

2019/2020

**Status Report on the
European Master in Stroke
Medicine Programme
At the Danube University Krems,
Austria**



An educational project of the European Stroke Organisation (ESO)

Endorsed by the World Stroke Organisation (WSO)



Sponsorships: an unconditional educational grant to this programme by EVER Pharma is gratefully acknowledged

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The European Master in Stroke Medicine is highly appreciated by physicians all over the world.

Currently the seventh course has done the fourth module in November 2020, because of the COVID-19 pandemic we were forced to postpone the module from April 2020 to November. This last module was held fully online via Zoom.

1. European Master's course in Stroke Medicine Steering Committee



Marie-Germaine Bousser, Paris, F

Michael Brainin (Chair), Krems, A

Laszlo Csiba, Debrecen, H

Jose Ferro, Lisboa, P

Werner Hacke, Heidelberg, GER

Wolf-Dieter Heiss (Chair), Köln, GER



Markku Kaste, Helsinki, FIN

Kennedy Lees, Glasgow, UK

Didier Leys, Lille, F

Bo Norrving, Lund, SWE

Heinrich Mattle, Bern, CH

Valeria Caso, Perugia, It

2. Scientific Chairpersons:

Prof. Michael Brainin

Professor Brainin is since 2005 full Professor of Clinical Neurology at the Danube University in Krems, Austria, and Director and Chair of the Department of Clinical Neurosciences and Prevention.

Professor Brainin was President of the European Stroke Organisation (ESO) and is International Fellow of the American Stroke Association.

He is President elect of the World Stroke Organisation due to take office 2018. He is an Individual Board Member of the European Academy of Neurology.

He serves as Associate Editor for the European Journal and Neurology, Senior Consulting Editor for 'Stroke' and serves on the Editorial Boards of the International Journal of Stroke', Neuroepidemiology, the Journal of Neurological Sciences and the European Stroke Journal.

Prof. Dr. Wolf-Dieter Heiss

Prof. Heiss was appointed as Director at the Max Planck Institute for Neurological Research in 1981. 1985 – 2005 he was Professor of neurology and Chairman of the Department of Neurology of the University of Cologne and Director of the Department of General Neurology at the MPI in Cologne.

He was President of the International Stroke Society 1992-96, was on the Board of Directors of the Society for Cerebral Blood Flow and Metabolism, Deputy Editor of the Journal of Cerebral Blood Flow and Metabolism and Associate Editor of the Journal of Nuclear Medicine and Section Editor of Stroke.

3. General Overview

Programme Name	European Master in Stroke Medicine	Total ECTS:	120 ECTS	Award Abbreviation:	MSc
Duration:	5 semesters part-time (4 semesters on-campus)				
Fees and Charges:	12.000 Euro				

About this programme

This programme has been developed by the steering group of European Stroke Organisation (ESO) to cover the needs for academic medical speciality training in stroke medicine throughout Europe. It aims at medical doctors, including neurologists, geriatricians and other subspecialties as well as medical doctors in training for such specialist areas.

The European Master in Stroke Medicine has a focus on all fields of stroke ranging from acute diagnosis and interventions to rehabilitation and principles of neural repair. In addition, an expert research focus is maintained throughout all lectures and seminars, thus covering all aspects of basic and clinical research.

While some parts of this programme can be achieved by distance learning, four full weeks of lectures are planned on-site at the Danube-University in Krems, Austria. Structured as a part-time programme two full on-site weeks of lectures and seminars will be held per academic year.

Practical experiences will be gained at established stroke centers throughout Europe with a practicum totalling 4 weeks of hands-on experience.

Entry into the European Master in Stroke Medicine requires students to have completed a medical Doctor-degree or to be in medical training.

The programme is designed for five semesters. Four semesters are held on-campus; the fifth semester should be used to complete the Master thesis.

