



The Official Newsletter of the Australasian Stroke Academy

In this issue

- Welcome Back Page 1
- About Us Page 1
- In the Dawn of the ECR era, is There Still a Role for Bridging Alteplase (tPA) Before ECR? Page 2
- 2018 Stroke Seminar Page 4
- 2018 Joint Korean-Australian Stroke Congress Page 5
- Travel Grant:: Korea 2018 Page 6
- Welcome to our new members Page 7

Welcome Back

Issue 2

We are pleased to welcome you back to the Australasian Stroke Academy's second issue.

In this issue, we're discussing the role of bridging Alteplase during this time of 'the dawn of ECR'.

We are also happy to remind you of our upcoming Stroke Seminar, to be held in Sydney in October.

You will also see more information on the joint Stroke Congress to be held in Korea in September, as well as the exciting opportunity of travel grants to those who are eligible.

We thank you for your time in reading this valuable information and as always, welcome any feedback you wish to give.

Until next time!

About us

See [What is Important to Us](#)

The Australasian Stroke Academy is a not-for-profit organisation composed of a diverse group of physicians who practice stroke medicine with the focus on the development and delivery of education in stroke medicine to the expert group and wider community.

Our mission: The Academy's aim is to provide continuing medical education via its annual scientific and education meeting, educational modules, collaboration with various stroke organisations both national and international and through the promotion of research.

Our vision: The Academy's vision is to establish itself as a facilitator of quality stroke care through the promotion of stroke physician education which empowers and equip the physicians to serve the community better.

Our values: The Academy promotes collaboration, transparency and a collegial atmosphere among all stroke physicians.

In the dawn of the ECR era, is there still a role for bridging Alteplase (tPA) before ECR?

A/Prof. Henry Ma

Dr. Shaloo Singhal

Recent years have provided multiple studies¹, which have revealed irrefutable evidence that endovascular clot retrieval (ECR) is beneficial in anterior circulation stroke with large vessel occlusion. This benefit in part due to both advancement in stent technology, but also due to careful patient selection. This also enables us to take the therapeutic window up to 24 hours.

Within the 4.5 hour window, thrombolysis is the gold standard reperfusion therapy for acute ischemic stroke patients without large vessel occlusion (LVO) and in patients in where ECR is not an option due to a clot which is not reachable by the stent retriever (current evidence is only applicable to ICA, M1 and proximal M2)¹ or have other contraindication for ECR. Thrombolysis, however, is not without its complications such as a 6.4 % haemorrhage risk. especially in patients with large infarct core (or low ASPECT score²). Animal studies have indicated that tPA can induce the breakdown of blood brain barrier³ (increases the risk of haemorrhage) and causes delayed neurotoxicity. In anterior circulation LVO stroke, ECR in addition to tPA alone has also shown a significant functional benefit. 2.8 patients would need to be treated with endovascular therapy to achieve improvement of at least 1 point on the modified Rankin score, as compared with the use of tPA alone. Patients in the endovas-

cular-therapy group were also more likely to be independent (functional score, 0 to 2) at day 90 (71% vs. 40%, P=0.01). ECR, of course is not without its own risks, such as downstream embolization (8.6%), dissection (1.7%) and vessel perforation (0.9%), but concurrent thrombolysis with ECR has not shown any significant differences in mortality or symptomatic intra cerebral haemorrhage risk. So, if there is the option of a potentially safer and more effective procedure available, need we subject a patient to tPA at all before ECR?

