

The Norwegian Microemboli in Acute Stroke Study - Methods

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The Norwegian Microemboli in Acute Stroke Study

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Background

- The cause of ischemic stroke is unknown in 25-40% of cases, despite extensive diagnostic investigations
- Most of these cryptogenic strokes are thought to be embolic, even in the absence of a definite embolic source
- Circulating microemboli (CME) imply active embolization with increased risk of recurrent stroke
- Transcranial Doppler monitoring (TCDM) is a non-invasive method for detecting CME in vivo
- TCDM may clarify stroke etiology and evaluate the effect of antithrombotic treatment
- New equipment enables prolonged and repeated monitoring with less patient discomfort
- We aim to assess the usefulness of prolonged, ambulatory TCDM in acute stroke diagnostics

Methods

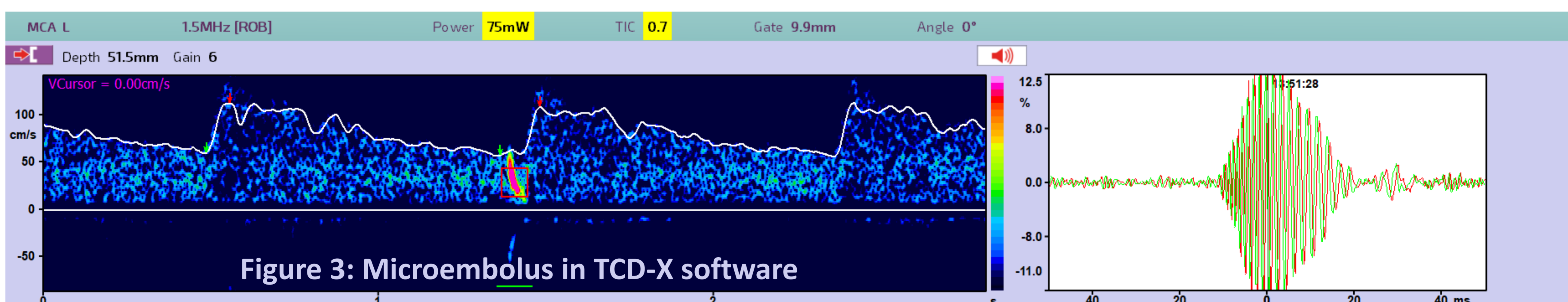
- Prospective, non-randomized observational study of unselected patients with acute ischemic stroke or TIA
- Patients >18 years admitted <24 hours after stroke onset
- All stroke sub-types, severities and vascular distributions; adequate temporal bone window
- Stationary bilateral TCDM (Sonara[®], Natus) of the middle cerebral arteries for one hour
- Ambulatory unilateral TCDM (TCD-X[®], Atys medical) on the symptomatic side for two hours
- Unilateral TCDM is repeated 18-36 hours and 48-72 hours after stroke onset
- Diagnostic stroke work-up following Standard Operating Procedures

Figure 1: Study-specific assessments (TCDM)



Figure 2: Diagnostic stroke work-up

- Clinical examination with NIHSS and mRS
- Blood tests
- CT + CTA on admission
- MRI + TOF MRA after 18-36 hours
- Ultrasound of neck and brain arteries
- Cardiac testing: ECG, Holter-ECG, TTE/TEE
- Outpatient visit after three months



Endpoints and project plan

- Prevalence and persistence of CME, MR DWI lesions and recurrence of stroke/TIA at three months and one year
- Patient enrollment started in June 2018 and will last for approximately two years
- 25 patients are included by May 2019

1) <https://neuro.natus.com/user/login?destination=/products-services/sonara-tcd-system> 2) <http://www.medicaexpo.com/prod/atys-medical/product-67683-551361.html>