The four modules comprise lectures and seminars from the following topics:

Pathophysiology of Cerebral Circulation
Experimental Stroke: models and therapy
Experimental Stroke: pathophysiology
Neuropathology
Experimental and Basics
Neurosonology
Neuroimaging and Neuroradiology
Epidemiology and genetics of risk factors
Stroke Syndromes
Acute Interventions Guidelines, Trials and Applications
Thrombolysis
Thrombectomy and Neurosurgical Interventions
Stroke Units and Monitoring
Complications and Concomitant Diseases
Infections in Stroke Patients
Intracerebral Hemorrhage, AVM, SAH
Intensive Care
Behavioural Neurology of Stroke
Stroke and Dementia
Neurorehabilitation
Brain stimulation, Robotics and Team Work
Community Rehabilitation

The off-campus exercise units are composed of study time, exam preparation and distance learning. The World Stroke Academy and other online tutorials will support the programme by providing electronic lectures available through its website.

The on-site lectures are divided into four modules. The 4 modules of the “European Master in Stroke Medicine” will be held on the following dates for the 7th course:

Module 1: 22nd October 2018- 27th October 2018

Module 2: 1st April 2019 - 6th April 2019

Module 3: 14th October 2019 - 19th October 2019

Module 4: ~~20th April 2020 – 25th April 2020~~ → postponed to 9th – 14th November 2020 due to Covid-19

To be eligible for the award of the European Master in Stroke Medicine (MSc), a student must acquire 120 ECTS as prescribed below:

- Participation in four modules:

- Imaging and pathophysiology
- Clinical epidemiology and prevention
- Diagnostics' and syndromes
- Therapeutic strategies and neurorehabilitation
- Three written exams
- Oral exam
- Master thesis
- Practicum
- 30 eCME-points
 - 15 by completing online tutorial questionnaires and exams.
 - 15 CME points by attending International Stroke Conferences

4. Some facts about the 7th course:

The 7th course started in October 2018 with 27 students. 25 students had their first semester and first module; the other 2 were from the former course and had to participate for their last module. Also in this course we have a big variety of different countries of origin.

The first module was evaluated very well and the students were happy to be part of it.

A „Get-Together” was organised by the course coordinators at the „Heurigen Hamböck” with traditional Austrian food. This programme was very much enjoyed by the participants.

In the first module we had the opportunity to meet Prof. Eva Schernhammer for her special lecture „Methods and Vascular Endpoints in the Nurses and Womens Helath Study.”

The second module took place on 1st April 2019 - 6th April 2019.

The third module 14th October 2019 - 19th October 2019.

9th to 14th November 2020 the fourth and final module took place online via Zoom. In this module the students had a workshop offered by Medtronic during the sessions of Prof. Schroth. Some of the students mentioned that this was one of their best experiences during the studies.

Now the participants of the 7th course are working on their master thesis and other requirements to gain the Master degree and will soon do their final exam and defence.

5. Stipends:

Stipends have generously been granted by ESO, WSO, Everpharma. In addition, unconditional support for this programme is granted by Everpharma.

ESO Stipends of the 7th course:

2018:

- Arslan Yildiz € 6.000
Izmir Tepecik education and research hospital, Turkey
- Henriques Goja Marta € 6.000
Centro Hospitalar Leiria, Portugal
- Sagris Dimitrios € 6.000
University hospital of Larissa, Greece

2019:

- Karlis George € 6.000
General Hospital of Rhodes, Greece
- Joseph Fenil € 6.000
Worcester Royal Hospital, UK
- Zuurbier Susanna € 6.000
Academic Medical Center Amsterdam

6. „Section Leaders” of the 7th course

Prof. Dr. Wolf-Dieter Heiss, Cologne, Germany
Prof. Dr. Dr. h.c. Michael Brainin, Krems, Austria
Univ. Doz. Dr. Monika Bradl, Vienna, Austria
Prof. Dr. Lazlo Csiba, PhD, Debrecen, Hungary
Prof. Dr. Patrik Michel, Lausanne, Switzerland
Prof. Jaakko Tuomilehto, MD PhD, Krems, Austria
Prof. Dr. Achim Kaasch, Germany
Prof. Dr. Natan Bornstein, Tel Aviv
Prof. Dr. Hans Christoph Diener, Duisburg-Essen, Germany
Prof. Dr. Thorsten Steiner, Frankfurt, Germany
Prof. Dr. Peter Ringleb, Germany
Prof. Dr. Gabriel Rinkel, Utrecht, Netherlands
Univ.-Prof. Dr. Claudia Stöllberger, Vienna, Austria
Prof. Dr. Wilfried Lang, Vienna, Austria
Prof. Lara Caeiro, Lisboa, Portugal
Prof. Isabel Martins, Port, Portugal
Prof. Didier Leys, Lille, France
Prof. Katharina Sunnerhagen, Gothenburg, Sweden
Prof. Turgut Tatlisumak, Helsinki, Finland