The holy grail of a stroke physician's dictat is 'time is brain'. Current guidelines strongly recommend that door to needle time for thrombolysis be achieved within a median time of 60 minutes in at least 50% of patients.⁴ Protocols are in place for this to occur even in smaller peripheral hospitals, often with videoconference neurologist support. Inter-hospital transfer has been quoted to add an additional median time of 128 minutes.⁵ In many cases, transfer times can be much longer. By giving tPA at the peripheral centres this can provide a chance of recanalization and reperfusion (salvage of the ischemic penumbra) to the patient during transfer. Our hospital policy (being one of the designated ECR centres) is to repeat CT Perfusion Imaging, and if there is significant salvageable tissue, the patient will proceed to ECR. In some cases, the clot has lysed or moved peripherally with tPA alone and saved the patient from ECR. In other cases, there

is already a large area of infarcted tissue on rescanning, making ECR both futile and potentially dangerous. The intracranial haemorrhage rate in the ECR arm of SWIFT PRIME⁶ and EXTEND IA⁷ were much lower than MR CLEAN⁸ likely due to their stricter patient selection with advanced neuro-imaging.

In ECR capable centres, it is usually quicker to commence tPA in LVO cases, while the ECR angio-suite is prepared or staff called in, particularly in the after hours setting. In reality though, these centres are so efficient that by the time the patient is on the angio-table only the tPA bolus and small amount of tPA infusion is given. In essence the rapid time factor has naturally removed some of tPA role in the treatment paradigm. Tenecteplase, an alternative thrombolytic agent which has been shown to be superior to tPA in recanalization and perfusion prior to ECR (EXTEND IA TNK) with its bolus only administration is a lot more practical than tPA in pre-ECR setting.

Conversely, as we become more confident with ECR (with much better logistics), patients who would not have been considered candidates as little as 5 years ago, now undergo the procedure with great success. These include older, sicker patients and even those with compromised pre-morbid level of function. There is also the patient who has a moderate sized infarct core, and moderate penumbra. tPA would most likely be

deemed too risky in this group, and so direct to ECR is the viable option. There are also cases where an INR result or anti Xa activity profile in anti-coagulated patients may take longer than the time it takes for “door to groin puncture” in ECR capable hospitals. As mentioned above, we are getting much faster with the door to groin time that often very little tPA is given prior to ECR. In addition, we know the recanalization rate of tPA is relatively poor in LVO. Hence giving ‘little tPA’ prior to ECR can be both costly and ineffective. One certainly would not advocate to delay the ECR for the completion of tPA infusion.

ECR experience in Asian countries has shown that about 40% of these LVO has residual stenosis after ECR (pre-existing intracranial stenosis) and stenting of the stenosis is often required to maintain the patency of the vessel. This will necessitate the administration of dual anti-platelets and GP 2b/3a inhibitors which can increase the risk if intracranial haemorrhage if tPA is given prior to ECR.

A number of studies have attempted to look at the current available data from direct ECR and bridging therapy but no definitive conclusion could be drawn. From these studies, at least, there seems to no major difference between the two approaches in both western and Asian countries.^{9, 10}

Currently, there are no guidelines regarding either strategy, but a common sense approach may be to start treatment, whether this is direct to ECR or with bridging TPA, as quickly as possible. There are a number of studies attempting to answer this very im-

portant question such as MR CLEAN NO-IV and SWIFT-DIRECT. DIRECT – SAFE, an Australian initiated international multi-centre phase 3 study will attempt to answer this crucial question which will commence recruitment from second half of 2018. In addition, the current evidence for ECR is only applicable up to proximal M2 LVO and we need more evidence regarding the more distal lesions through trials and registries. In the meantime it is down to individual case assessment and local logistic set up for treatment decision.

