

Literature review

Influence of DOAC Stop on coagulation assays in samples from patients on rivaroxaban or apixaban

(S. Platton *et al.* Int J Lab Haem 2018; ahead of print)

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It is well known that direct oral anticoagulants (DOAC), like rivaroxaban and apixaban, may interfere to a varying degree in clotting assays depending on the type of DOAC and the assay type and reagents used in the laboratory [1, 2].

Therefore, when laboratory investigations are performed while patients are on these drugs the interpretation of the test results can cause problems resulting in a risk of misinterpretation.

Recently, a simple method was developed to extract DOACs from plasma (DOAC Stop) [3]. It has been demonstrated that DOAC Stop is effective for Apixaban, Edoxaban, Rivaroxaban and Dabigatran.

Platton *et al* investigated whether the application of DOAC Stop on plasmas collected from patients on rivaroxaban or apixaban effect different haemostasis assays [4]. They investigated the effect on the prothrombin time (PT), activated partial thromboplastin

time (APTT), DOAC-specific anti-Xa assay, Factor VIII (one-stage and chromogenic assay) and DRVVT (low and high phospholipid) before and after sample treatment with DOAC-Stop. It was demonstrated that DOAC Stop removed the effect of DOACs on these assays and that the number of false positive lupus anticoagulant results in patients on rivaroxaban was reduced.

The authors concluded that this study suggests that DOAC Stop can be used to screen for coagulopathies or lupus anticoagulant in samples from patients on rivaroxaban or apixaban. However, since DOACs are probably not completely removed results should still be interpreted with caution.

For further details about this study see reference 4.

1. Adcock, D.M. and R. Gosselin, Direct Oral Anticoagulants (DOACs) in the Laboratory: 2015 Review. *Thromb Res*, 2015; 136: 7-12.
2. Gosselin, R.C., D.M. Adcock, S.M. Bates, J. Douxfils, E.J. Favaloro, I. Guin-Thibault, *et al.*, International Council for Standardization in Haematology (ICSH) Recommendations for Laboratory Measurement of Direct Oral Anticoagulants. *Thromb Haemost*, 2018; 118: 437-450.
3. Exner, T., N. Michalopoulos, J. Pearce, R. Xavier and M. Ahuja, Simple method for removing DOACs from plasma samples. *Thromb Res*, 2018; 163: 117-122.
4. Platton, S. and C. Hunt, Influence of DOAC Stop on coagulation assays in samples from patients on rivaroxaban or apixaban. *Int J Lab Hematol*, 2018. DOI: 10.1111/ijlh.12950.