ISCSL 2024

3rd International Stroke Conference Sri Lanka

In collaboration with

Asia Pacific Stroke Organization

Conference book

14th of June 2024

Galadari Hotel Colombo,

Sri Lanka


ASIA
PACIFIC
STROKE
ORGANISATION


NATIONAL STROKE ASSOCIATION OF SRI LANKA


Association of
Sri Lankan
Neurologists

PROGRAM

08.00 - 08.30	Registration	
08.30 - 08.45	Welcome speech President NSASL	Dr Gamini Pathirana
	Address by President APSO	Prof N V Ramani
	Address by President WSO	Prof Sheila Martins
08.45 - 09.15	Tenecteplase in stroke	Prof Mark Parsons
09.15 - 09.45	Intravenous thrombolysis in special situations	Prof Jeyaraj Pandian
09.45 - 10.15	Emerging stroke risk factors	Prof N V Ramani
10.15 - 10.45	Acute stroke imaging and treatment decision making	Prof Vivek Gupta
10.45 - 11.15	Tea	
11.15 - 11.45	Small Vessel Disease in the brain 'through eyes'	Prof Sheila Crewther
11.45 - 12.15	Embolic Stroke of Uncertain Source and Atrial Myopathy	Prof Mark Parsons
12.15 - 12.45	Management of intra cerebral haemorrhage	Prof Sheila Martins
12.45 - 13.15	Infections and stroke	Prof Tissa Wijeratne
13.15 - 14.15	Lunch	
14.15 - 14.45	Intracranial atherosclerosis	Prof N V Ramani
14.45 - 15.15	Endovascular therapies in acute stroke	Prof Vivek Gupta
15.15 - 15.45	Artificial Intelligence in stroke management	Prof Saman Halgamuge
15.45 - 16.45	Stroke quiz	Dr A T Alibhoy
16.45 - 17.00	Tea	

Content

National Stroke Association of Sri Lanka

The National Stroke Association of Sri Lanka (NSASL) was founded by a group of professionals dedicated to improving stroke care in the country. Led by Founder President Dr. Jagath Wijesekera, Senior Consultant Neurologist at the Institute of Neurology and Stroke Unit of the National Hospital of Sri Lanka (NHSL), The group included senior medical specialists and prominent corporate sector members. Alongside enhancing hospital-based stroke care, there was an increasing need to raise stroke awareness and involve the public in prevention efforts. The NSASL was launched on 14th January 2001 with these two primary objectives. Over the past two decades, the association has conducted nationwide public awareness campaigns on stroke prevention through stroke walks, meetings at workplaces, schools, clubs, professional associations, and programs via print, electronic, and social media. This includes brochures, newsletters, audio and video messages, telefilms, and stage and street dramas. The NSASL also regularly organises educational symposia and workshops on acute stroke management and rehabilitation for all healthcare professionals involved in stroke care across the country. In collaboration with the Ministry of Health, Ministry of Social Services, and other allied professional medical organisations, the NSASL has worked to reduce the burden of stroke through prevention, improved care, and better outcomes post-stroke. The association hosted the first-ever Asia Pacific Stroke Conference in 2011, which was highly successful under the leadership of Dr. Padma Gunaratne as co-chair. To mark its 20th anniversary, the NSASL held the Inaugural International Stroke Conference and Stroke Rehabilitation Workshop in collaboration with the Asia Pacific Stroke Organization in September 2021. The 2nd International Stroke Conference followed in March 2023. The NSASL expresses gratitude for the dedication and hard work of all past presidents and council members, which has enabled the association to thrive over the last two decades.

Dr. Gamini Pathirana
President NSASL

Executive Committee

Patron	Dr. J.B. Peiris - Patron
Vice Patrons	Dr. Jagath Wijesekera (Founder president)
	Mr. Rienzie Wijetilleke (Past president)
Pesident	Dr. Gamini Pathirana
Vice Presidents	Mr. Upali de Silva
	Dr. Darshana Sirisena
	Mr. Ravi Dias
Secretary	Dr. M Saamir Mohideen
Assistant Secretary	Dr Anomali Vidanagamage
Treasurer	Mrs. Cryshanthi Thambiah
Joint Editors	Prof. Thashi Chang
	Dr. Manjula Caldera
Committee member	Dr. Padma Gunaratne
	Dr. M.T.M. Riffsy
	Prof. Udaya Ranawaka
	Mr. Tissa Bandaranayake
	Dr. Vijith Kannangara
	Mrs. Anjali Gurusinhe
	Dr. Dinushi Bakmeewewa
	Dr. Shyaman Mahapitiya
	Dr. Ajantha Keshawaraj
	Mrs. Pubudu de Zoysa
	Dr. Surangi Somarathne
Immediate Past President	Dr Harsha Gunasekara

Message from the president
National Stroke Association of Sri Lanka

Dr Gamini Pathirana

On behalf of the National Stroke Association of Sri Lanka (NSASL), I am delighted to welcome you to the 3rd International Stroke Conference Sri Lanka (ISCSL) 2024.

This conference is a significant achievement made possible by NSASL in collaboration with the Asia Pacific Stroke Organisation (APSO). I am deeply grateful to APSO for their unwavering support. Their endorsement of this meeting, together with promotion on their website, contribution by visiting professor program and the invitation extended to sister associations in the region, has been instrumental in bringing success to the meeting.

I also extend my heartfelt gratitude to the esteemed speakers who have journeyed from afar to share their expertise with our regional colleagues. Your willingness to contribute to knowledge exchange will undoubtedly elevate stroke care across Sri Lanka and the Asia Pacific.

