AIDS BRIEFS

The recent 13th Conference on Retroviruses and Opportunistic Infections in Denver has provided some interesting updates on what is going on in HIV in South Africa and its neighbours.

ANTIRETROVIRAL THERAPY REDUCES TB INCIDENCE IN CHILDREN WITH HIV

Neil Martinson and colleagues, from the University of the Witwatersrand, used a retrospective record review of children treated with antiretrovirals and compared them with children who were not on treatment to look at the effects of antiretroviral treatment on the incidence of tuberculosis (TB). They covered four antiretroviral clinics – three in Johannesburg and one in Cape Town. Children under the age of 15 were eligible for the study if they went to the clinic at least twice every 6 months. A diagnosis of TB had to be confirmed by smear, culture or biopsy. The study included 992 children, with a median age of 7 years. Their CD4 was around 17% and viral loads were around 40 000 copies/ml. Two-thirds of the study group had been taking highly active antiretroviral therapy (HAART) for more than 3 months. Children receiving antiretrovirals were followed up for 11.5 months and those who were not were followed up for 9 months.

Although the children receiving antiretrovirals were more immunocompromised than those who were not, there were far fewer diagnoses of TB among them. The incidence of TB among those not on antiretrovirals was 16.3 per 100 child-years, which fell to 6.3 per 100 child-years for those on antiretrovirals. Only about one-third of children who were on antiretrovirals who were suspected of having TB had their diagnosis confirmed, compared with 18% of the suspected cases among children not on antiretrovirals. It also appeared that a low viral load was associated with a reduced incidence of TB, rather than an increased CD4 percentage.

However, as a retrospective study, there are a number of limitations. For example, TB case definitions may not have been as consistent as they would have been in a prospective trial. There were also no data on mortality because children who did not return to the clinic were not followed up. However, the results are consistent with data from other small studies carried out in Côte d'Ivoire and Haiti and with observed results in adults on antiretroviral therapy.

Martinson N, *et al.* 13th Conference on Retroviruses and Opportunistic Infections, Denver, 2006. Abstract 22.

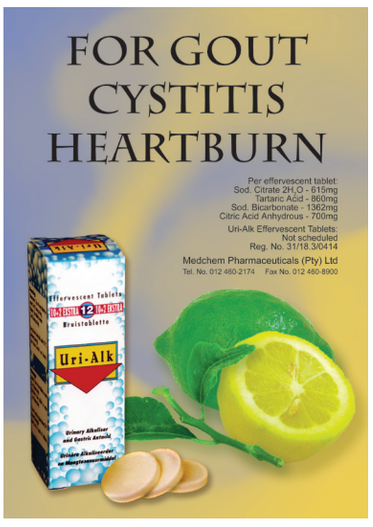
ZAMBIA SCALES UP TREATMENT

The Zambian government reported positively on its HIV treatment scale-up programme at the same conference. By the end of 2005 a total of 22 121 adults and children in the Lusaka region had begun antiretroviral treatment, mainly through nurse and clinical officer-led clinics. A further 36 566 patients had been enrolled into HIV care. Treatment access accelerated rapidly in the second half of 2005, with nearly half of those on treatment started during this period. However, there are still another 56 000 adults in the Lusaka region who need treatment immediately and a futher 28 000 who will probably be eligible for treatment later in 2006.

The Zambian health care authorities have found that even those with advanced HIV disease, with baseline CD4 counts below 50 cells/µl, are responding well. More than 90% of these patients, who were followed up for 15 months, were still alive. In comparison, an historic cohort group of patients enrolled before free antiretroviral treatment with CD4 counts of less than 50 cells/µl were dead after 15 months.

Clinical care at all sites was standardised along national guidelines and treatment was started according to the World Health Organization (WHO) clinical staging and CD4 count. The standard first-line treatment was zidovudine or d4T, plus 3TC, plus nevirapine or efavirenz; 92% of patients received nevirapine-based treatment. Efavirenz was reserved for those who were also being treated for TB.

Sinkala M, *et al.* 13th Conference on Retroviruses and Opportunistic Infections, Denver, 2006. Abstract 64.



THE KHAYELITSHA EXPERIENCE

Dr Andrew Boulle, talking about a 3-year follow-up of the *Médecins sans Frontières* treatment programme in Khayelitsha, Cape Town, said that lactic acidosis is occurring at an unusually high frequency in South African women receiving d4T-based treatment and is the main reason for toxicity-related switches. The treatment programme started in 2001 and by the end of 2004 more than 1 700 previously untreated HIV-positive adults had started antiretroviral therapy. First-line treatment consisted of zidovudine plus 3TC, and either nevirapine or efavirenz. Later this was changed to d4T plus 3TC plus nevirapine. By the end of 2005 about 1 in 10 patients had switched to second-line treatment after 36 months; about 59% of patients remained on their initial regimen after 36 months. By month 24, 7.2% had switched from their initial regimen owing to treatment failure and by month 36, 10.8% had switched because of treatment failure.

Among those taking d4T, the rates of switching because of symptomatic hyperlactataemia/lactic acidosis and peripheral neuropathy were 15/1 000 and 17/1 000 patient-years, respectively. However, when the cases of lactic acidosis were further analysed by weight and gender, the risk was substantially higher among women weighing 75 kg or more than among the general population. Weight gain of 5 kg or more by month 3 of treatment also increased the risk of developing lactic acidosis. A similar trend has been seen in Botswana, but no biological explanation has yet been offered.

Boulle A, *et al.* 13th Conference on Retroviruses and Opportunistic Infections, Denver, 2006. Abstract 66.

Bridget Farham

SINGLE SUTURE

HEALING CELLS

It appears that healthy cells can heal each other by rejuvenating damaged mitochondria, according to a team from Tulane University, New Orleans. Researchers say that they have discovered that mitochondrial DNA (mtDNA) from healthy cells can migrate into neighbouring cells with defective or non-existent mitochondria, even when the cells are not fused together. The team used ethidium bromide to destroy all the mitochondria in lung cancer cells kept in the lab. When healthy cells, either bone marrow stem cells or fibroblasts, were placed alongside the cancer cells, some recovered. These rejuvenated cells contained mtDNA from their healthy neighbours, so they had either absorbed the genetic material or the mtDNA had passed across in some other way. The rejuvenated cells increased the amount of oxygen they were consuming, indicating that they were working, and tripled their production of ATP. They also stopped accumulating lactate waste products. This discovery raises the possibility of using healthy cells to correct defective mitochondria in patients with mitochondrial diseases or even to alter mitochondria in the embryo permanently. However, experts in mitochondrial research urge caution, saying that more research is needed.

New Scientist, 28 January 2006: 8.