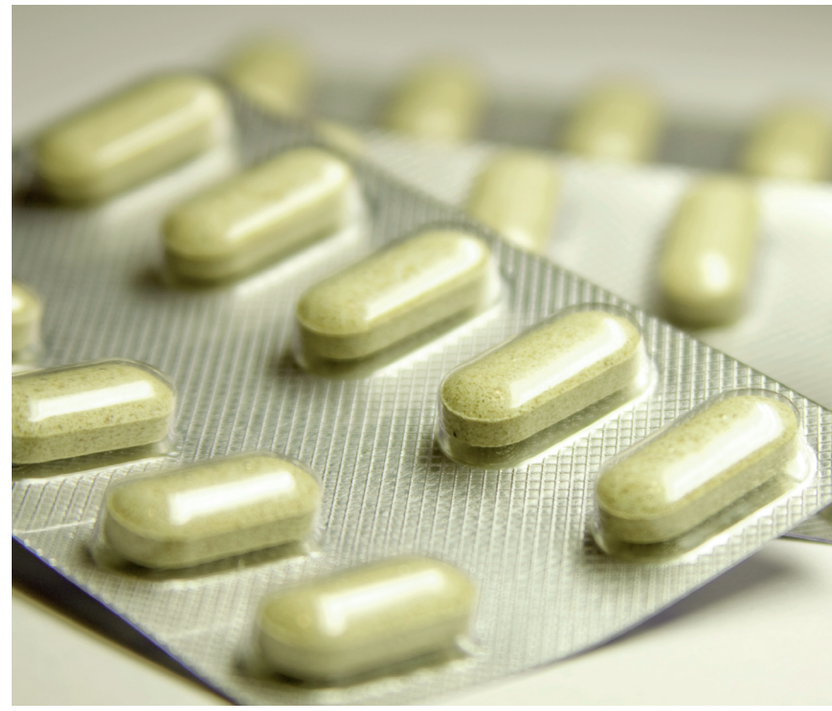
News bites

International

New drug offers hope for better Alzheimer's treatment

A new class of drug shows promise of in future offering a new form of treatment for Alzheimer's disease, as well as helping fight multiple sclerosis and traumatic brain injury, researchers from Northwestern University Feinberg School of Medicine and the University of Kentucky recently reported. In tests on mice, the experimental drugs reduced inflammation in the brain. Such neuro-inflammation is believed to play a key role in the progressive damage involved in Alzheimer's and other neurological conditions, as well as in stroke.



Reporting in the *Journal of Neuroscience*, the researchers said they found that one of the experimental drugs, known as MW151, significantly slowed the effects of Alzheimer's disease in mice that were genetically engineered to develop the disease when it was given to them orally three times a week – beginning at six months of age. The mouse study was designed to be comparable to when a human patient would begin to develop mild cognitive impairment, an early sign of Alzheimer's. The finding is noteworthy because it offers a different approach to treat Alzheimer's than others being tested that focus on the development of beta amyloid plaques in the brain that have been linked to the disease, although their role isn't clear, said lead author D Martin Watterson, a drug discovery researcher and professor of molecular pharmacology and biological chemistry at Northwestern. 'This class of drugs … alters the opportunity to start treating [Alzheimer's] earlier, therefore slowing down the progression,' said Watterson. The study was funded by the National Institutes of Health, the American Health Assistance Foundation, the Alzheimer's Association and the Kleberg Foundation.

Unlike many drugs, the new medications, which are taken orally, easily cross the blood-brain barrier. The researchers who developed the drugs are cautious but hopeful. Based on previous studies involving mice, they 'might hold bright potential as co-therapies for Parkinson's disease, frontotemporal dementia, amyotrophic lateral sclerosis, MS and the longer-term complications of brain injury,' according to Watterson. For Alzheimer's, Watterson said they probably would be part of a 'multi-drug strategy' to be used with other drugs that target amyloid plaques.The drugs work by 'preventing the damaging overproduction of brain proteins called pro-inflammatory cytokines,' according to the researchers, who say that too much of those proteins is thought to cause synapses to misfire in the brain, contributing to the development of many degenerative neurological diseases, as well as to the neurological damage caused by traumatic brain injury and stroke. Northwestern has won patents for the new types of drugs and is licensing them to a biotech company.