With great excitement, I announce that the ISCSL will become an annual event, further solidifying Sri Lanka's commitment to stroke care with improved patient outcomes.

Furthermore, on a note of immense pride, I am thrilled to share that Colombo will be the host city for the APSO annual meeting in the year 2026. We eagerly look forward to welcoming the entire Asia Pacific stroke community to Sri Lanka!

I would like to express my sincere gratitude to several individuals whose tireless contributions were instrumental in making ISCSL 2024 a success. They include Drs. Shanika, Akhila, Nishani, Praveena, Dharmasiri and Indrachapa.I also extend my appreciation to our dedicated unit medical officers and the entire NSASL 2024 Executive Committee, not forgetting Dhammika, for her invaluable support.

Furthermore, I acknowledge the role of our organising partners, Ajith, Asela, and Ranga, whose efforts were essential. Finally, a heartfelt thank to our generous sponsors and the dedicated staff at the Galadari and Kingsbury Hotels, who contributed significantly to the event's success.

Finally let me thank you for joining us in this momentous occasion. I trust that ISCSL 2024 will be a platform for enriching discussions, fostering valuable collaborations, and ultimately, advancing stroke care in our region.

Message from the president
World Stroke Organization

Prof. Sheila Martins

The treatment of acute hemorrhagic stroke was revolutionized with the introduction of a new management approach. The primary objective is to stabilize the patient, control bleeding, and prevent complications. Rapid neuroimaging, typically with a CT scan, is essential for diagnosis and assessing the extent of hemorrhage.

The bundle of care for hemorrhagic stroke, as validated in the Interact3 Clinical trial and outlined in the 2023 publication, changes the clinical outcomes and should be implemented in all stroke centers. Initial management involves airway protection, blood pressure control, and reversal of anticoagulation if the patient is using anticoagulants. Critical supportive actions include managing glucose, temperature, and oxygen saturation, while monitoring for complications like seizures, dysphagia, and deep vein thrombosis. Reversing anticoagulation for prior users is vital, employing effective new agents. Enhanced ICU monitoring ensures prompt intervention, significantly improving prognosis.

Surgical intervention may be required in certain cases, particularly when there is significant hematoma expansion, brainstem compression, or elevated intracranial pressure. Procedures can include hemicraniectomy, where part of the skull is removed to alleviate pressure, or minimally invasive approaches like stereotactic aspiration or endoscopic evacuation of the hematoma.

Rehabilitation should begin early to optimize recovery, involving a multidisciplinary team approach. This includes physical, occupational, and speech therapy to address the functional deficits resulting from the stroke.

Overall, the acute management of hemorrhagic stroke requires a multidisciplinary approach, rapid diagnostic and therapeutic interventions, and comprehensive supportive care to improve outcomes.

Message from the president
Asia Pacific Stroke organisation

Prof. N Venketasubramanian Ramani

It is with great pleasure that I write this message on the occasion of the Sri Lanka Stroke Conference (SLSC 2024), organised by the National Stroke Association of Sri Lanka (NSASL), held on 14th of June 2024.

Stroke is a major cause of death and disability globally, with significant medical, social and economic impacts. Despite the difficulties that Sri Lanka has had to grapple with, it has continued to provide a high level of stroke care, a testament to the tremendous responsiveness, resilience and dedication by all those involved in the prevention, management and long-term care for stroke in this country.

The Asia Pacific Stroke Organisation (APSO) was established in 1999 by the coming together of 2 large regional organisations – the Asia Pacific Congress Against Stroke (APCAS) and the Asian Stroke Forum (ASF) in Cairns, Australia. APSO currently has 20 member societies. Among the pillar activities of APSO has been Continuing Medical Education, with the flagship activity being the annual Asia Pacific Stroke Conference (APSC). The inaugural APSC was held in Colombo, Sri Lanka in 2011, superbly organized by the NSASL, that set the standard for all the APSCs that followed.

NSASL has continued to be a strong supporter of APSO, for which we are truly grateful. APSO has been able to fund APSO Visiting Professors as faculty in the wonderful conferences organised by NSASL, such as this one. I have no doubt that SLSC 2024 will be a tremendous success.

On behalf of APSO, I congratulate and wish NSASL a very successful conference, and all attendees an extremely memorable and fruitful experience.

Message from the president
Association of Sri Lankan Neurologists

Prof. Saraji Wijesekara

It is with great pleasure I send this message, on behalf of the neurology fraternity of Sri Lanka, to the international stroke conference Sri Lanka 2024 (ISCSL 2024) in collaboration with the Asia Pacific Stroke Organization.

The program for this year encompasses all the aspects of stroke care delivered by world-renowned experts in the field. I take this opportunity to congratulate Dr Gamini Pathirana, the president of the National Stroke Association of Sri Lanka (NSASL), and his energetic organizing committee who has put an enormous effort and worked tirelessly to make this event a success.

I am assured that the event would undoubtedly help to update the knowledge in management and prevention of stroke which is one of the leading causes of death and disability in the world.

I am confident that the membership of the ASN, and the trainees of relevant disciplines would use this opportunity to broaden their knowledge and more importantly apply it in their day-to-day practice to improve the quality of life in patients with stroke

Message from secretary
National Stroke Association of Sri Lanka

Dr M Saamir Mohideen

As the Secretary of the National Stroke Association of Sri Lanka, it is my honour to send this message to mark the International Stroke Conference. This gathering of experts, researchers, and practitioners is instrumental in shaping the landscape of stroke care in Sri Lanka.