Prof. Dr. Michaela Pinter, Krems, Austria
Prof. Dr. Jan Mehrholz, Kreischa, Germany

7. Special Lectures:

Module 1:

On the occasion of the postgraduate ESO European Master in Stroke Medicine (MSc) programme we would like to invite you to an open Special Lecture.

*Prof. Michael Brainin and Prof. Wolf-Dieter Heiss
for the ESO Faculty*

Special Lecture

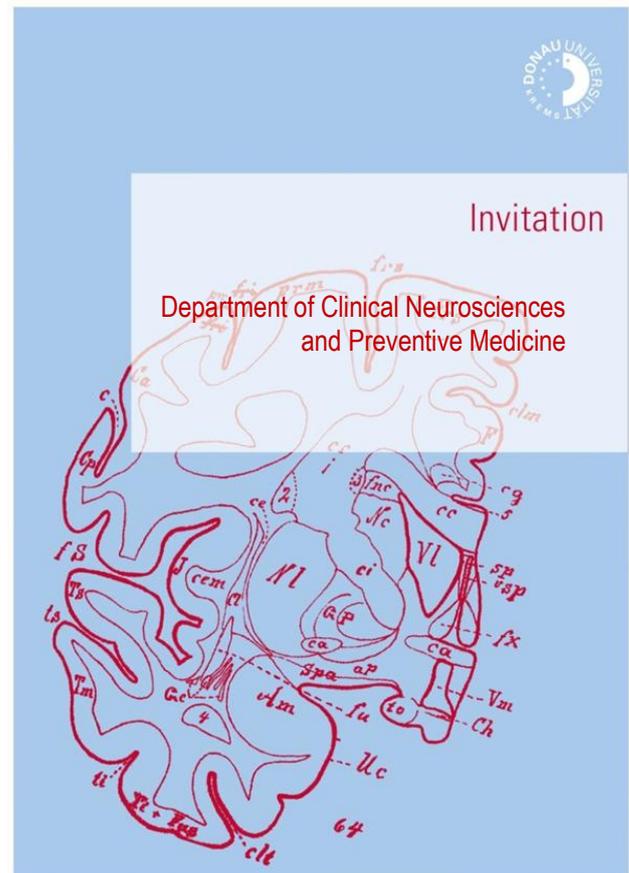
„Methods and Vascular Endpoints in the Nurses and Womens Health Study“

Prof. Eva Schernhammer
*Medizinische Universität Wien
Zentrum für Public Health
Abteilung für Epidemiologie*

*Thursday, October 25th 2018
17:00 – 18:15*

*Hall: 3.6
Donau-Universität Krems
Dr.-Karl-Dorrek Str. 30,
3500 Krems, Austria*

1 DFP Fortbildungspunkt (Neurologie) genehmigt



Module 2

On the occasion of the postgraduate ESO European Master in Stroke Medicine (MSc) programme we would like to invite you to an open Special Lecture.

Prof. Michael Brainin and Prof. Wolf-Dieter Heiss

for the ESO Faculty

Special Lecture

„ Stroke Genetics: Discovery, Biology, and Clinical Applications?