Africa

Community ART delivery

The feasibility of providing ART beyond the health service setting has been powerfully demonstrated in several sub-Saharan studies, according to a report by the international medical aid agency, Médecins Sans Frontières (MSF), and delivered at the International AIDS Conference in Washington recently. In Uganda it was demonstrated that home-based ART delivery matched facility-based ART delivery in patient survival and suppressing patient viral load. In western Kenya, people living with HIV have been trained and salaried to provide follow-up care to other,

clinically stable, patients living with HIV in their communities and to deliver ART. In Tanzania, a model of ART delivery by community-based volunteers linked to trained medical workers has led to fewer patients being lost to follow-up treatment. Community-based ART helps to build patient self-efficacy and the social networks that encourage patient autonomy within a supportive environment and can be adjunct to a more general decentralisation of ART service delivery. MSF has supported ART and pre-ART in resource-limited settings over the past decade, including the piloting of innovative models of ART delivery and their evaluation through operational research.

In South Africa, MSF began to provide ART in 2001 at three dedicated HIV clinics in Khayelitsha, a township of 700 000 inhabitants located on the outskirts of Cape Town. Khayelitsha carries one of the highest burdens of both HIV and TB in the country. As ART was introduced prior to the national programme, it provided the opportunity to demonstrate feasibility and acceptability of treatment in a resource-poor urban setting. The ART delivery was initially doctor based and located in three community health centres. However, scale-up has been exponential: in June 2002, 100 people had been initiated on ART; by June 2003 the number had increased to 400; the following year it was 1 000, and by June 2011, more than 20 000 people had been initiated on ART. The proportion of patients being lost to follow-up also began to rise as clinics became saturated. In response, the care model was adapted to move towards a nurse-based, doctor-supported decentralised model of care and by developing out-of-clinic approaches to adherence support for stable patients. Community ART adherence clubs were established in November 2007 as a way to decongest health centres by shifting the majority of consultations and ART collections for stable patients to 'clubs' organised by lay counsellors or peer educators.

South Africa

SA patent law blocking vital second-line HIV drugs

A Médecins Sans Frontières (MSF) report highlights how South Africa's current patent policy is stopping vital second-line HIV drugs from reaching those who can't afford them. It estimates that half a million people in the country will need second-line drugs by end-2012; in MSF's HIV programme in Khayelitsha alone, 12.2% of patients on HIV treatment for 5 years need to switch to second-line drugs. New second-line drugs exist, but in southern Africa they are 14 times more expensive than first-line drugs.

This is unlikely to change unless patents are dropped to allow broad and open generic competition that will drive prices down, MSF said in launching its 15th edition of *Untangling the Web* – a guide to prices of HIV/AIDS medicines – at the International AIDS Conference in Washington recently. The booklet is an invaluable resource for increasing HIV treatment access equity across the globe.

This year's edition focuses on how middle-income countries like India and China are working to overcome 20-year patents which put newer and stronger HIV drugs out of reach of the millions who need them. Both countries are showing that active government involvement and market dynamics can have amazing results. The report adds weight to the United Nations report, *HIV and the Law; Risks, Rights and Health*, published just weeks earlier, which shows that the current international patent regime does not serve the interests of the poor. South Africa's current intellectual property (IP) policy is much more restrictive than what is required by international law. For example, in 2008 alone, South Africa granted 2 442 pharmaceutical patents, compared with only 278 in Brazil for a five-year period (2003 - 2008). However, this year there is a unique opportunity to challenge this, as the South African Department of Trade and Industry (DTI) is reviewing South Africa's current IP policy, as part of legislative reform that will take place in early 2013. MSF and the Treatment Action Campaign (TAC) urged South Africa to amend its patent law to include stricter patentability criteria and much more, in the interest of public health – particularly when it comes to treating HIV/AIDS.