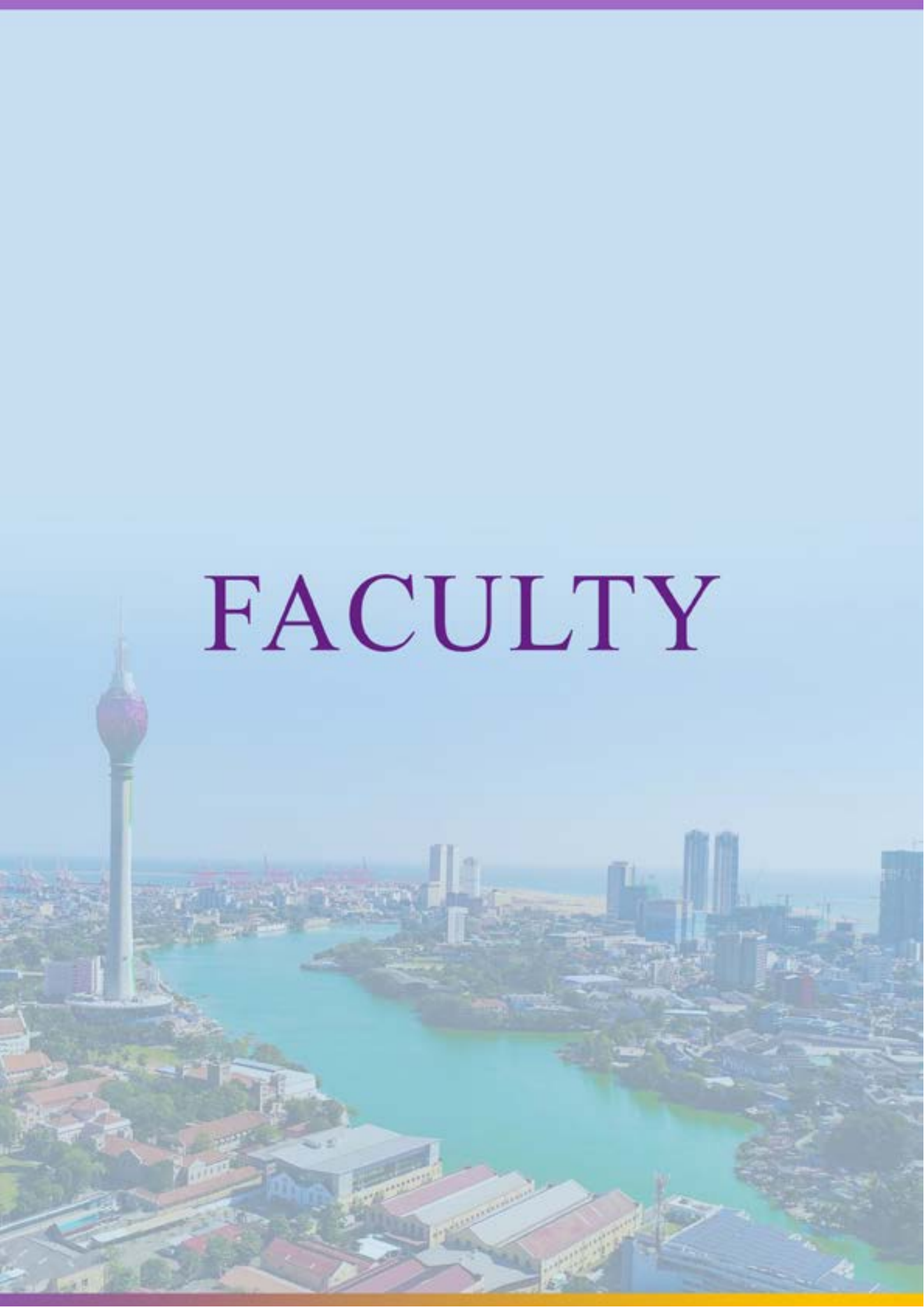
The National Stroke Association of Sri Lanka is committed to advancing stroke care through advocacy, education, and research initiatives. Our mission is to reduce the incidence of stroke and improve outcomes for stroke survivors. Through collaborative efforts with healthcare professionals, policymakers, and communities, we strive to create a future where strokes are preventable, treatable, and survivable.

In recent years, there have been notable advancements in stroke care that deserve recognition and further exploration. From ground-breaking research on acute interventions to innovative rehabilitation strategies, the field of stroke care is constantly evolving. Our association actively supports and promotes these advancements to ensure that they reach individuals affected by stroke across the nation.

At this year's International Stroke Conference, we celebrate the progress made in stroke prevention, treatment, and recovery. We applaud the dedication of healthcare professionals who work tirelessly to improve outcomes for stroke patients. Through sharing knowledge, best practices, and innovative approaches, we move closer to our shared goal of a world free from the devastating effects of stroke.

As the Secretary of the National Stroke Association of Sri Lanka, I wish the international speakers, local organising committee and all attendees a successful conference.

FACULTY



Faculty

Prof. Jeyaraj Durai Pandian

Dr Jeyaraj D Pandian is a Professor and Head of Neurology and the Principal/Dean from Christian Medical College (CMC), Ludhiana, Punjab, India. Dr Pandian is the current President Elect of World Stroke Organization and Past President of Indian Stroke Association.

Dr Pandian was conferred the WSO Global stroke services award in 2020 for his contributions to the field of stroke. He received Careers360 national award for research and best teacher in 2023. He also received the Sitaram Jaipuria National award for Medical Excellence and Research in 2023.

Dr Pandian has made significant contributions to stroke care services, epidemiology, and thrombolysis in low and middle-income countries. He is the National PI for the Indian Stroke Clinical Trial Network (INSTRuCT). He has 266 peer-reviewed publications (Citations 175148, h-index 69, i10 index-149).