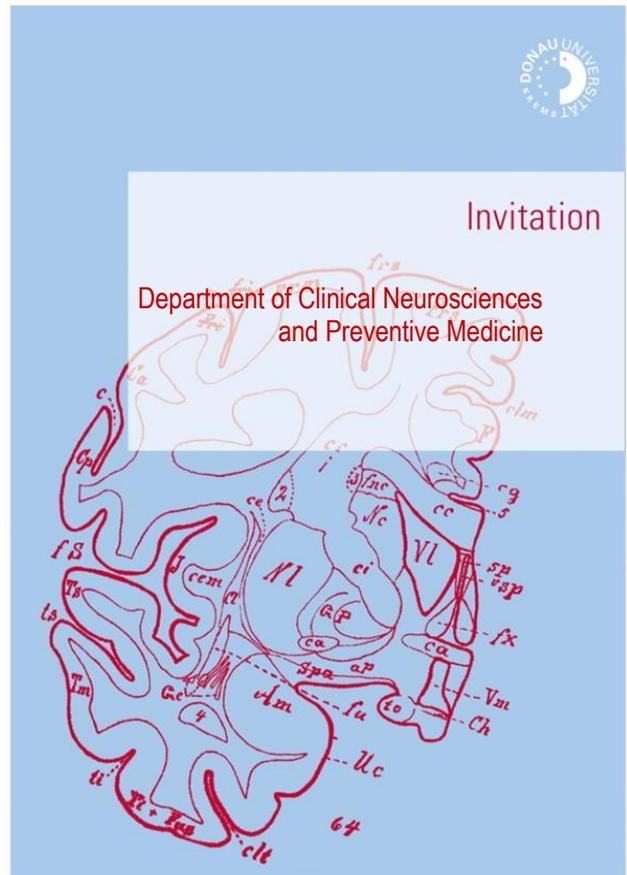
Prof. Dr. med. Martin Dichgans

*Direktor, Institut für Schlaganfall- und Demenzforschung (ISD)
Klinikum der Universität München, Germany*

*Wednesday, October 16th 2019
15:15-16:30*

*Hall: 1.1
Donau-Universität Krems
Dr.-Karl-Dorrek Str. 30,
3500 Krems, Austria*

1 DFP Fortbildungspunkt (Neurologie) genehmigt.



8. Brief information about the programme:



**European Master
in Stroke Medicine, MSc**

Postgraduate Master Programme
Master of Science | 5 semesters, part time

Danube University Krems, Austria
www.donau-uni.ac.at/neuro/masterprogramme

An educational project of the **ESO** Endorsed by **World Stroke Organization**

**DONAU UNIVERSITÄT
KREMS**

This programme was developed by the European Stroke Organisation (ESO) and is endorsed by the World Stroke Organisation (WSO) for academic medical speciality training in Stroke Medicine. The Master-student will receive specialized scientific and practical knowledge of stroke medicine at the cutting edge. The programme will enable you to study the stroke burden in your country and apply scientific study methods. At the conclusion of this course you will have up-to-date knowledge in the fields of "Imaging and Pathophysiology", "Clinical Epidemiology and Prevention", "Diagnostics and Syndromes" and "Therapeutic Strategies and Neurorehabilitation" taught by renowned European Experts. Additionally you will get practical experience in ESO certified stroke centers and centers of excellence in Europe. Currently, the "European Master in Stroke Medicine" is attended by doctors from more than 20 different countries around the world.



Venue

Danube University Krems, Austria

Facts

5 semesters
> 4x1 week on-site lectures in Krems/Austria
> 2x2 weeks of supervised practice in ESO certified stroke units and centers of excellence in Europe

Dates

Published at the course website

Faculty

Acknowledged leaders and experts from Europe

Target group

Medical specialists and doctors in training with special interest in stroke

Tuition fee

EUR 12.000,-

Scholarship

Scholarships are available.
Please check the course website.

Chairmen

> Prof. Wolf-Dieter Heiss
> Prof. Michael Brainin

Supported by

> European Stroke Organisation
> World Stroke Organisation
> Danube-University Krems

Unconditional educational grant

> EVER Neuro Pharma
> Böhlinger Ingelheim

Contact

strokemedicine@donau-uni.ac.at

Course website for further information

www.donau-uni.ac.at/neuro/masterprogramme

9. Poster-presentation ESOC 2016 Barcelona:

THE EUROPEAN MASTER IN STROKE MEDICINE

BACKGROUND OF APPLICANTS AND IMPACT ON THE PROFESSIONAL CAREER

O. Nerg

Kuopio University Hospital,
Neurology, Kuopio, Finland

J. Calleja

Nacional de Neurología y Neurocirugía
Manuel Velasco Suárez, Stroke Clinic, México City, Mexico

