



HIGH-FLYING DVT RISKS GAINING ALTITUDE?



As several hundred people on two continents bring class action lawsuits against various airlines for 'ignoring' warnings about the dangers of deep vein thrombosis (DVT), clinics offering genetic predisposition tests are springing up.

Two of the first countries to offer blood screening in major cities are South Africa and the United States, while the lawsuits are being launched in Australia and the United Kingdom.

Although debate still rages about the general quantum of risk in what is commonly called 'economy class syndrome', it is accepted that a positive family history or previous episodes of DVT requires serious attention.

Categories of passengers who may benefit most from the new tests include smokers, diabetics, pregnant and/or obese people, and those with high blood pressure or taking oral contraceptives.

One genetic expert who suddenly and unwittingly found himself at the centre of both lawsuits, 35 years after penning two scientific articles warning about DVT, is Peter Beighton, Emeritus Professor of Human Genetics at UCT.

Beighton has been put 'on standby' by lawyers for the DVT plaintiffs, after writing in the May 1967 issue of the

British Heart Journal that 'the stasis of a long journey, combined with pressure from the aircraft at the back of the legs and the hypoxia, together provide an ideal climate for precipitating DVT'.

The alleged failure of the airline industry to warn long-distance travellers of this, lies at the heart of the litigation.

Beighton: 'I moved out of internal medicine and gave no further thought to DVT for over 30 years'.

Beighton remarked wryly that he 'moved by chance out of internal medicine into human genetics and gave no further thought to DVT or pulmonary embolism for over 30 years - until I got that phonecall in 2001'.

While 'surprised at how slowly things are moving,' he believes the nascent genetic testing industry will burgeon. 'The popular press alarmed travellers, but the risks are real,' he told the *SAMJ*.

Beighton has been interviewed for the popular British television show 'Panorama' about his unwitting role in the civil suits.

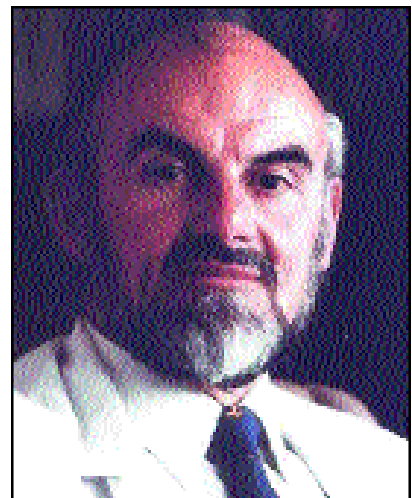
He told the *SAMJ* that he became

interested in the medical hazards of air travel while serving first as a paratrooper in the RAMC, and then with UN peacekeeping forces in the Congo, and afterwards as a medical registrar at Hillingdon Hospital near Heathrow Airport. These influences led him to penning his first article on 'the medical hazards of air travel', in *The Practitioner* in May 1967.

'I basically analysed the causes of morbidity and mortality of people coming from the airport, mainly cardiovascular problems and unconsciousness. In the second article in the *British Heart Journal*, my co-author Peter Richards was a medical officer at London Airport and also a British Army Congo veteran'.

In this article, both men formally acknowledged the then British European Airways (short-haul) and British Overseas Airways (long-haul) and Dr J Graham Taylor, the airline company's director of medical services at Heathrow Airport - a fact seized upon by the litigators.

Beighton is one of the first academics to suggest the idea of genetic screening for a propensity to DVT and he says the launching of the service nationally in



Professor Peter Beighton



the United States has validated the local decision. 'They both came to the same conclusion independently,' he stated.

He says initial airline studies (one by Gauteng's Professor Barry Jacobsen) are finding that the incidence of DVTs is fairly low (low generalised overall risk) but that because of the large numbers of people flying, a 'fair number of people are suffering DVT'.

'The press has alarmed travellers, but the real risk is real!'

'If your other risk factors are there, you'd be well advised to take the test. The chances of it being positive are very small, but if you do have DVT, the complications could be lethal.'

Beighton drew a parallel with cigarette manufacturers printing health warnings. 'If you knew you had the gene that predisposes you to lung cancer, you'd probably stop smoking. Equally, a person who knows that he or she has an increased risk of DVT is likely to pay attention to the various pre-flight and in-flight measures which are now proposed'.

However Professor Barry Jacobsen, head of haematology for the National Health Laboratory Services and the chief at the Wits surgical research unit, was openly sceptical of genetic testing for DVT predisposition in the absence of hard scientific findings.

'There's no way you can say outright that if you have the genetic risk factor that you will get a thrombosis. If you don't have the risk factor, that doesn't protect you from thrombosis - a person will just get information that won't help them'. He considers that the jury is still out on the issue.

Jacobsen led a team that studied 900 SAApassengers flying between Johannesburg and London in April and May 2002, taking blood samples before departure and upon landing, with 60%

having ultrasound done after their flights. DNA samples were also taken.

SAA donated 5 000 Voyager miles to each volunteer and major technical and pathology companies donated staff and equipment.

He said the Medical Research Council was still analysing the data at the time of this report and that he hoped to have a paper written 'within six weeks - depending on other variables'.

'You're going to end up with a lot of passengers claiming it's SAA's responsibility to upgrade them to business class where there's more room - but that's not SAA's responsibility... Let's not forget that President Richard Nixon got a clot flying in Airforce One to Russia - and he had a fair bit of legroom,' he quipped.



Dr Maritha Kotze

Dr Maritha Kotze, a molecular geneticist whose company at the Christian Barnard Memorial Hospital is conducting leiden factor five mutation, pro-thrombin gene variant and the more controversial elevated homocysteine tests, says the local service is far cheaper

than in the USA. 'They're charging the equivalent of R2 450 for just doing the first two factors and we're charging R900 for three.'

She said she was preparing for a large influx of tests, after the SAANetcare travel clinics asked for more test request forms to be printed.

'What I'd say to our critics is that if you have genetic factors, you are at risk and travelling anywhere with stasis for longer than three hours becomes relevant'.

Kotze claims the presence of elevated homocysteine increases the indicator accuracy by a factor of eight, a claim that is disputed by some geneticists who believe the third test to be unwarranted.

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Many gynaecologists are warning women who test positive for any of the three DVT predisposing factors, to stop taking the contraceptive pill. Jacobsen entirely agrees with this but says it's 'a separate issue'.

Dr Stephen Toovey, a director of SAA Netcare's nine travel clinics that all offer the service, says clients are asked for family and personal histories before blood samples are taken. Results are available within two to three days.

'Depending on the result, we have a network of cardiologists and vascular surgeons for referrals. This doesn't only impact on travelling, it can warn clients of surgical and other risks too.'

He said he was unaware of any other travel clinics offering the service in South Africa. The local service began in November 2002, shortly before the United States began setting up.

Chris Bateman