References:

1. Goyal M, Menon BK, van Zwam WH, Dippel DW, Mitchell PJ, Demchuk AM, et al. Endovascular thrombectomy after large-vessel ischaemic stroke: A meta-analysis of individual patient data from five randomised trials. *Lancet (London, England)*. 2016;387:1723-1731
2. Hao Y, Yang D, Wang H, Zi W, Zhang M, Geng Y, et al. Predictors for symptomatic intracranial hemorrhage after endovascular treatment of acute ischemic stroke. *Stroke*. 2017;48:1203-1209
3. Suzuki Y, Nagai N, Umemura K. A review of the mechanisms of blood-brain barrier permeability by tissue-type plasminogen activator treatment for cerebral ischemia. *Frontiers in cellular neuroscience*. 2016;10:2
4. Powers WJ, Rabinstein AA, Ackerson T, Adeoye OM, Bambakidis NC, Becker K, et al. 2018 guidelines for the early management of patients with acute ischemic stroke: A guideline for healthcare professionals from the American heart association/ American stroke association. *Stroke*. 2018;49:e46-e110
5. Ng FC, Low E, Andrew E, Smith K, Campbell BCV, Hand PJ, et al. Deconstruction of interhospital transfer workflow in large vessel occlusion: Real-world data in the thrombectomy era. *Stroke*. 2017;48:1976-1979
6. Saver JL, Goyal M, Bonafe A, Diener HC, Levy EI, Pereira VM, et al. Stent-retriever thrombectomy after intravenous t-pa vs. T-pa alone in stroke. *The New England journal of medicine*. 2015;372:2285-2295
7. Campbell BC, Mitchell PJ, Kleinig TJ, Dewey HM, Churilov L, Yassi N, et al. Endovascular therapy for ischemic stroke with perfusion-imaging selection. *The New England journal of medicine*. 2015;372:1009-1018
8. Berkhemer OA, Fransen PS, Beumer D, van den Berg LA, Lingsma HF, Yoo AJ, et al. A randomized trial of intraarterial treatment for acute ischemic stroke. *The New England journal of medicine*. 2015;372:11-20
9. Coutinho JM, Liebeskind DS, Slater LA, Nogueira RG, Clark W, Davalos A, et al. Combined intravenous thrombolysis and thrombectomy vs thrombectomy alone for acute ischemic stroke: A pooled analysis of the swift and star studies. *JAMA neurology*. 2017;74:268-274
10. Zi W, Wang H, Yang D, Hao Y, Zhang M, Geng Y, et al. Clinical effectiveness and safety outcomes of endovascular treatment for acute anterior circulation ischemic stroke in china. *Cerebrovascular diseases (Basel, Switzerland)*. 2017;44:248-258

Australasian Stroke Academy 7th Annual Stroke Management Seminar 27th to 28th October 2018

The Australasian Stroke Academy's 7th Annual Stroke Management Seminar is to be held on October 27th and 28th at The Raddison Blu Hotel,

Survey results have shown in previous years that the content of these seminars are relevant to those in attendance, with 45.57% of attendees to the 2017 conference stating that the content presented was 'extremely relevant' to their clinical practice, and a further 49.37% stating that it was 'very relevant'. Attendees have also interestingly stated that the networking opportunities presented at these seminars can be very/extremely valuable!

Included each year is comprehensive teaching and discussion on a wide range of topics in stroke management, ranging from acute investigation and management of stroke, to secondary prevention. True cases are presented to encourage those in attendance to think in depth about diagnostic and management challenges.

Topics to be discussed at the 2018 seminar include:

- Treatment of intracerebral haemorrhage (new generation hypercoagulables)
- Novel oral anticoagulants use in atrial fibrillation and non-atrial fibrillation
- New trials in the stroke world
- Award of Academy seed funding to young investigators 2018

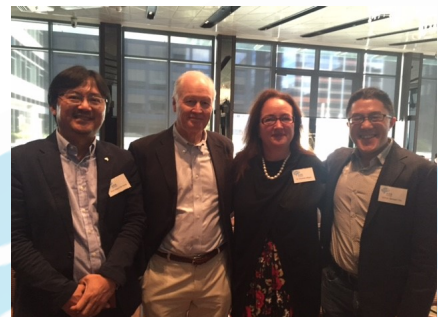
For information on registration, please see

<http://www.strokeacademy.com.au/registration.html>

Positions are limited, we hope to see you there!