A. Hansen

Bispebjerg Hospital, Neurology,
Copenhagen, Denmark

D.M. Stanca

University of Medicine and Pharmacy "Iuliu Hatieganu",
Neuroscience, Cluj-Napoca, Romania

J. Fernández-Ferro

Rey Juan Carlos University Hospital,
Neurology, Madrid, Spain

M.E. Collantes

Philippine General Hospital,
Neurology, Manila, Philippines

H. Hashim

Rashid Hospital, Neurology,
Dubai, United Arab Emirates

P. Ylikotila

Turku University Hospital,
Neurology, Turku, Finland

L.H. Abdelnour

Norfolk and Norwich Hospital,
Acute Medical Unit, Norwich, United Kingdom

S. De Blauwe

AZ St-Jan Brugge-Oostende AV,
Neurology, Brugge, Belgium

Y. Imam

Hamad Medical Corporation,
Neuroscience Institute- Neurology, Doha, Qatar

W.D. Heiss

University of Cologne, Max Planck Institute
for Neurological Research, Cologne, Germany

A. Abdul-Rahim

University of Glasgow, Cardiovascular and
Medical Sciences, Glasgow, United Kingdom

A. Fromm

Haukeland University Hospital,
Neurology, Bergen, Norway

N. Logallo

Haukeland University Hospital, Neurology,
Bergen, Norway

M. Brainin

Danube University Krems, Clinical Neuroscience and
Preventive Medicine, Krems, Austria

M. Barboza

Hospital Dr. Rafael A. Calderón Guardia,
Neurosciences, San José, Costa Rica

M. Garro

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Neurology, San José, Costa Rica

N. Soultanian

Shahid Beheshti University of Medical Sciences,
Functional neurosurgery research center,
Tehran, Iran

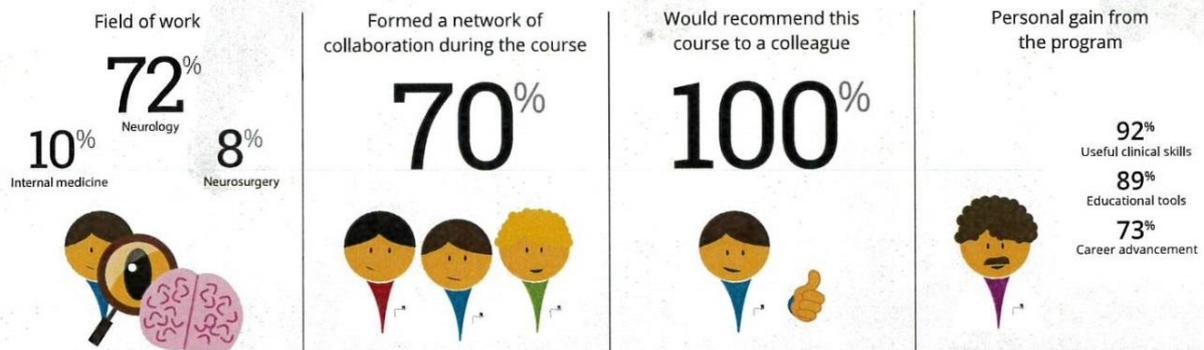
Background

The European Master in Stroke Medicine (EMSM) is a postgraduate programme which covers all areas of cerebrovascular diseases and is provided by a faculty of leading European experts. The program is organized by the ESO and endorsed by the WSO. Currently on its fifth intake, the programme aims to establish evidence-based knowledge standards of stroke diagnosis and therapy. The course was designed for physicians from around the world to gain knowledge and scientific skills in stroke medicine and to promote networking opportunities. We investigated the background of the programme's participants and its impact on their careers.

Method

After a literature search an online questionnaire-based survey was designed. All present and past participants were invited to participate. The questionnaire was divided into four sections; demographics, background, personal impact and progression beyond the programme. Past graduates were asked to answer all sections, while current participants answered the first two.

