

In brief



Afghan farmers work at a poppy field in Jalalabad province, earlier this month. Opium farming has reportedly experienced a resurgence in Afghanistan recently, both because opium prices are high and because the profits from other crops are limited. Less than half (15) of Afghanistan's provinces are expected to be free of opium this year, according to a report by the United Nations.

From the CSIRO Preventative Health Flagship

Stroke study seeks to improve therapeutic window

Despite advances in prevention and treatment, stroke remains the third most common cause of death and disability. In the case of ischaemic stroke, thrombolysis with tissue plasminogen activator (tPA) to restore blood flow, alongside platelet inactivation therapies, prevents infarct growth if instigated early enough. Although this should theoretically benefit all patients with ischaemic stroke, in practice fewer than 10% of eligible patients receive this powerful treatment despite benefit in about half of those receiving tPA. Earlier administration to eligible patients increases the likelihood of benefit. In the Stroke Imaging Prevention and Treatment (START) Clinical Trial Consortium (<http://start.csiro.au>), the CSIRO's Preventative Health Flagship, the Florey Neuroscience Institutes, Melbourne Health and Austin Health are using imaging biomarkers and blood-based biomarkers to identify patients likely to benefit

from thrombolysis.

Many patients arrive at hospital too late to receive thrombolysis. Imaging biomarkers detected by computed tomography perfusion and magnetic resonance imaging perfusion–diffusion mismatch are being used to identify patients who have salvageable brain tissue despite late arrival, and treatment response for these patients is being assessed by a randomised controlled trial of tPA. Patients who wake with stroke are being included in the study. Previously, these patients would not have been treated with tPA because uncertainty about the time since stroke onset has meant that the risk of catastrophic bleeding could not be assessed.

The disadvantages of selecting patients through imaging include delays in scanning, infrastructure costs and difficulties of the repeated scanning needed to assess the direction and rate of ischaemic change within an individual. Protein

and RNA detection methods provide the potential for quick results from analysis of blood-based biomarkers and initial point-of-care assessment of stroke status in any setting. We commenced a discovery program for blood-based biomarkers using animal models of stroke and performed validation in phenotyped human cohorts from the START clinical trials with the imaging biomarker data for comparison. In animals, the expression of some genes changes dramatically after stroke, and in a stereotyped pattern at specific times after onset, indicating that it might be feasible to generate a biological “stroke clock”.

In addition, the START clinical trials are aimed at identifying blood-based biomarkers to distinguish ischaemic and haemorrhagic stroke and to assess risk of depression or secondary stroke. If successful, the results would have direct impacts on decision making regarding patient care and recovery.

Richard Head
Director, Preventative
Health Flagship, CSIRO

David Howells
Associate Director, Florey
Neuroscience Institutes

Stephen Davis
Director, Melbourne
Brain Centre

Geoffrey Donnan
Director, Florey
Neuroscience Institutes

Stroke Imaging
Prevention and
Treatment (START)
Clinical Trial Consortium
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News

AMD drugs equally effective

Eagerly awaited 2-year trial results show that bevacizumab (Avastin) is as effective as ranibizumab (Lucentis) for “wet” age-related macular degeneration (AMD), despite being about 40 times cheaper. The Comparison of Age-related Macular Degeneration Treatment Trials (CATT) found that among patients taking the same regimen (as needed or monthly) for 2 years, the mean gain in visual acuity was similar for both drugs. The rates of death and arteriothrombotic events were also similar, although systemic serious adverse events were more common in the bevacizumab group. The drugs were both more effective when patients were treated monthly rather than as needed.¹

The results come as Novartis — which markets both drugs in the UK — is suing part of that country’s National Health Service. The legal action focuses on the decision of a primary care trust on the south coast of England to allow ophthalmologists to use bevacizumab rather than ranibizumab. The switch is estimated to generate savings of £5 million (approximately A\$8 million) a year.²

In Australia, ranibizumab is funded by the Pharmaceutical Benefits Scheme for AMD, which reduces the cost for patients from \$1976.36 to \$35.40. Bevacizumab, a cancer drug, is used off-label for AMD at a cost of around \$50 a dose.

1. *Ophthalmology* 2012; 1 May (online)
2. *BMJ* 2012; 24 April (online)

Time to introduce pulse oximetry screening?

Congenital heart defects account for more infant deaths than any other type of malformation. Pulse oximetry has been used as a screening method to detect the defects; however, uncertainty exists about test accuracy. A new systematic review, including data on 229 421 newborn babies, found that the overall sensitivity of pulse oximetry for detection of critical heart defects was 76.5%. The specificity was 99.9%, with a false positive rate of 0.14%. The false positive rate was much lower (0.05%) when pulse oximetry was done more than 24 hours after birth. The researchers said their study used the largest dataset to date, double that of previous studies. “The findings of this meta-analysis provide compelling evidence for introduction of pulse oximetry as a screening method in clinical practice”, the researchers wrote.

Lancet 2012; 2 May (online)

Lecture-less medical school

Medical education needs an overhaul, including a substantial reduction in traditional lectures, according to two Stanford University professors. The US academics suggest a “flipped-classroom” model, in which students absorb a lecture in digital format at home, while class time is used for more case-based, problem-based and team-based exercises. “In an era with a perfect video-delivery platform ... why would anyone waste precious class time on a lecture?”, they ask. After Stanford University recently redesigned a biochemistry course along these lines, attendance and course satisfaction increased substantially. The academics say there needs to be an education rethink to accommodate the expanded medical canon without increasing the length of training. By using face-to-face teaching time for more emotion-provoking simulation exercises, lessons would be more engaging and memorable, they add.

N Engl J Med 2012; 366: 1657-1659

From the MJA archives

MJA 1971; 15 May (edited extract)

New concepts in design of medical records in the computer era

A system of medical record storage and retrieval to comply with modern conditions and computer facilities of the future is described.

On the one hand, the conventional manuscript record is accurate, and is also the most accessible and cheapest method of recording any single disease event.

On the other hand, the storage of vast numbers of past history records in hospital has proved to be extremely clumsy and expensive.

It is therefore proposed to provide an accurate summary of each completed disease event, which can be stored, many thousands to a filing cabinet, and which will be accessible at a moment’s notice. The normal manuscript record can then be filed away at some peripheral site.

The system is based on the use of a large card, with a narrative section and coding boxes. The sisters or medical



clerks taking the histories will have no difficulty in combining manuscript notes with figures to be inserted in the coding boxes.

A proportion of the coding boxes are designed for use in the future, when the hospital has “on line” computer facilities.

The biggest individual problem of lost or mislaid records can be overcome by rapid duplication of the summary card when the card is required outside the department

RA Thatcher, Queen Victoria Hospital, Adelaide

Public hospital admissions rise faster than private

Among 8.9 million hospital admissions in 2010–11, 5.3 million were in public hospitals, while 3.6 million were in private hospitals. Public hospitals had a greater increase in admissions (4.1%) than private hospitals (3.9%) since 2009–10. The report also found a significant increase in admissions of elderly patients: for the 5 years to 2010–11, admissions among people aged 85 and over increased by 41%.

Australian Institute of Health and Welfare 2012. *Australian hospital statistics 2010–11*

Sophie McNamara
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