Faculty

Prof. Mark Parsons

Professor Parsons is an internationally recognised Neurologist and leader in Stroke Medicine, and a highly sought-after speaker, instructor and mentor, both nationally and internationally, in all aspects of clinical Neuroscience. He moved to Sydney in 2020 as SHARP Professor of Medicine and Neurology at UNSW South Western Sydney Clinical School, Liverpool Hospital, and The Ingham Institute for Applied Medical Research. At The Ingham Institute for Applied Medical Research he has also established a new centre and leads a new Stroke and Neuroscience research team there – the Sydney Brain Centre @ The Ingham Institute. He is also Clinical Dean of UNSW South Western Sydney Medical School. He was previously the Royal Melbourne Hospital Professorial Chair of Neurology, Faculty of Medicine, Dentistry and Health Sciences, University of Melbourne, and the Director of the Department of Neurology, Royal Melbourne Hospital. He is also a Conjoint Professor of Neurology at University of Newcastle. He also is a Visiting Professor at Fudan University, Shanghai and LPU in India.

He is an international leader in Stroke clinical trials, and brain imaging. He has published in all major neurology specialty journals, as well as the highest impact general clinical journals, despite heavy clinical and administrative workloads. He is recognised by his peers nationally and internationally as one of the leading mid-career clinician neuroscientists in the world, evidenced by >400 articles in peer reviewed journals (h index 91), and >100 speaking invitations and session chairs at international conferences, and >100 at national meetings. He has been the Chair of Organising Committees for >20 National and International Stroke Conferences. He has been an immediate past president of the Stroke Society of Australasia and has chaired the Australasian Stroke Trials Network. He has attracted over $50m to support his research program during the past five years, and is currently leading two major NHMRC-funded ($4 million and $2.75 million respectively) phase III randomised trials of Tenecteplase across 50 centres internationally (TASTE and ETERNAL). As a result of these career achievements he was elected in 2019 as a Fellow to the prestigious Australian Academy of Health and Medical Scientists (FAHMS).

Faculty

Prof NV Ramani

Dr NV Ramani is a neurologist at the Raffles Neuroscience Centre, Raffles Hospital, Singapore, and an Adjunct Professor, Department of Medicine, Yong Loo Lin School of Medicine, National University of Singapore. He is an executive committee member of local and international committees, including President of the Asia Pacific Stroke Organisation, Chairman of the Asian Stroke Advisory Panel and founding pro-tem chair of the Singapore National Stroke Association. He is an editorial board member and reviewer for several peer-reviewed journals.

His research interests and publications are in stroke, neurosonology, dementia, neuroepidemiology and clinical trials, with 430 publications listed in Pubmed.

Faculty

Prof. Sheila Gillard Crewther

SGC began her studies at Melbourne University with a double major in Zoology & Psychology, Hons and MSc in Comparative Pharmacology/ Physiology underAutonomic Nervous System Expert Prof Geoffrey Burnstock. She completed her PhD in Behavioural & Molecular Neuroscience at Caltech under Nobel Prize Winner Professor Roger Sperry.

SGC is currently leader of a very active multidisciplinary laboratory studying the behavioural, cognitive and molecular neuroscience associated with environmental effects on vision, and neurodevelopmental and neurodegenerative anomalies in humans and animal models. SGC has published widely with over 400 peer reviewed publications, >7,600 citations, a h-index of 47 and i10 index of 168. SGC has professional qualifications in Neuropsych, Optometry and Education. Most recently, SGC has revisited her early interest in the molecular bases of environmentally driven vision and brain disorders in young and older individuals. She has graduated ~ 50 PhD students of whom many hold senior and junior academic and research positions in Australia and Internationally with another 12 in the last 2 years. The aim of her research is to understand and design better therapeutic and behavioural management regimes for neurological disorders such as stroke, Parkinson's Disease, Migraine and Post COVID Neurological Syndrome and neurodevelopmental anomalies including dyslexia and ASD, myopia, amblyopia.

Faculty

Prof. Sheila Cristina Ouriques Martins

Sheila Martins is graduated in Medicine (Universidade Federal do Rio Grande do Sul- UFRGS), has Residence in Neurology, Master in Science in Internal Medicine in UFRGS, PhD in Stroke Neurology and specialisation in organisation of public health networks by the Ministry of Health (MOH) of Brazil. She is the founder and President of the Brazilian Stroke Network. In 2008, as advisor of the MOH, started the organisation of the National Stroke Policy published in 2012. With large experience in clinical trials, in 2020, published in New England Journal a Brazilian MOH sponsored clinical trial of thrombectomy in stroke in public hospitals, the first study proving that the treatment is feasible, effective and cost-effective in developing countries. This study changed the national stroke policy. In 2021 started the implementation of a World Stroke Organization (WSO) program together with the MOH: primary prevention for stroke based on a polypill associated with lifestyle modification. She has large experience in clinical trials applied to public health changing public policies and also as health manager working together with different levels of governments, helping the implementation of stroke care in several countries.
She is the World Stroke Organization board of directors member since 2008 and since October 2022 she is the World Stroke Organization President .

Faculty

Prof. Tissa Wijeratne

Prof. Tissa Wijeratne's extraordinary contributions to brain health and global neurological education and his exemplary leadership within the realm of young neurologists were acknowledged when he received the inaugural Ted Munsat Award from the World Federation of Neurology in 2017. Furthermore, in 2019, he achieved finalist status for the Stroke Champion Award bestowed by the National Stroke Foundation. He also received the inaugural Priscilla Kincaid-Smith Award from the Australian Medical Association (AMA) for his outstanding work as an academic neurologist, mentor, and advocate. He was the 2020 Global Viste Advocate of the Year, AAN for his outstanding contributions in brain health advocacy.