A total of 76 students from 22 countries around the world were contacted with a response rate of 51%



Participants of the EMSM programme reported a number of benefits to their clinical practice and career opportunities. The multinational student network offers a platform for future collaboration in the field of stroke

10. List of 92 Mastertheses as of October 2019:

No.	Title	first name	last name
92	Recanalization rates and outcome in patients with ongoing anticoagulation and large vessel occlusion acute ischemic stroke undergoing endovascular mechanical thrombectomy	Hedvig	Abrahamson
91	Comparison of hemorrhagic transformation in patient with anterior and posterior ischemic stroke	Awini	Barwari
90	Patient selection using perfusion imaging for thrombectomy - a single center retrospective study	Ossi Matti	Nerg
89	Incidence, Clinical Features and Outcomes of Atrial Fibrillation- related Stroke in Qatar	Yahia	Imam
88	Treatment of intracranial blister like aneurysms	Guilherme	Brasileiro de Aguiar
87	Risk Scores for predicting Stroke Associated Pneumonia; Validity of A2DS2 and ISAN scores	Heba	Elhasin
86	Prehospital management of patients with suspected cerebrovascular diseases, admitted to Department of Neurology and Cerebrovascular Disorders, Poznan University of medical sciences	Natalia	Andrzejewska
85	HLA and killer cell immunoglobulinlike receptor (KIRs) genotyping and CD28 null peripheral percentage in patients with acute ischemic stroke	Antonino	Tuttolomondo
84	From Nephrons to Neurons: Stroke Risk in Chronic Kidney Disease	Dearbhla	Kelly
83	Frequency, predictors and outcome of palliative management in acute ischemic patients in a stroke center	Raphaela	Hausammann
82	Relationships between sleep-disordered breathing and clinical outcomes in Finnish ischemic stroke patients	Tuuli-Maria	Haula
81	Embolitic Stroke of undetermined source in the young	Nicolas	Martinez-Majander
80	Sun, Sand, Sea and Stroke: Stroke research trends and geographic disparities among Caribbean countries	Kesava	Mandalaneni
79	Master thesis by research *title asked for by mail	Miriam	Heldner
78	National Institutes of Health Stroke Scale (NIHSS) Score as a predictor of intracranial Aneurysms in acute ischemic stroke patients	Yaping	Yang
77	Features of cerebral small-vessel disease and the association with longterm outcome on ischemic stroke patients	Gerli	Sibolt
76	Management of acute stroke under new oral anticoagulants	Jan Christoph	Purrucker
75	Characterisation of patients with missing outcome data in acute stroke trials	Jose Carlos	Fernandez Ferro
74	Neurological symptoms from reperfusion after carotid artery revascularization: beyond the hyperperfusion syndrome	Montserrat	Gonzales Deglado
73	Cognitive function and atherosclerosis in the elderly	Josefina	Fletcher
72	The safety and treatment outcomes of low-dose intravenous Alteplase for ischemic strokes with extend window from 3 to 4.5 hours	Duy Ton	Mai

