

anaesthesia with dual platelet inhibition. An individual combination of balloon angioplasty and stent deployment was used.

**Results:** A total of 35 patients and 36 occlusions treated between 2007 and 2014 were evaluated. Treatment indications were acute clinical symptoms in 21/35 (60%) patients. Target vessels were ICA (n = 5), MCA (n = 2), VA (n = 13), BA (n = 7) or a combination thereof (n = 9). The attempted vessel reconstruction was achieved in 32/36 (88.8%) procedures. Clinical improvement was confirmed in 30 patients (83.3%), two of them despite failed attempt. At follow-up, permanent neurological deficit was encountered in 16 patients. Four patients died, one as a consequence to the procedure.

**Conclusion:** Haemodynamic compromise of the dependent circulation is a possible reason for the endovascular reconstruction of extra- and intracranial vessels in the status of subacute or chronic occlusion. The procedure can be quite demanding (e.g., for basilar and MCA reconstruction). Long-term dual anti-aggregation, angiographic follow-up and treatment of in-stent re-stenoses are part of the concept. Clinical results reach from considerable improvement to major morbidity and procedural mortality.

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Stroke 2

**Temporal trends of intravenous thrombolysis in acute ischemic stroke patients at a tertiary care center in northern India**

D. Khurana<sup>a</sup>, B. Das<sup>a</sup>, N. Khandelwal<sup>b</sup>, A. Kumar<sup>a</sup>, V. Lal<sup>a</sup>, S. Prabhakar<sup>a</sup>. <sup>a</sup>Neurology, Postgraduate Institute of Medical Education and Research, Chandigarh, India; <sup>b</sup>Radiodiagnosis, Postgraduate Institute of Medical Education and Research, Chandigarh, India

**Background:** Acute ischemic stroke (AIS) is chiefly time dependent treatable cause of morbidity and mortality. Despite increasing stroke incidence in developing countries, increasing stroke thrombolysis rates have not been documented.

**Aims:** To determine trends in patient characteristics and rates of tPA use in AIS patients in a tertiary care center in northern India.

**Methods:** All AIS patients presenting within 8 h of symptoms onset from 2010–2014 were enrolled from hospital stroke registry and analyzed for various measures of IV thrombolysis.

**Results:** 608 AIS patients presented within 8 h of symptoms onset. Out of 608 patients, 157 (25.82%) patients received intravenous thrombolysis (IVT) with r-tPA. Patient's onset-to-door time was ≤2 h in 58.60%, ≤3 h in 25.48% and ≤4.5 h in 15.29%. A substantial change in onset-to-door time and IVT was seen over 4 years. IVT rates in ≤2 h of symptom onset increased from 22.2% to 25% and in ≤3 h increased from 38.89% to 43.75%. Door-to-CT time (median 25 versus 14 min, P = 0.027) and door-to-needle time (median 75 versus 62 min, P = 0.011) improved, with 64.5% of tPA-treated patients getting imaged ≤25 min after arrival. Post IVT, hemorrhage was noticed in 17 (10.82%) patients. Median NIHSS at presentation was 12 while favorable mRS (0–2) at 3 months was seen in 48.85%.

**Conclusions:** Encouraging trends of increasing rates of IV tPA use along with improving quality in thrombolysis over the years is seen in a public sector hospital. This may be indicative of increasing use of IV tPA in developing countries like India.

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Stroke 2

**Cerebrolysin and recovery after stroke (CARS 2): a randomized, placebo-controlled, double-blind, multicenter clinical study**

A. Guekht<sup>a</sup>, D. Heiss<sup>b</sup>, E. Gusev<sup>c</sup>, J. Vester<sup>d</sup>, E. Doppler<sup>e</sup>, D. Muresanu<sup>f</sup>. <sup>a</sup>Neuropsychiatry, Moscow Research and Clinical Center for Neuropsychiatry, Moscow, Russia; <sup>b</sup>Neurology, Max Planck Institute for Neurological Research, Cologne, Germany; <sup>c</sup>Neurology Neurosurgery and Genetics, Russian National Research Medical University, Moscow, Russia; <sup>d</sup>Data Analysis and Study Planning, IDV Data Analysis and Study Planning, Krailling, Germany; <sup>e</sup>R&D, EVER Neuro Pharma GmbH, Unterach, Austria; <sup>f</sup>Medicine and Pharmacy, Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania

**Background:** Cerebrolysin was successful in experimental models of cerebral ischemia and showed beneficial effects in clinical trials in acute stroke; a significant persistent effect was demonstrated in one large prospective, randomized, double-blind multicenter study (CARS 1).