"Having twice attended the ASA seminar, it's hard to think of a more engaging way to be up to date with this burgeoning field. Attendees will leave the seminar with practical knowledge in all facets of stroke care, and I would recommend it without hesitation. From a physician trainee point-of-view, it's a satisfyingly high-yield, well-paced update of the evidence that drives our practice, given by expert physicians who are publishing it."

Dr. Michael Zhong, Physician Trainee, Monash Health, 2017



2017 Conference at the RACV Club
Melbourne, Victoria.

2016 Conference at the Hilton Hotel
Sydney, NSW



**International Conference:
1st Australian-Korean Joint Stroke Congress
September 13th-15th 2018
Vista Walkerhill Seoul, Korea**

We are looking forward to the first joint Stroke Congress to be held in Seoul, Korea in September 2018. This exciting partnership between the Australasian Stroke Academy and Korean Stroke Society will feature speakers from around the world, including Jeffrey L. Saver from the USA, Ruey-Tay Lin from Taiwan, Kazunori Toyoda from Japan, Stephen David from Australia, and Keun-Sik Hong from Korea.

Some topics to be discussed include:

- Epidemiology and Prevention of Stroke
- Acute Stroke Imaging and Intravenous Thrombolysis
- Prehospital Management and Stroke Care System Organization

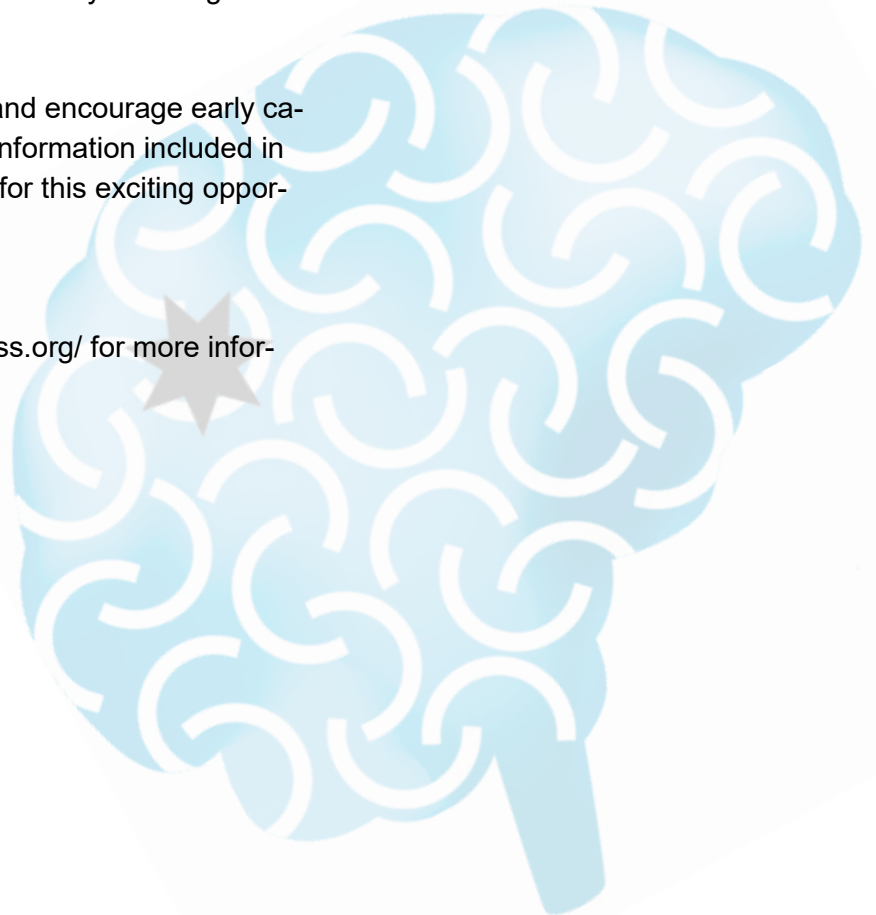
We look forward to seeing you there, and encourage early career physicians or trainees to see the information included in this newsletter regarding travel grants for this exciting opportunity.

