

## Anticoagulation in chronic kidney disease patients: The practical aspects - Sameh Mohamed Abouzeid - Theodor Bilharz Research Institute

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There is an increasing awareness about the risks of arterial and venous thromboembolism (TE) in hospital patients and general public which has led to consideration of thrombosis prevention measures in earnest. Early recognition of the symptoms of TE disease has led to timely administration of antiplatelet and anticoagulant drugs, translating to better outcome in many of these patients. In this respect, patients with chronic kidney disease (CKD) represent a special group. They indeed represent a high-risk group for thrombosis both in the cardiovascular territory and also in the venous circulation. At the same time, abnormalities in the platelet membranes put them at risk of bleeding which is significantly more than other patients with chronic diseases. Anticoagulation may be ideal to prevent the former, but the co-existing bleeding risk and also that the commonly used drugs for inhibiting coagulation are eliminated by renal pathways pose additional problems. In this review, we try to explain the complex thrombotic-hemorrhagic state of chronic kidney disease patients, and practical considerations for the management of anticoagulation in them with a focus on novel anticoagulant drugs. Chronic kidney disease (CKD) is a global health problem affecting

up to 14% of the adult population in developed countries. On the basis of current guidelines, patients with CKD will often fulfill criteria for both short-term and long-term anticoagulation. Paradoxically, patients with CKD are not only at a higher risk of thrombosis, they are also at increased risk of bleeding. Furthermore, the pharmacokinetics and pharmacodynamics of many anticoagulant therapies are significantly affected by renal dysfunction. In addition, patients with advanced CKD are often systematically excluded from major clinical trials. As such, the decision on whether to anticoagulate or not, and if so with what agent, poses significant challenges. A solid understanding of the condition in question and the available treatments is required to make an informed judgment call. An in-depth appreciation of the advantages and disadvantages of the currently available anticoagulants is a key element in the decision-making process. An in-depth knowledge of the indication for and advantages of anticoagulation, an appreciation of the risks associated with anticoagulation, and an awareness of the advantages and disadvantages of the currently available anticoagulants are key factors in the decision-making process.