**Objective:** To analyze the efficacy and safety of Cerebrolysin in recovery after stroke in the large prospective, randomized, double-blind, placebo-controlled, multicenter and parallel-group trial; study design was similar to CARS1.

**Patients and methods:** The study compared the effects of 30 ml Cerebrolysin versus placebo during early rehabilitation after stroke. Primary endpoint was the action research arm test (ARAT) score on day 90. Secondary, gait velocity, fine motor function, global neurological status, disability, quality of life, neglect, and depression were evaluated. **Results:** 240 (120 vs. 120) patients were screened, enrolled, randomized, and treated in 15 study centers in Russia. 231 (114 vs. 117) patients completed the study period; only 9 patients discontinued the study prematurely.

Neither the primary ARAT score nor the secondary outcome measures showed a significant treatment difference on day 90; as the mild baseline levels of impairment resulted in good recovery after 90 days also in the placebo.

Evaluation of vital signs and the global assessment of tolerability did not reveal clinically relevant changes both in the study course and between the treatment groups. Laboratory tests and vital signs did not show any abnormalities.

**Conclusion:** This study did not confirm the findings of the study CARS1, which showed a large effect size of Cerebrolysin as compared to Placebo. Cerebrolysin was well tolerated.

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Stroke 2

**Perception on stroke risk factors and warning symptoms among the stroke survivors and recurrence**

K. Das<sup>a</sup>, C. Nag<sup>b</sup>, M.K. Ghosh<sup>a</sup>. <sup>a</sup>Neurology, Burdwan Medical College, Burdwan, India; <sup>b</sup>General Medicine, Midnapore Medical College, Midnapore, India

**Background:** Poor perception on stroke risk factors, warning symptoms, lack of continuity of secondary preventive measures is important etiological factors for recurrence of stroke.

**Objective:** The study aimed to search the inter-relationship between perception of stroke among stroke survivors and related recurrence.

**Patients and methods:** 1540 stroke survivors [M = 900, 59 ± 2 years; F = 640, 58 ± 2 years; ischemic 882 (57.27%); hemorrhagic 658

(42.73%)] were followed up at 8 weeks intervals for 1 year and enquired on educational tires, economical status, types of stroke, disability status and stroke risk factors. Perception on stroke was acquainted with relation to naming the organ involvement, risk factors; warning symptoms presented by the patient and need for continuing secondary preventive treatment.

**Results:** Poor perception on stroke in respect to organ involvement, risk factors, warning symptoms, preventive measures, and socio-economic status were responsible for discontinuity of secondary preventive treatment ( $P = < 0.001$ ). Discontinued patients had poor control of risk factors in relation to hypertension, diabetes, hyperlipidemia, smoking, alcoholism, peripheral or cardio-vascular disorder and low hemoglobin level ( $P = < 0.001$ ). Significant relationship have been observed between discontinuation of secondary preventive treatment and enhancement of disability, recurrence and mortality ( $P = < 0.001$ ).

**Conclusion:** Knowledge on stroke, risk factors, warning symptoms, preventive aspects are to be strengthened globally to reduce recurrence of rate, disability status, mortality and forecasting preventive measures through different mass media and to be intimated to national and international health planning authority for better outcome of stroke patient are preventive measures.

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Stroke 2

**Low social support and risk of arterial hypertension and stroke in female population aged 25–64 years in Russia: Population-based MONICA-psychosocial study**

V. Gafarov, D. Panov, E. Gromova, I. Gagulin, A. Gafarova. *Collaborative Laboratory of Cardiovascular Diseases Epidemiology, FSBI Institute of Internal and Preventive Medicine, Novosibirsk, Russia*

**Objective:** To explore the influence of social support (SS) on relative risk of an arterial hypertension (AH) and stroke in female population of 25–64 y over 16 years in Russia.