SA women at significant risk of developing heart disease

Despite perceptions that heart disease is primarily a male disease, it is also the largest single cause of mortality among women, accounting for a third of all female deaths worldwide. According to the Heart and Stroke Foundation, South African statistics are alarming, with 1 in 4 women at risk of heart disease compared with 1 in 35 at risk of breast cancer. Graham Anderson, Principal Officer at Profmed, the medical scheme that caters exclusively for graduate professionals, says there is a common misconception that women are at far less risk of developing heart disease. 'Oestrogen does provide some protection against heart disease, but as oestrogen levels reduce after the menopause, this protection also decreases. As a result, by the age of 60, both men and women are at equal risk of developing heart disease.'

He says it is important to note that the warning signs of a heart attack in women are also less evident, as symptoms tend to be markedly different from those experienced

by men. 'It is estimated that as much as 35% of heart attacks in women go unnoticed or unreported. This may be partly due to the fact that the symptoms for women are not the classic tightness or pain in the chest. Instead women are likely to experience a wide range of sensations. Symptoms to look out for include an uneasy feeling in the chest; abdominal pain; shortness of breath; fatigue and nausea; dizziness and even swollen feet.' Anderson says the problem for many women in diagnosing heart disease is that the symptoms may be easily dismissed as simple stomach pains. 'A sign that something more serious may be wrong is if the symptoms worsen when the heart is put under pressure, for example when exercising. If this is the case, then it is important to act immediately. Medical help is most crucial in the first few hours after the attack.'

He says that while there are a number of factors that contribute towards heart disease, including medical conditions and a genetic predisposition, changing one's lifestyle is a key area in which one can make a concerted effort to reduce their risk. 'Heart disease is exacerbated by poor lifestyle choices such as excessive drinking and smoking, a lack of exercise and a poor diet. By taking regular exercise, eating a healthy balanced diet low in saturated fats and reducing stress, one can aim to reduce the risk. The impact of poor lifestyle choices does not just lead to an increased risk of heart disease but also results in an increased likelihood of strokes, heart attacks, tobacco- and nutrition-induced cancers, chronic bronchitis, emphysema and many others. As a result, it is crucial that all South Africans seriously review their lifestyles and make the necessary adjustments to avoid long-term implications to their health,' says Anderson.

Matie probe heralds global TB treatment breakthrough

A drug combination that kills 99% of patients' TB bacteria in a fortnight could cure TB and wipe out 90% of treatment costs, researchers at Stellenbosch University say. The New Combination 1 (NC1) study used two new drugs and one old TB drug on 15 patients in Cape Town, according to the research first

published in the *Lancet* this July. Principal investigator, Stellenbosch University's Professor Andreas Diacon, believes the trial heralds an entirely new approach to TB drug development. 'New candidate drugs are usually added to existing drug regimens one at a time over a number of years. However, this trial involved combining two new drugs with one old TB drug.' The new combination was twice as strong over the first two weeks of treatment as the current regimen and this was a very good indication 'that we can develop a potent new regimen with them,' said Diacon. Most astonishingly (if follow-up trials support the results), scientists reckon that TB, including some forms of drug-resistant TB, could be cured within four months. Currently people with multidrug-resistant TB (MDR-TB) require 28 months of treatment while those with ordinary TB take daily pills for six months.

'A new regimen like this holds tremendous potential for those with multidrug-resistant TB,' said Dr Mel Spigelman, CEO and President of TB Alliance, which spearheaded the trial. 'We could be reducing their treatment by two years or even longer. The regimen also promises to be 90 per cent cheaper than the current regimens. That means we could soon have a dramatically shorter, simpler, cheaper and more effective treatment.' A second trial called New Combination 2 has already been launched to test the combination over two months in patients at eight sites in South Africa, Tanzania and Brazil. Dr Mario Raviglione, of the World Health Organization, said testing multiple new TB drug candidates simultaneously had proven to be a major advance. 'Because of testing drugs in combination, we have already saved several years in the research process to find new, effective regimens to treat TB,' Raviglione said.

'The results look strongly promising from this early trial. If further testing holds up these results and the regimen is affordable in poor countries, it is huge progress. We could shorten drug regimens substantially for everyone, regardless of whether the form of TB is sensitive or multi-drug resistant. That would be a dramatic step forward.' The drugs involved are a new drug candidate called PA-824; moxifloxacin, an antibiotic not yet approved for use in first-line TB therapy and pyrazinamide, an existing TB drug. *(Health e-news)*

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