with atrial fibrillation, the vast majority of patients on anticoagulants), the general practitioner and pharmacist are supposed to manage the patient on NOAC therapy, in the long run. So far, there are no guidance documents that outline the requirements for maximizing drug adherence and minimizing risks of side effects that also with NOACs may occur, due to interactions, incompliance and comorbidity. In order to improve this situation a national committee coordinating anticoagulation care has released the second version of an Integrated Antithrombotic Care document (known as LSKA 2.0) that points out organizational requirements for proper management. This document proposes a clear-cut organization in which protocols, communication among care takers and patients and regional collaboration between AC clinics, patients and all other relevant stakeholders, is structured and implemented. This structure should provide a better-suited safeguard for managing all patients on any kind of antithrombotic therapy, also to include platelet aggregation inhibitors. The latter is deemed necessary, because of the increasing concern about (in part avoidable) bleeding complications (up to 10% clinically relevant bleeding) in patients on combined antithrombotic treatment (anticoagulation plus antiplatelet therapy).

This scenario includes the development of "Thrombosis Expert Centers", at least at a regional level. Such Centers are required in order to improve skills and knowledge of all aspects involved (pharmacokinetics, interactions, mode of action, combine drug regimens, safety, adherence issues, laboratory monitoring etc) Also, the need for training facilities to better guide physicians, laboratory staff and other care-takers in antithrombotic management becomes imperative.