**Material and methods:** Under the third screening of the WHO “MONICA-psychosocial” program random representative sample of women aged 25–64 y ( $n = 870$ ) were surveyed in Novosibirsk. Berkman–Syme test was used to measure indices of close contacts (ICC) and social network (SNI). From 1995 to 2010 women were followed for 16 y for AH and stroke incidence.

**Results:** The prevalence of low SS in women aged 25–64 y was 57% and 77.7% for low ICC and low SNI, respectively.

HR of AH over the first 5 years was 2.01-fold higher (95.0% CI: 1.025–3.938;  $p < 0.05$ ) in women with low ICC compared to those with higher levels of ICC. Over 10 y HR was 1.93 (95.0% CI: 1.138–3.261;  $p < 0.05$ ) and it was 1.42 (95.0% CI: 1.138–3.261;  $p < 0.05$ ) over 16 y follow-up in persons with low ICC. HR of AH in women with low SNI were 1.88 ( $p < 0.05$ ) and 1.58 ( $p < 0.01$ ) for 10 and 16 years, respectively. Risk of stroke over 16 y of follow-up was 4.1

( $p < 0.05$ ) in women with low ICC, and 2.7 ( $p < 0.05$ ) in those with low SNI compared women with higher SS levels. Manual workers and married ones with low ICC and SNI had higher rates of AH stroke ( $p$  for all  $< 0.05$ ).

**Conclusion:** There is high prevalence of low SS in Russian women aged 25–64 y. Low SS significantly increases risks of AH and stroke especially in married women in manual occupational class.

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Stroke 2

**Territory of coronary artery and potential cardioembolic stroke**

Y. Kim<sup>a</sup>, T.J. Kim<sup>b</sup>, J.B. Park<sup>c</sup>, S.M. Lee<sup>c</sup>, Y.J. Kim<sup>c</sup>, S. Jung<sup>d</sup>, S.H. Lee<sup>b</sup>.  
<sup>a</sup>Department of Neurology, The Catholic University of Korea, Bucheon, St. Mary's Hospital, Gyeonggi-do, Republic of Korea; <sup>b</sup>Department of Neurology, Seoul National University Hospital, Seoul, Republic of Korea; <sup>c</sup>Department of Cardiology, Seoul National University Hospital, Seoul, Republic of Korea; <sup>d</sup>Department of Neurology, Hallym University Medical Center, Seoul, Republic of Korea

**Abstract**

**Background:** Considering high mortality and recurrent stroke risks of cardioembolic stroke, detecting sources of embolism is important for optimizing treatment for potential cardioembolic stroke (PCS). We propose that different patterns of regional wall motion abnormality (RWMA) may provoke imbalance of heart contractility and may affect on PCS. Therefore, the aim of this study was to evaluate the territorial impact of RWMA on PCS.

**Methods:** We classified the patients into 2 groups: PCS and non-PCS. We classified the patient's RWMA into 3 major arterial territories based on the standard 17-segment model of TTE findings at the acute stroke period.

**Results:** Among a total of 1858 patients, 621 (33.4%) had PCS. Patients with PCS were more likely to have larger left ventricular internal dimension at diastole, larger left ventricular internal dimension at systole, reduced left ventricular ejection fractions, larger left atrial sizes, reduced mitral deceleration time, increased E/A ratios and regional wall motion abnormality, aortic valve disease, mitral valve disease. After adjusting for multiple clinical and TTE parameters including AF, binary logistic regression demonstrated that RWMA of LAD had a significant predictive value for PCS (OR 4.15, 95% CI: 1.81–9.51,  $p < 0.01$ ).

**Conclusion:** In conclusion, we suggest that RWMA of LAD was a significant predictor for PCS. The RWMA of LAD seems to have hemodynamic significance for cardiac wall perfusion in cardiac side. However, considering the risk of PCS in brain side, it might be needed to plan more aggressive treatment for lesion of LAD than for those of non-LAD arteries.

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