

# Use of hemodialysis for dabigatran clearance in a patient requiring urgent surgery. A case report

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## Background

If a patient on dabigatran treatment needs an urgent surgery, hemodialysis has been shown to be a useful tool to decrease dabigatran plasma levels due to his low plasma protein binding.

## Case report

A 71-year-old male patient, with non-valvular atrial fibrillation anticoagulated with dabigatran 110mg/12h, chronic kidney disease stage III and multivessel coronary artery disease waiting for coronary artery bypass grafting (CABG) suffered a sudden cardiac arrest.

From admission, continuous elongated times on clotting assays TT and aPTT was detected along 7 days. We performed diluted thrombin time (Hemoclot assay<sup>®</sup>) (Graph1) the seventh day and detected dabigatran plasma levels.

As CABG couldn't be delayed we performed an extended intermittent hemodialysis for 8 hours with improvement in Hemoclot<sup>®</sup> assay values (Graph1). A slight rebound in dabigatran's concentration was observed the next day

probably due to his 60-70 liters of volume of distribution but surgery was performed without bleeding complications and the patient could be discharged ten days later.

## Discussion

The reason of persistently increased plasma levels of dabigatran in our patient was his exacerbated chronic renal failure with GFR < 30 ml/min. PCC or FVIIa were discarded by the increased thrombotic risk in a patient with recent ischemia and Idarucizumab was not available.

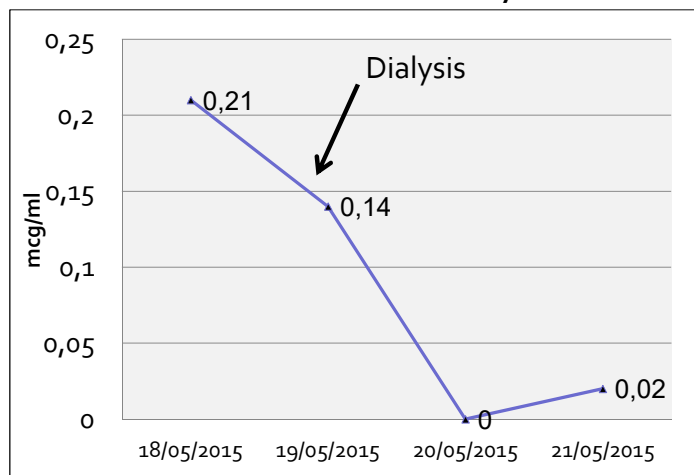
## Learning points

Dialysis due to dabigatran's pharmacokinetic profile with low plasma protein binding is a good therapeutic option, which enables clearing plasma dabigatran concentration and improve patient's hemostasis when urgent surgery is required.

## References

1. Wilson JA. An evaluation of oral dabigatran etexilate pharmacokinetics and pharmacodynamics in hemodialysis. *J Clin Pharmacol.* 2014 Aug;54(8):901-9.
2. Davis EM. Strategies for urgent reversal of target-specific oral anticoagulants. *Hosp Pract (1995).* 2014 Dec;42(5):108-25.

## Hemoclot assay<sup>®</sup>



Graph 1- Elongated diluted thrombin time (Hemoclot<sup>®</sup>)