prove useful as a surrogate marker for cerebrovascular disease and help to assess stroke risk. Retinal arteriovenous ratios (AVRs) have been shown to indicate risk of stroke, but the association between retinal vasoreactivity, ischemic stroke, and cerebrovascular function remains unknown. Retinal vasoreactivity assessments may detect early stages of endothelial dysfunction and allow direct assessment of blood vessel physiology.

Objective: To examine

1) retinal microvessel behavior in patients with ischemic stroke

2) the relationship between retinal and cerebral vascular reactivity.

Methods: Cohort study of 12 patients with ischemic stroke presenting 3^{+} months after the stroke, and 8 healthy controls (44–85 years). Retinal vasoreactivity was measured with the dynamic vessel analyzer following flicker light stimulation. Middle cerebral artery (MCA) vasoreactivity following hyperventilation/breathhold was measured using transcranial Doppler ultrasound. AVRs were obtained using funduscopic photographs.

Results: Patients with stroke had significantly attenuated retinal venous ($p = <0.0002$, CI 95%) and arterial ($p = 0.001$, CI 95%) vasodilation responses compared to healthy controls, and decreased cerebral vasoreactivity following hyperventilation/breath hold ($p = 0.0068$, CI 95%). Across all groups an attenuated venous flicker response was associated with an increase in MCA RI ($r = -0.5$, $p = 0.03$, CI 95%) and PI ($r = -0.5$, $p = 0.04$, CI 95%) and a decrease of MCA vasoreactivity ($r = 0.46$, $p = 0.05$, CI 95%).

Conclusion: In this study impairment of retinal microvascular function is associated with ischemic stroke and measures of cerebrovascular function. Microvascular dysfunction of retinal blood vessels may predict ischemic stroke risk.

doi:10.1016/j.jns.2013.07.768

Abstract — WCN 2013
No: 1072
Topic: 3 — Stroke
"Mobile Stroke Unit" for stroke treatment at the emergency site

S. Walter[a], P. Kostopoulos[a], A. Ragoschke-Schumm[a], A. Haass[a], I. Grundwald[b], W. Reith[c], K. Fassbender[a]. [a]*Neurology, University Hospital of the Saarland, Homburg, Germany;* [b]*Acute Vascular Imaging Centre, John Radcliffe Hospital, Oxford, UK;* [c]*Diagnostic and Interventional Neuroradiology, University Hospital of the Saarland, Homburg, Germany*

Background: Currently only 2–5% of all acute stroke patients receive thrombolytic therapy due to delay in hospital arrival or diagnostic work-up. In this feasibility study, we tested the efficacy of a new approach of stroke diagnosis and treatment starting at the emergency site, rather than after hospital arrival, in reducing delay in stroke therapy.

Methods: We constructed a "Mobile Stroke Unit", an ambulance that delivers imaging, point-of-care-laboratory analysis, and neurological expertise directly at the emergency site. In a prospective, randomised single-centre trial, we compared the time from alarm (emergency call) to therapy decision, between Mobile Stroke Unit (MSU) and standard stroke hospital intervention.

Results: As prespecified the trial was stopped after a planned interim analysis at 100 of 200 patients because the primary endpoint showed a clear superiority of the MSU treated group.

Prehospital stroke treatment reduced the median time from alarm to therapy decision substantially to 35 min (IQR 31–39) in the MSU group versus 76 min (63–94) in the hospital control group ($p < 0.0001$). We also detected similar gains regarding times from alarm to end of the different diagnostic steps, although there was no substantial difference in the number of patients who received intravenous thrombolysis or in neurological outcome. Safety endpoints seemed similar across the groups.

Conclusions: This first trial demonstrates feasibility of prehospital diagnostic stroke work-up and treatment, with substantially reduced time until therapy decision.

doi:10.1016/j.jns.2013.07.769

Abstract — WCN 2013
No: 1283
Topic: 3 — Stroke
Ipidacrine for post-stroke cognitive impairment

L.V. Pustokhanova, E.M. Morozova. *Department of Neurology, Perm Academy of Medicine, Perm, Russia*

Objective: To determine cognitive status and to assess efficacy of ipidacrine in post-stroke patients.

Methods: Ipidacrine (neiromidin) is a nonselective inhibitor of acetylcholinesterase and butyrylcholinesterase. The drug was prescribed to 43 patients (aged 33–75, 26 males, 17 females) one month after the first hemispheric ischemic stroke. Patients received ipidacrine in increasing dosages from 10 to 60 mg during 2 months. Clinical and neuropsychological investigation with the use of NIHSS, Barthel index (BI), MMSE, FAB, attention test (AT), semantic verbal fluency test (SVFT), phonetic verbal fluency test (PVFT) was carried out twice: at the baseline and 2 months after. Control group consisted of 35 persons without stroke.

Results: The data differences in patients and control group were fixed in MMSE (26.51 ± 3.06 and 28.71 ± 1.07, $p = 0.0001$), FAB (12.74 ± 2.97 and 16.40 ± 1.74, $p = 0.0000$), SVFT (15.79 ± 5.32 and 21.03 ± 5.79, $p = 0.0002$), PVFT (7.16 ± 3.60 and 12.76 ± 4.52, $p = 0.0000$), and AT (99.53 ± 42.06 and 64.80 ± 18.95 s, $p = 0.0000$) one month after stroke. A statistically significant improvement of NIHSS (4.42 ± 2.69 and 2.70 ± 2.01, $p = 0.0001$) and BI (95.35 ± 10.60 and 98.84 ± 4.06, $p = 0.0074$) was observed during treatment. Neuropsychological reinvestigation demonstrated that MMSE (28.16 ± 2.33, $p = 0.0000$), FAB (15.05 ± 2.61, $p = 0.0000$), SVFT (19.40 ± 5.76, $p = 0.0000$), PVFT (8.35 ± 3.62, $p = 0.0063$) and AT (83.79 ± 30.11, $p = 0.0017$) significantly increased and differences with control group in MMSE and SVFT disappeared.

Conclusion: Post-stroke cognitive impairment reflecting decrease of frontal functions, verbal fluency and attention was identified. A statistically significant regress of neurological and cognitive deficiency was revealed during ipidacrine treatment. The distinct positive dynamics of executive function, attention, verbal fluency and general mental activity were observed. The drug was well tolerable.

doi:10.1016/j.jns.2013.07.770

Abstract — WCN 2013
No: 1291
Topic: 3 — Stroke
How to use verbal autopsy to study stroke incidence in developing countries

S. Aidi[a], S. Bellamine[a], M. Yahyaoui[b], I. Slassi[c], F. Mourji[d], M. El Alaoui Faris[b], Group Study of Stroke in Morocco. [a]*Neurology, Rabat, Morocco;* [b]*University Mohamed V Souissi, Rabat, Morocco;* [c]*Hassan II University Hospital, Morocco;* [d]*Hassan II University, Casablanca, Morocco*

It is well recognized that good quality population-based studies are the most reliable source of information about stroke incidence on a population level but identifying all new stroke in a population is particularly challenging. However, those criteria may be not practical for stroke studies undertaken in developing countries, where most strokes occur and resources are limited.