

Point of care testing of direct oral anticoagulants in urine in patients with stroke at the emergency



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AIM

To present an application of a fast and simple screening test for direct oral anticoagulants in urine (DOAC Dipstick[®]) in stroke patients with an unknown medical history.

BACKGROUND

 The incidence of stroke is increasing each year while its adequate treatment is still a challenge.

METHODS

 We included all patients admitted at the Emergency Department between 15 May 2020 and 15 May 2021 with the diagnosis of stroke.



- One of the key factors in managing treatment is the coagulation profile.
 It is often affected by the use of direct oral anticoagulants (DOAC). In patients using DOACs, the treatment of ischemic or hemorrhagic stroke differs fundamentally¹.
- Therefore, information about DOAC use is important, especially if the patient's medical history is unknown.
- DOAC Dipstick[®] is a diagnostic strip that is intended for the qualitative detection of DOACs in urine.
 Dabigatran (THR test), Apixaban, Edoxaban and Rivaroxaban (FXA test) are identified by color change^{2,3}.
- We used DOAC Dipstick[®] on all patients with a stroke diagnosis and the lack of medical history (unconsciousness, aphasia).
- Upon admission, a permanent urinary catheter (PUC) was inserted as a part of the primary survey.
- A urine sample was obtained via the PUC and then a DOAC Dipstick[®] was immersed in it for 2-3 seconds (Fig.1). Afterward, DOAC Dipstick[®] was evaluated on DOASENSE Reader[®], with results available in 11 minutes (Fig.2).
- The next treatment was determined by the result of the test while

Fig.2: Evaluation of the DOAC Dipstick[®] on device DOASENSE Reader[®]

CONCLUSION

DOAC Dipstick[®] represents a fast and simple

 The result can be read with the naked eye by a healthcare professional or by using a selfautomatic photometric reader (DOASENSE Reader[®]).



following Guidelines of AHA/ASA¹

RESULTS

- Between 15 May 2020 and 15 May 2021, 302 patients were admitted at the Emergency department with the diagnosis of a stroke, 29 of them with an unknown medical history.
- On those patients the DOAC Dipstick[®] test was performed (Fig. 3).
- The test was negative in 18 (62%) patients, 11 (38%) patients were positive for the presence of a DOAC.
- THR (test for Dabigatran) was positive in 7 patients and FXA (test for Xa inhibitors) in 5 patients (Fig. 4).

- screening test for the presence of DOACs in urine
- Stroke patients with an unknown medical history often use DOACs
- The result of DOAC Dipstick[®] test is important for the correct management of a stroke patient with an unknown medical history

Fig.3: Patients with stroke at the Emergency Department



Fig.1: Immersion of the DOAC Dipstick[®] into urine

 One patient had positivity of THR and FXA simultaneously. This finding was finally explained by his medical history

 he recently switched from dabigatran to apixaban.



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Conflict of interest and financial support:

The project was supported by MEDISTA s r.o. and Specific University Research provided by MSMT (MUNI/A/1058/2019, MUNI/A/1091/2020).

Fig.4: Patients with unknown medical history - results of DOAC's screening