His remarkable expertise extends to international publication and public speaking, as evidenced by his extensive translational research in clinical neurology, which has yielded more than 350 publications and over 200 invitations to present at international forums. With an impressive count of over 110,000 citations, his work underscores his profound impact on the field (h-index = 80). Notably, he played a pivotal role in the founding of the Australian and New Zealand Headache Society, collaborating closely with four colleagues. He also spearheaded the initiation of the James Lance-Peter Goadsby Annual Migraine Oration and Symposium in 2018, and the Australian Institute of Migraine in 2022 (first national headache centre in Australia),launched the Steps4migraine campaign in 2023, further advancing the landscape of headache care and research. As of 2023, he holds the distinction of being the most highly cited practising Headache Neurologist in Australia according to Scopus. He holds the same claims from Scopus for Covid-19 and Neurological involvement with over 40 highly cited manuscripts to his credit. He is the current President, Asian Regional Consortium for Headaches. He was awarded with a prestigious Medal of the Order of Australia (OAM) during Australia Day, 2023 ,for his enormous services to medicine as a neurologist. Most of All, Tissa is an ardent friend of Asia Oceania and global neurology . He Co-Founded the world brain day with his colleagues at the WFN in 2013 with a profound and unmatched impact on brain health as a concept worldwide.

Faculty

Prof. Vivek Gupta

Professor Vivek Gupta currently serves as the Additional Director of Fortis Hospital Mohali, India. He brings a wealth of experience having previously held positions as Professor at PGIMER Chandigarh and Professor and Head of Radiology and Interventional Neuroradiology at Amrita Institute of Medical Sciences, Faridabad Campus. Dr. Gupta holds an MD and DM in Neuroimaging and Interventional Neuroradiology, and has authored a distinguished record of 80 publications and 12 book chapters.

He is actively involved in the field through his memberships in prestigious international organisations like the American Society of Neuroradiology and the World Federation of Interventional and Therapeutic Neuroradiology, as well as national societies such as the Indian Society of Neuroradiology.

Faculty

Prof. Saman Halgamuge

Prof Saman Halgamuge, Fellow of IEEE, IET and AAIA received the B.Sc. Engineering degree from the University of Moratuwa, Sri Lanka, and the Dipl.-Ing and Ph.D. degrees in data engineering from the Technical University of Darmstadt, Germany. He is currently a Professor of The University of Melbourne. He is listed as a top 2% most cited researcher for AI and Image Processing in the Stanford database.

He supervised 50 PhD students and 16 postdocs on AI and health in Australia to completion. His research is funded by Australian Research Council, National Health and Medical Research Council, US DoD Biomedical Research program and international industry.

His previous leadership roles include Head, School of Engineering at Australian National University and Associate Dean of the Engineering and IT Faculty of University of Melbourne. In Sri Lanka, he serves as a visiting DVC at SLIIT and was recently elected as a Fellow of NASSL. Previously, he held the Prof V. K. Samaranayake endowed visiting Chair of Computing at University Colombo and was a visiting Professor of Engineering at University of Peradeniya.

Faculty

Dr. A. T. Alibhoy

Dr. A. T. Alibhoy is a Board Certified Consultant Neurologist in Colombo, Sri Lanka. He obtained his MBBS in 1992 and MD (Medicine) in 1998 from the University of Colombo, Sri Lanka.

He received his overseas training at the Royal London Hospital & St. Bartholomew's Hospital in London, UK. He was awarded Fellowship of the Royal College of Physicians, London and Fellowship of the Ceylon College of Physicians in 2016.

He is a Past President of the Association of Srilankan Neurologists and the current President of the Movement Disorders Society of Sri Lanka. He has special clinical interest in Movement disorders and Neuro-ophthalmology.

ABSTRACTS

OF

PLENARY LECTURES AND SYMPOSIA

Tenecteplase in stroke

Prof. Mark Parsons

Multiple randomised trials presented recently at the European Stroke Organisation Conference (ESOC) 2024 have bolstered the case that tenecteplase (TNK) is an effective—if not preferred—alternative to alteplase for patients with acute ischemic stroke who require IV thrombolysis.

Two trials—TASTE and ORIGINAL—provide additional evidence for treatment within the first 4.5 hours after stroke onset, with TRACE-III indicating that tenecteplase can improve functional outcomes among patients who present beyond that time point and don't have ready access to endovascular thrombectomy.

These new trials join several previous ones—including AcT and TRACE-2—showing that tenecteplase provides clinical outcomes that are at least as good as those obtained with alteplase, the longtime standard of care for stroke thrombolysis, in patients with moderate-to-severe acute ischemic strokes. But tenecteplase, a molecular cousin of alteplase, brings with it some advantages, including greater fibrin specificity and a longer half-life, which allows for more convenient administration as a single bolus rather than delivery as a 1-hour infusion.

Taking all this data into account, for treatment within the first 4.5 hours after stroke onset, the chapter is closed now on the first-choice thrombolytic. It should be tenecteplase.

For the late treatment window, however, there is still esearch to be done before there is complete practice change. The TIMELESS trial failed to show a significant benefit of tenecteplase in the late window, but most patients ultimately were treated with mechanical thrombectomy, and relatively shortly after receiving IV thrombolysis. TRACE-III, on the other hand, focused on patients who didn't have timely access to mechanical thrombectomy, and showed a benefit of treatment with TNK.