Please see <http://www.strokeupdate-kss.org/> for more information

Important dates:

June 24: Abstract Submission Due

August 12: Early Registration Due



Introducing: Australasian Stroke Academy Travel Grant 2018

- Background:** The First Australian-Korean Joint Stroke Congress will be held from 13th to 15th September 2018 in Seoul, Korea. The Australasian Stroke Academy and Korean Stroke Society aim to provide travel funding to young stroke physicians and physician trainees from Australia to present their research projects at the Joint Stroke Congress in 2018.
- Aim:** To provide 10 x Travel Grants of US \$1,000 each for young stroke physicians / trainees to the Joint Stroke Congress (2018).
- Eligibility:**
1. Member of the Australasian Stroke Academy
 2. Early career physician (or trainee) researcher
 3. Successful acceptance of abstract submitted to the First Australian-Korean Joint Stroke Congress
 4. Attendance and presentation of the abstract at the Joint Stroke Congress.
- Submission procedures:**
- All submissions must be completed to the website:
<http://www.strokeupdate-kss.org/>
- Please also email the Australasian Stroke Academy to indicate that you have submitted the abstract.
- Email: contact@strokeacademy.com.au
- Grant award procedures:**
- All abstracts will be assessed by the Joint Australian and Korean Scientific Committee.
- Successful applicants will be notified by email.
- Each travel grant will be awarded to the successful recipient at the Joint Stroke Congress in September 2018 in Seoul, Korea.

A Warm Welcome To.....

The Australasian Stroke Academy would like to warmly welcome our new members who have joined us in 2018

Dr Laura Rudaks Basic Physician Trainee, Royal Adelaide Hospital

Dr Michael Zhong Neurology Registrar, Monash Medical Centre

Dr Yassar Alamri Basic Trainee, Royal Australasian College of Physicians

Dr Emma Blackwood Neurologist, Central West Neurology and Neurosurgery, Orange

Dr Robert Henderson Neurologist, Royal Brisbane & Women's Hospital, The Prince Charles Hospital Queensland

Dr David Lee Neurology Advanced Trainee, The Canberra Hospital

Dr Michael Poon Neurologist, Melbourne

Dr Cameron Williams Neurology Advanced Trainee, Austin Health, Eastern Health, Melbourne Health

Dr Ronil Chandra Diagnostic and Interventional Neuroradiologist

Dr Shyam Gangadharan Stroke Fellow, John Hunter Hosp

Dr Geoffrey K. Herkes Senior Staff Specialist, Neurology Royal North Shore Hospital, Sydney

Dr Carolyn de Wyt Department of Neurology, Greenslopes Private Hospital

Dr Evan Jolliffe Neurology Fellow, Mayo Clinic, Rochester, USA

Dr Wen Wen Zhang Neurology Fellow, St Vincent's Hospital, Melbourne

Dr Blake Giarola Neurology advanced trainee, St Vincent's Hospital

Dr Henry Maung Geriatrics Advanced Trainee

Dr William Huynh Consultant Neurologist & Clinical Neurophysiologist

Dr Koshy George Consultant Neurologist at Gold Coast University Hospital and John Flynn Hospital, Tugun

Dr Patricia Caruana MD, FRACP

Dr Richard Gerraty FRACP Epworth Hospital, St Vincent, Prof.MED Monash Uni

Dr Angela Dos Santos Neurology Advanced Trainee

With now a total of 108 members, we encourage all those interested to apply.

Physicians and physician trainees practicing stroke medicine in Australia and New Zealand may apply to the Australasian Stroke Academy for general membership.

For further details, please see:

http://www.strokeacademy.com.au/application_for_membership_of_the_academy.html