71	Door-to-needle time less than 15 minutes: optimizing in-hospital delays in stroke thrombolysis	Pauli	Ylikotila
70	Generalized arterial disease in young and middle-aged ischemic stroke	Annette	Fromm
69	Tenecteplase in acute ischemic stroke	Nicola	Logallo
68	Digital Post-Stroke Follow-up Clinic to improve secondary prevention of stroke and other cardiovascular diseases after stroke and TIS-Review of literature, service design of the digital follow-up clinic and clinical trial protocol	Petra	Ijäs
67	Progressing towards prehospital acute stroke using prehospital stroke scales	Carmen	Garcia Cabo Fernandez
66	Sex differences in acute spontaneous intracerebral	Andreas	Hansen
65	Hospital readmissions after spontaneous intracerebral haemorrhage in Southern Portugal	Hipolito	Nzwalo
64	Stroke in the Philippines: Burden, Barriers, Strategies	Maria Epifania	Collantes
63	Functional Neurological Disorder Mimicking Stroke: Current Practice and Future Care Pathway	Loay Hasan	Abdelnour
62	Association of E670G, R218S and F216L polymorphisms from the protein convertase Subtilisin/Kexin Type 9 (PCSK9) in atherosclerotic ischemic stroke in two Latin American populations	Miguel A.	Barboza
61	Clinical predictors of outcomes of cerebellar ischaemic stroke	Paul	Igoh
60	Demographic and risk factors profile of stroke patient in Dubai in comparison with the European patients with stroke. An observation from SITS registry	Hashim	Husnain
59	Developing a standard national stroke registry: critical analysis and the systematic review of factors affecting the quality of stroke registries in Nigeria	Umar Abba	Mohammed
58	National Institutes of Health Stroke Scale (NIHSS) Item Profiles as a Predictor of Patient Outcome: External Validation using independent Trial and Registry Data	Abdul-Rahim	Azmil
57	External Validation using Independent Trial and Registry Data	Hametner	Christian
56	Genetic small vessel diseases of the Brain- An update with focus on CADASIL and COL4A1/2 related diseases	Bence	Gunda
55	Cerebral white matter lesions seen on CT scan of acute ischemic stroke patients treated with intravenous thrombolysis are associated with increased rates of intracerebral hemorrhage and worse outcomes	Sami	Curtze
54	Surviving cardiac arrest: the neurological and functional outcome and health-related quality of life one year later	Marjaana	Tianen
53	Carotid Artery Stenosis in Indonesian Stroke Patients (CASISP Registry)	Mohammad	Kurniawan
52	Hemorrhagic transformation of acute ischemic stroke: clinical predictors, influence of acute stroke therapy, and functional outcome	Liliana Isabel	Encarnacao Pereira
51	Extended validation of the ASTRAL score and review of the score's development	Vasileios	Papavasileiou
50	Comorbidity indexes in acute ischemic stroke: Prevalence and predictive value in the Acute Stroke Registry and Analysis of Lausanne (ASTRAL)	Nikolaos	Kakaletsis
49	Comparison of right and left cerebral hemisphere thrombolysis	Mark	Massyn

48	Neurogenesis in the adult brain after ischemic stroke: a clinical and radiological pilot study	Manuela	De Michele
47	Multivariate Prediction of Treatment success after Endovascular Revascularisation in Acute Ischemic Stroke	Anselm	Angermaier
46	INCIDENCE OF FIRST AND RECURRENT STROKE AND ETHNIC DIFFERENCES IN STROKE PATTERN IN BRADFORD: BRADFORD STROKE STUDY	Hawraman	Ramadan
45	Public Screening for detection of Atrial Fibrillation	Karl	Boyle
44	Prognostic value of sST2 in patients with acute ischemic stroke – Results of the Linz Stroke Unit (LISU) Study	Christof	Bocksrucker
43	Selected publications in top journals	Marek	Sykora
42	Reducing door to needle time in acute ischemic stroke thrombolysis	Daniel	Strbian
41	Follow-up CRP and not admission CRP is an independent predictor for outcome at 3 months in thrombolized acute stroke patients	Andrea	Rocco
40	Searching for Explanations for Cryptogenic Stroke in the Young: Revealing the Etiology, Triggers, and Outcome (SECRETO). Design of the Study Protocol	Jukka	Putala
39	Metabolic syndrome and the risk of cerebral venous and sinus thrombosis: a case-control study	Saadatnia	Mohammad
38	Selected publications in top journals	Jennifer	Diedler
37	Gender influence on clinical outcomes after I.V. thrombolysis for acute ischemic stroke	Anne	Falcou
36	Thrombolysis following Ischemic Stroke in Patients with Atrial Fibrillation	Eva	Holfeld
35	Floating arterial thrombus in 35 consecutive ischemic strokes: A comparative study of etiology, course, treatment and outcome	Joumana	Janbieh
34	Impact of telemedicine on the screening process for cerebral fibrinolysis. Analysis of two hospitals embedded in the stroke network of Eastern Switzerland.	Martin	Liesch
33	Treatment in acute ischemic stroke: reasons for exclusion of patients from thrombolysis	Tilman	Reiff
32	Subtypes of stroke in metabolic syndrome	Cristina	Tiu
31	Blood pressure change and outcome in acute ischemic stroke: The association with baseline values, prior hypertensive disease, prior use of antihypertensive and stroke etiology	Gerogios	Ntaios
30	Determination of the best time window to measure NT-proBNP – a biomarker of cardioembolic stroke	Ana Catarina	Gaspar Fonseca
29	Predictors and accuracy of abnormal CT perfusion in acute ischemic stroke	Nuno Miguel	Oliveira Inácio
28	A replication study confirming NINJ2 and CELSR1 genes as risk factors for ischemic stroke in a Portuguese sample	Liliana de Fatima	Olim Gouveia
27	Neurorehabilitation in Stroke Medicine	Sylvan	Albert
26	Vitamin supplementation in stroke prevention: a systemic review	Ralph	Weber
25	Medical Treatment and Door to Knife Time in Carotid Endarterectomy	Tiina Riitta	Sairanen