The Chinese TRACE-III findings are actually broadly generalizable to virtually all low-to-middle-income countries, where access to endovascular thrombectomy is much lower than in higher-income countries, or is nonexistent. We shall discuss these trials and their implications in more detail.

Intravenous thrombolysis in special situations

Prof. Jeyaraj Durai Pandian

There has been a tremendous advance in the management of acute ischemic stroke (AIS) over the last 28 years since recombinant tissue plasminogen (rtPA) was approved as a standard treatment for AIS. The exclusion criteria were very long and slowly over the years intravenous thrombolysis (IVT) is being given in many situations where evidence is not based on randomized controlled trials. IVT in unknown onset of time, wake up stroke, very old and young, stroke mimics, cerebral microbleeds, systemic and hematological diseases and pregnancy are the special situations where IVT can be given after advanced imaging and reviewing the clinical condition on an individual basis.

The most dreaded complication is symptomatic intracerebral hemorrhage which can be avoided after careful selection of patients. Moreover Tenecteplase (TNK) is shown on-inferior to rtPA in many recent trials which has a low hemorrhagic complication. Hence more number of stroke patients will benefit from IVT in the future.

Emerging Stroke Risk Factors

Prof. N Venketasubramanian Ramani

Stroke is a major cause of death and disability globally. The traditional risk factors include hypertension, diabetes mellitus, hyperlipidaemia and atrial fibrillation; life-style factors include smoking including second-hand smoke (passive smoking), obesity, sedentary lifestyle, dietary factors. Infections such a herpes zoster ophthalmicus may cause a vasculopathy by direct invasion while HIV may promote atherosclerosis.

Meningitis (bacterial, tuberculous, cryptococcus, and parasites) cause stroke by causing a vasculitis, spasm or thrombosis. Acute viral infections including influenza also cause stroke by a variety of mechanisms including induction of procoagulant acute-phase reactants, destabilization of atherosclerotic plaques, vascular inflammation, cardioembolic mechanisms. Chronic infections including periodontitis from poor dental hygiene and Chlamydia pneumoniae may lead to a chronic inflammatory state that promotes atherosclerosis. Lipoprotein Lp(a) is an LDL particle in which apolipoprotein B-100 is covalently linked to glycoprotein apoprotein(a) that may inhibit fibrinolysis, contributing to thrombosis. Air pollution leads to stroke via promoting a systemic vascular oxidative stress reaction, production of radical oxygen species which initiate plaque formation, favouring thrombus formation via an increase in coagulation factors and platelet activation, and effects on cerebral haemodynamics. The highest risk is during the day of exposure especially to PM2.5, but the risk also continues into the long term. Extended work hours may lead to sudden death from overwork often caused by stroke from repetitive triggering of stress response; physical inactivity, heavy alcohol consumption, ignoring stroke symptoms may also play a part. Attention needs to be paid to these and other emerging risk factors, and preventative measures instituted to reduce the risk of stroke.

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The most dreaded complication is symptomatic intracerebral hemorrhage which can be avoided after careful selection of patients. Moreover Tenecteplase (TNK) is shown on-inferior to rtPA in many recent trials which has a low hemorrhagic complication. Hence more number of stroke patients will benefit from IVT in the future.

Acute stroke imaging and treatment decision making

Prof. Vivek Gupta

The imaging in acute stroke differs from routine neuroimaging as not only multiple parameters are to be seen, but they are also to be interpreted in shortest possible time.

World over the imaging protocol have been made and tailored to fit the existing infrastructure and the need. They can be either CT based, or MRI based protocols. The most important three parameters in acute stroke imaging which needs to be seen are presences or absence of intracranial hemorrhage, the site of arterial occlusion and status of collaterals. Apart from these, few other things like the extent of ischemia (ASPECTS), the differentiation between ischemic and infarcted tissue (core/penumbra), the nature of clot and prognostication of the treatment administered needs to be determined.

Based upon all these things the treatment decision is taken. The three modalities available for the treatment are iv-thrombolysis, Mechanical thrombectomy and conservative treatment. The decision to administer the treatment is based not only on the imaging but other factors like time of stroke, history of other diseases, level of occlusion etc.

An Eye to Cerebral Small Vessel Disease

Prof. Sheila Gillard Crewther, PhD.

Cerebral small vessel disease (CSVD), as radiologically defined in 2013, is the most common, chronic and progressive vascular disease, and associated with ~20% of stroke incidents, gait disturbances, depression, cognitive impairment, and ~45% of dementias in the elderly.

Unfortunately however current MRI and CAT scan manifestations are still relatively non-specific with clinical signs of CSVD primarily based on white matter hyperintensities and acute and older vascular lacunae and multiple microbleeds as found associated arteriosclerosis, cerebral amyloid angiopathy (CAA), cardiovascular disorders such as minor strokes inflammation and immune-mediated small vessel diseases, and venous collagenosis. By comparison the eye and the neural retina that share a common early embryonic origin with the brain is much more accessible to visualization and high resolution fundus photography, Optical Coherence Tomography (OCT) and adaptive optics.

The blood-retinal barrier is also structurally and functionally similar to the blood–brain barrier and recent studies have demonstrated a close relationship between retinal microvascular abnormality and stroke suggesting and confirming that vascular examination of the eye is likely to be an important biomarker for CSVD and small blood vessel disease elsewhere in body.

