

Clinical usefulness of the novel DOAC Dipstick near patient test strip in emergency settings using semi-automatic DOASENSE Reader

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Background & Objective

A recently developed DOAC Dipstick point-of-care strip test has shown high sensitivity and specificity for detection of the presence of direct oral thrombin (DTI) and factor Xa inhibitors (DXI) in urine and provides qualitative test results after 10 minutes. The aim is to highlight the clinical usefulness of the DOAC Dipstick test for decision making in emergency settings by two case reports.

Methods

Presentation of two case reports.

Results

Case 1

A 54-year old female presented to the Emergency Department due to acute shortness of breath. Bed-side ultrasound and chest X-ray showed a right-sided pneumothorax with a midline shift that required urgent intervention. Review of her latest discharge report suggested intake of edoxaban due to non-valvular atrial fibrillation but exact recent medication intake could not be obtained due to patient's lack of knowledge. A DOAC Dipstick test (figure 1) was performed to assess the presence of a DXI or a DTI in the patient's urine to guide further clinical management. The semi-automatic DOASENSE Reader (figure 2) showed absence of DTI and DXI on the pads of DOAC Dipstick. Insertion of a pleural chest drain was performed without need for prior administration of prothrombin complex concentrate and no bleeding complications occurred. Post-hoc analysis of anti-factor Xa specific chromogenic test revealed an edoxaban concentration of <20ng/ml in plasma

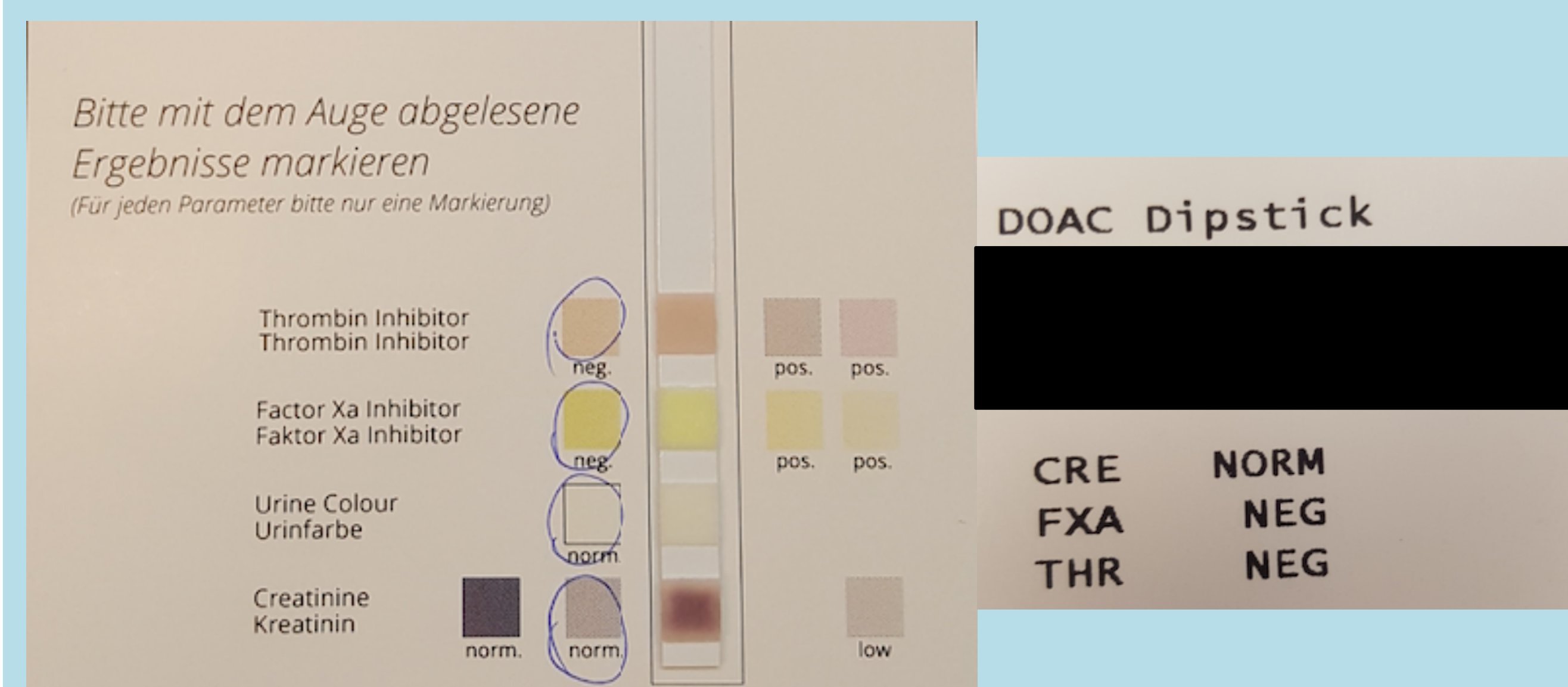


Figure 1 (left): performed DOAC Dipstick; Figure 2 (right): DOASENSE-Reader results

Case 2

A 72-year old female was admitted to the emergency department due to aphasia and impaired consciousness. A cerebral CT scan showed a left-sided middle cerebral artery occlusion. Thorough review of her medical history prescription of apixaban for non-valvular atrial fibrillation, but current intake could not be obtained from the patient due to impaired consciousness. A DOAC Dipstick test (figure 3) was performed to assess the presence of DXI in patient's urine sample to estimate recent intake and guide further clinical management with or without thrombolysis. The semi-automatic DOASENSE Reader (figure 4) showed presence of a DXI in patient's urine. Since intravenous thrombolysis is not recommended for patients on DOACs a decision was made to directly subject the patient to interventional thrombectomy.