24	Influence of Nimodipine and intraventricular rtPA on cerebral vasospasm in intracerebral haemorrhage with intraventricular extension	Jens Ulrich	Regula
23	Stroke in Women- Oral Contraception, Pregnancy, and Hormone Replacement Therapy	Kirsi	Rantanen
22	Cervical Artery Dissections in Tampere University Hospital. During seven months follow-up period in 2010	Anna-Kaisa	Parkkila
21	Outcome by Stroke Etiology in Patients Receiving Thrombolytic Treatment	Satu Marjatta	Mustanoja
20	Stroke and TIA in young and middle aged adults - The North Dublin Population Stroke Study	Aine	Merwick
19	“Natural history” of NIHSS-defined subgroups in the North Dublin Population Stroke Study	Michael	Marnane
18	Prevalence of sleep apnea syndrome inpatients with cryptogenic stroke and patent foramen ovale	Silvia	Tur
17	Post stroke functional out come in relation to risk factors	Khalid	Alshamsi
16	Glycosylated Haemoglobin A1 (HbA1c) as a prognostic factor for thrombolysis-associated cerebral haemorrhage in acute stroke	Eric	Jüttler
15	A retrospective study in 5 of Khartoum teaching tertiary hospitals	Osman	Mukhtar
14	Hemodynamic and Embolic Characteristics of Carotid Stenosis: Correlation with Ischemic Lesion Patterns on MRI	Christophe	Bonvin,
13	Risk Factors and Outcome in Ischemic Stroke Patients under age 45: a hospital based study	Sophia	Vassilopoulou
12	Study of the particularities of vascular risk factors in the Romanian subgroup of REACH Registry	Sorin	Tuta,
11	Examining the external validity of the ABCD scores in a population based cohort of Transient Ischaemic Attack	Orla	Sheehan,
10	Thrombolysis, Stroke Units, and Interventional Radiology in Acute Ischaemic Stroke: Bayesian and Frequentist Analyses	Kilian	O’Rourke
9	Stroke Awareness Trends in The Republic of Ireland	Henry	Onyegbule
8	Introduction of special reimbursement for ischemic stroke and TIA secondary preventive medication in Finland - a cost-effectiveness study	Atte	Meretoja
7	Intima media thickness, carotid plaques and CADASIL: prospective cohort study of 155 patients	Jerome	Mawet
6	A randomized controlled trial of alteplase (rt-PA) vs standard treatment in acute ischemic hemispheric stroke in patients aged more than 80 years where thrombolysis is initiated within 3 hours after stroke onset.	Svetlana	Lorenzao
5	VKORC1 and Anticoagulation for Cerebrovascular Disease	Christoph	Lichy
4	Pilot prospective, blinded, randomized case-control study of early verticalization in acute ischemic stroke patients using Erigo tilt-table	Maxim	Domashenko
3	A Novel Management tool, A Review & Proposal for a Telestroke Network	Paul	Crowley
2	Progressive Stroke	Evelyne	Beyer

1	Clinical-radiological-pathological correlations of leukoaraiosis	Eithan	Auriel
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