Embolic Stroke of Uncertain Source and Atrial Myopathy

Prof. Mark Parsons

Up to 25-30% of the ischemic stroke patients do not have a definitive cause identified after comprehensive stroke work up. A suggestive brain imaging with an embolic pattern of uncertain source (ESUS) is not enough to change standard secondary prevention treatment, but it often triggers an exhaustive, and often futile, search for an underlying cardiac source of embolus. This process usually includes different modalities of cardiac ultrasound and extended periods of electrocardiography (ECG) recordings that might include a myriad of available devices, from portable devices to implantable loop recorders. However, there is increasing evidence that a 'thrombogenic' left atrium, reflecting an underlying atrial myopathy, may be a common source of cardio-embolism.

Although atrial myopathy is strongly associated with atrial fibrillation (AF), the myopathy may precede AF by many years, and often AF does not develop until after atrial-myopathy related cardioembolic stroke. Thus, intracardiac thrombus may be found in absence of AF. Indeed, some have postulated that AF may even be an innocent bystander and that it purely reflects an underlying atrial myopathy and is not itself the cause of cardioembolic stroke. We shall discuss how one might go about detecting this condition and how this might affect our secondary stroke prevention approach in the future..

Management of intra cerebral haemorrhage

Prof Sheila Martins

The treatment of acute hemorrhagic stroke was revolutionized with the introduction of a new management approach. The primary objective is to stabilize the patient, control bleeding, and prevent complications. Rapid neuroimaging, typically with a CT scan, is essential for diagnosis and assessing the extent of hemorrhage.
The bundle of care for hemorrhagic stroke, as validated in the Interact3 Clinical trial and outlined in the 2023 publication, changes the clinical outcomes and should be implemented in all stroke centers. Initial management involves airway protection, blood pressure control, and reversal of anticoagulation if the patient is using anticoagulants. Critical supportive actions include managing glucose, temperature, and oxygen saturation, while monitoring for complications like seizures, dysphagia, and deep vein thrombosis. Reversing anticoagulation for prior users is vital, employing effective new agents. Enhanced ICU monitoring ensures prompt intervention, significantly improving prognosis.
Surgical intervention may be required in certain cases, particularly when there is significant hematoma expansion, brainstem compression, or elevated intracranial pressure. Procedures can include hemicraniectomy, where part of the skull is removed to alleviate pressure, or minimally invasive approaches like stereotactic aspiration or endoscopic evacuation of the hematoma.

Rehabilitation should begin early to optimize recovery, involving a multidisciplinary team approach. This includes physical, occupational, and speech therapy to address the functional deficits resulting from the stroke.
Overall, the acute management of hemorrhagic stroke requires a multidisciplinary approach, rapid diagnostic and therapeutic interventions, and comprehensive supportive care to improve outcomes.

Stroke and Infections: Insights Amplified by the COVID-19 Pandemic

Prof. Tissa Wijeratne

The interplay between stroke and infections has long been recognized as a complex phenomenon with profound implications for global health. However, the emergence of the COVID-19 pandemic has shed new light on this intricate relationship, providing unprecedented insights into the mechanisms, risks, and consequences of infections in the context of stroke.

This paper presents an updated perspective on the intersection of stroke and infections, with a particular focus on the enhanced understanding garnered from the COVID-19 pandemic. We explore how the pandemic-related strokes have expanded our knowledge base and deepened our appreciation of the multifaceted connections between these two critical health conditions.
The COVID-19 pandemic has underscored the bidirectional relationship between stroke and infections, with growing evidence suggesting that the SARS-CoV-2 virus can directly impact the cerebrovascular system, leading to an increased risk of stroke in affected individuals. Moreover, the systemic inflammatory response triggered by COVID-19 has been implicated in exacerbating stroke severity and complicating recovery.
Conversely, stroke has emerged as a potential complication of COVID-19 infection, further highlighting the intricate interplay between these entities. The mechanisms underlying COVID-19-associated strokes, including endothelial dysfunction, hypercoagulability, and immune-mediated injury, have provided valuable insights into the pathophysiology of stroke in the context of viral infections.

Furthermore, the COVID-19 pandemic has brought to the forefront the importance of infection prevention and control measures in reducing the risk of stroke. Public health interventions aimed at mitigating the spread of COVID-19, such as vaccination campaigns and hygiene protocols, have the potential to indirectly impact stroke incidence and outcomes by reducing the burden of infectious diseases.

Intracranial Atherosclerosis

Prof. N Venketasubramanian Ramani

Stroke is a major cause of death and disability globally. Understanding of the mechanism of the stroke is needed for decision-making for acute treatment, prognostication, and appropriate secondary prevention. Approximately 20-35% of ischaemic stroke in Asia is due to large artery atherosclerosis (LAA), more intra- (IC-LAA) than extracranial. Based on the Trial of Organon in Acute Stroke Trial (TOAST) criteria, LAA is diagnosed when there is a cortical/brainstem/cerebellar syndrome, non-lacunar infarct on imaging, presence of a proximal/relevant arterial stenosis >50%, and no cardiac source or other mechanism.

Intracranial stenosis (ICS) can be detected on Computed Tomographic Angiogram (CTA), Magnetic Resonance Angiogram (MRA), Transcranial Ultrasound (TCD, TCI), or Digital Subtraction Angiogram (DSA). Differential diagnoses of ICS include recanalising thrombus/embolus, dissection, moya-moya disease, vasculitis/primary CNS angiitis, fibromuscular dysplasia, inflammatory vasculitis in the setting of meningitis, sickle cell disease, post-irradiation, etc. High resolution vessel wall imaging would be helpful.