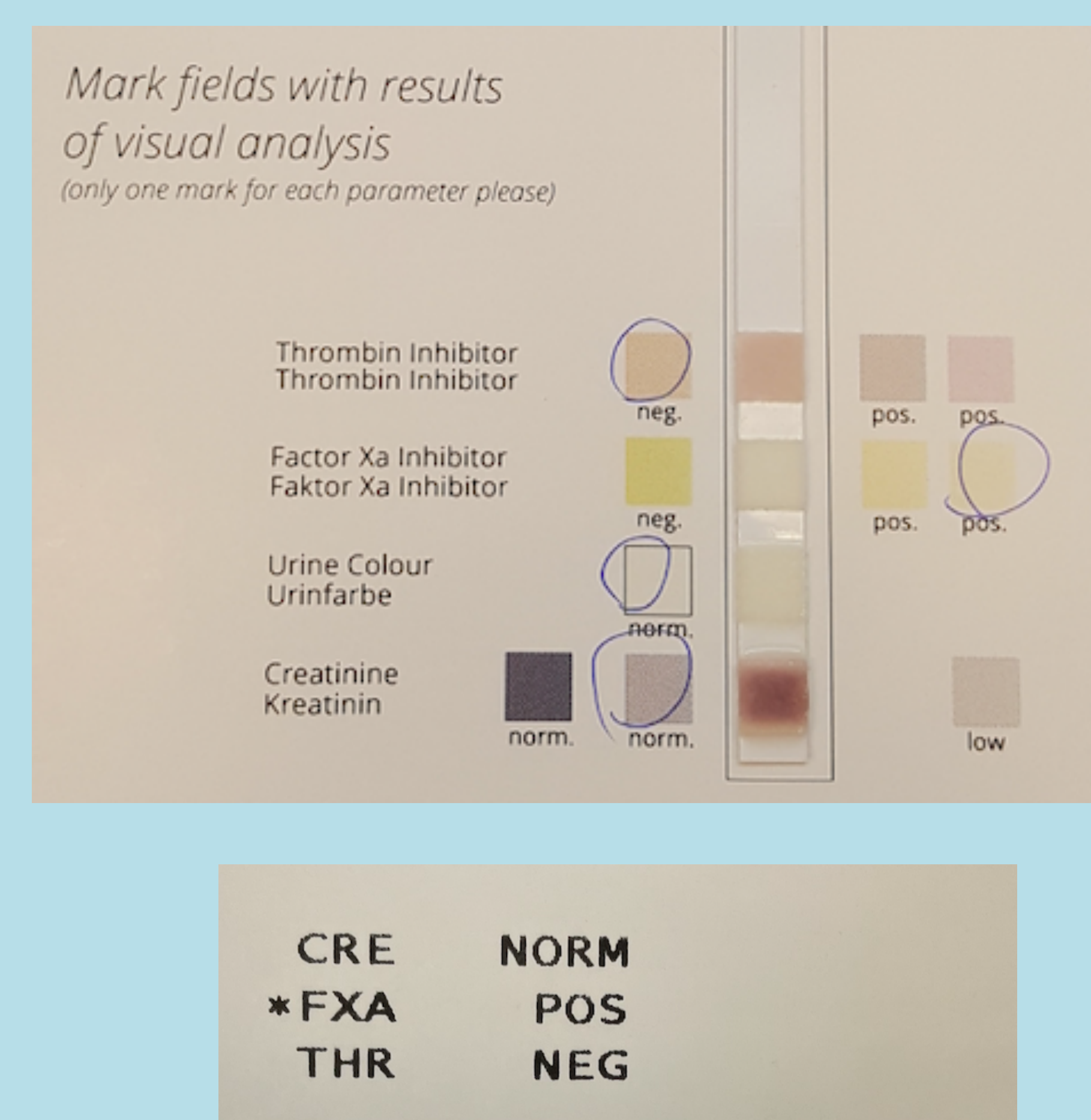


Figure 3 (upper): performed DOAC Dipstick; Figure 4 (lower): DOASENSE-Reader results

Conclusion

These case presentations suggest clinical usefulness of the DOAC Dipstick test in different clinical scenarios, where critical decisions must be made in emergency situations, when thorough anamnesis for recent intake of medication may be not possible or unreliable.