The Heart Surgery Forum #2015-1268
18 (5), 2015 [Epub October 2015]
doi: 10.1532/hsf.1384

Online address: http://journal.hsforum.com

A Probable Life-Saving Switch from Apixaban to Phenprocoumon

Claudia Stöllberger, MD, Josef Finsterer, MD

Krankenanstalt Rudolfstiftung, Wien, Austria

ABSTRACT

The direct oral anticoagulants (DOAC) dabigatran, rivaroxaban, and apixaban are increasingly prescribed in atrial fibrillation (AF) patients, although dosage in elderly patients, safety in chronic kidney disease, food- and drug-interactions, laboratory tests for monitoring, and antidote are not clarified. In a 78-year-old man with an acute stroke, paroxysmal AF and sick-sinus-syndrome were detected as he received a DDD-pacemaker and 5 mg apixaban/bid. He had a history of hypertension, hypothyroidism, diabetes mellitus, hyperlipidemia, sleep apnea, lumbar discopathy, and nephropathy. Renal function deteriorated after 2 months, and apixaban was changed to phenprocoumon. Three months later, he suffered from abdominal pain and hemorrhagic shock due to rupture of an infrarenal aortic aneurysm. After reversal of the anticoagulation with prothrombin-complex concentrate, a stent-graft with exclusion of the aneurysm was implanted. Switching from apixaban to phenprocoumon was probably life-saving. Vitamin-K-antagonists should be preferred to DOAC in patients with AF and vascular disease.

INTRODUCTION

Rupture of an aortic aneurysm is a medical emergency necessitating immediate therapy. Risk factors for an abdominal aortic aneurysm are advanced age, hypertension, and atherosclerotic occlusive disease. These risk factors are quite similar to those for stroke and embolism in atrial fibrillation (AF), which can be assessed with the CHA2DS2VASc-score (congestive heart failure, hypertension, age >75, diabetes, stroke, vascular disease, age 65-74, female sex) [Kent 2010; Lip 2010]. The direct oral anticoagulants (DOAC) dabigatran, rivaroxaban, and apixaban are increasingly prescribed in AF patients, although important issues like dosage in elderly patients, safety in patients with chronic kidney disease, and food- and drug-interactions are not clarified [Harel 2015]. Furthermore, in the case of bleeding, there is neither an easily available laboratory test for monitoring of anticoagulant activity, nor an antidote for reversal. This causes problems when emergency surgery is indicated. We recently managed a patient in whom the change of the anticoagulant therapy from apixaban to the vitamin-K-antagonist (VKA) phenprocoumon was probably life-saving, because of an eventually occurring rupture of a previously unknown abdominal aortic aneurysm.

Received May 15, 2015; accepted July 5, 2015.

Correspondence: Krankenanstalt Rudolfstiftung, Juchgasse 25, A-1030 Wien, Österreich; (e-mail: claudia.stoellberger@chello.at; fifigs1@yahoo.de).

CASE PRESENTATION

A 78-years-old Caucasian male patient with a history of arterial hypertension, hypothyroidism, diabetes mellitus, hyperlipidemia, sleep apnea syndrome, lumbar discopathy, diabetic nephropathy, and nicotine abuse of 50 pack-years suffered from an embolic stroke in May 2014. Paroxysmal AF and sick sinus syndrome with pauses up to 4 seconds were detected. A DDD pacemaker was implanted and a therapy with 5 mg apixaban bid was initiated. Two months later he was readmitted because the right ventricular pacemaker lead had to be repositioned. At that time, the renal function had further deteriorated (serum creatinine 1.56 mg/dL, creatinine clearance 45 mL/min). Since it was expected that due to his comorbidities the renal function would further deteriorate and he was prone to recurrent falls, the anticoagulant therapy was changed from apixaban to the VKA phenprocoumon, due to the possibility of laboratory monitoring and availability of an antidote. In the following months, he suffered from recurrent lumbar and back pain, which he attributed to his discopathy. In October 2014, he was readmitted because of sudden onset of abdominal pain and arterial hypotension. Computed tomography showed an 8 × 9 cm infrarenal aortic aneurysm with extensive retroperitoneal hematoma. After reversal of the phenprocoumon-induced anticoagulation with 1,500 IE prothrombin complex concentrate, a successful implantation of a stent-graft with exclusion of the aneurysm was carried out. The postoperative course was complicated by renal failure necessitating hemodialysis, long-term mechanical ventilation, and protection colostoma because of sacral and gluteal decubital ulcerations.

DISCUSSION

Although there is a frequent coincidence of AF and atherosclerosis, little is known about safety and efficacy of DOAC in patients with vascular disease. A post-hoc study analyzed patients with peripheral artery disease who were included in the ROCKET AF study, which compared the DOAC rivaroxaban with the VKA warfarin [Jones 2014]. Patients with peripheral artery disease had a higher risk of major or non-major clinically relevant bleeding when treated with rivaroxaban rather than warfarin. Unfortunately, it is not mentioned whether patients in that study suffered from abdominal aortic aneurysm nor is any information about that topic available from the other DOAC-investigating randomized trials.

Rupture of an abdominal aortic aneurysm in patients under DOAC has only been reported once so far in a patient under dabigatran [Aubert 2013]. Due to lack of a specific antidote, he was treated with activated factor VII, mass transfusions

comprising platelets, erythrocyte concentrates, and fresh frozen plasma. He received an aorto-bifemoral bypass and was extubated on the 12th postoperative day. Reversal of anticoagulation in patients under VKA, on the contrary, is easy to perform, as the effect can be measured by simple laboratory tests and physicians have a longstanding experience with these drugs. All these considerations suggest that VKA should be preferred to DOAC in AF patients with vascular disease.

REFERENCES

Aubert J, Delalande JP, Skowronski P. 2013. Aneurysm of abdominal aorta rupture in a patient on dabigatran treatment. Ann Fr Anesth Reanim 32:271-2.

Harel Z, Sood MM, Perl J. 2015. Comparison of novel oral anticoagulants versus vitamin K antagonists in patients with chronic kidney disease. Curr Opin Nephrol Hypertens 24:183-92.

Jones WS, Hellkamp AS, Halperin J, et al. 2014. Efficacy and safety of rivaroxaban compared with warfarin in patients with peripheral artery disease and non-valvular atrial fibrillation: insights from ROCKET AF. Eur Heart J 35:242-9.

Kent KC, Zwolak RM, Egorova NN, et al. 2010. Analysis of risk factors for abdominal aortic aneurysm in a cohort of more than 3 million individuals. J Vasc Surg 52:539-48.

Lip GY, Nieuwlaat R, Pisters R, Lane DA, Crijns HJ. 2010. Refining clinical risk stratification for predicting stroke and thromboembolism in atrial fibrillation using a novel risk factor-based approach: the euro heart survey on atrial fibrillation. Chest 137:263-72.