IC-LAA can lead to stroke by thrombotic occlusion, artery-to-artery embolism, hemodynamic impairment, branch artery disease. Clinical trials suggest using aspirin + clopidogrel for the first 3 months, possibly nadroparin, ticagrelor + aspirin, and cilostazole as useful management options. The technical success of intracranial stenting is currently overwhelmed by the complication rates. Extracranial-intracranial (EC-IC) bypass surgery is best reserved for those with moya-moya disease. Blood pressure control statin, physical exercise should also be instituted, as should an active rehabilitation program, involving the multidisciplinary stroke team.

Endovascular Therapies in acute stroke

Prof .Vivek Gupta

The treatment of acute stroke has seen a sea change in the last decade. The established rationales for the treatment were challenged and newer treatments emerged. This became possible because of advancement in imaging, better understanding of path-physiology and emergence of newer devices and techniques.
The endovascular therapies have now become the cornerstone of acute stroke treatment. The rationale is to remove the clot/occlusion mechanically wherever possible. Currently, the endovascular therapies are either Stentriever based, aspiration catheter based or their combinations.

The goal is to establish reperfusion in minimum time or the concept of First pass recanalization. Over the years the hardware has become very safe to use and with the increasing operator experience the technique has a very low complication rate. This along with the fact that in selected cases the therapy can be given till 24 hours has made endovascular approach a key therapy in acute stroke treatment.

Artificial Intelligence in stroke management

Prof Saman Halgamuge

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Stroke Quiz

Dr A.T. Alibhoy

Prepare for an engaging session: an interactive quiz on Stroke Neurology, tailored to broaden the knowledge of all participants at the congress. This clinically oriented quiz will primarily explore physical signs in stroke and stroke neuroimaging. Participants will face twenty challenging questions through clinical scenarios. Each question is designed to offer valuable insights, enabling attendees to learn something new and take away practical tips to enhance patient care. Join me for this enriching experience in stroke neurology.

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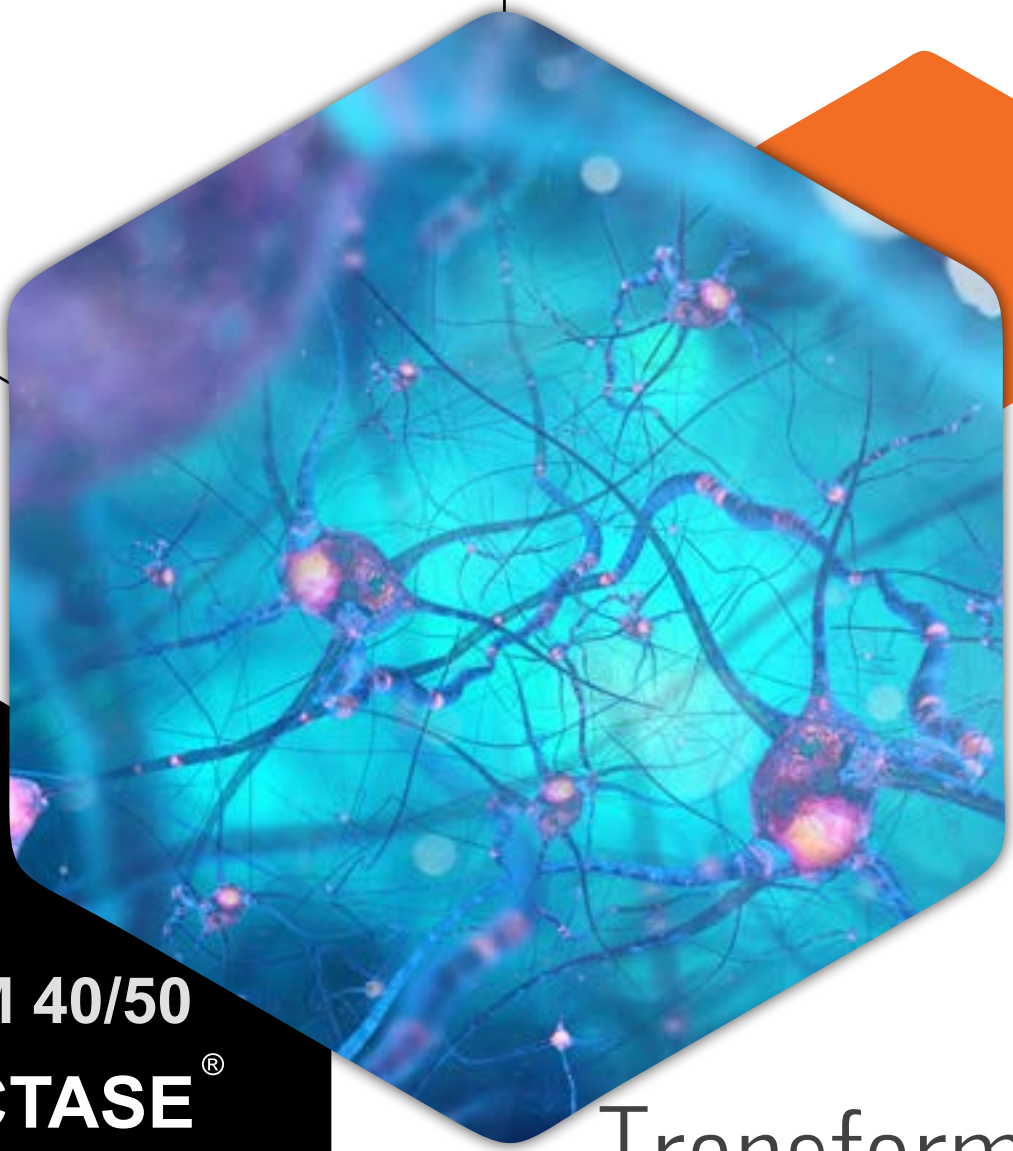

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