NEWS IN BRIEF

THE MYSTERIOUS ELITE

HIV patients who never get sick or suffer damage to their immune systems were highlighted at the recent 16th International Conference on AIDS held in Toronto, Canada.

"Estimated to be as many as one in 300, these so-called "elite" cases have mostly gone unnoticed because they are well, do not need treatment and do not want attention," says Dr Bruce Walker of Harvard Medical School.

However, researchers are keen to study this particular group, some of whom can live for 15 years or longer with the virus yet never fall ill. AIDS usually kills patients within two years if left untreated.

Walker has joined up with other prominent researchers to find at least 1,000 "elites" in North America alone. He estimates there are 2,000 such cases in the United States, and aims to locate as many as possible globally.

His team intends to run blood and DNA samples and compare key genetic sequences of the "elites" with genetic readouts from healthy people and from other HIV patients.

(Source: CNN Health)

XDR TB: AN EMERGING EXTREME THREAT?

In the 1990s, multi-drug resistant TB emerged as an infectious disease problem, due to resistance to at least isoniazid and rifampicin. As such, it required second-line drugs that were less effective, more toxic, and more expensive than first-line regimes using isoniazid and rifampicin.

Since the year 2000, multiple cases of TB have been found with resistance to several second-line drugs. These have been given the title of extensively drug-resistant TB (XDR TB). These cases, while still small in number compared to the total caseload of TB, are still of great concern – especially since they span multiple regions including the United States, Eastern Europe, Asia and Africa.

A survey of 18,000 TB samples by the United States Centres for Disease Control and the World Health Organisation between November 2004 and November 2005 found that 20% were multi-drug resistant, and a further 2% were XDR. Country-specific analyses showed that in South Korea, 15% of isolates tested were XDR. The United States and Latvia scored in at 4% and 19% respectively.

According to Dr Paul Nunn, co-ordinator of the WHO team at the Stop TB initiative, XDR TB is a major concern as its drug resistance may render it virtually untreatable. The emergence of XDR TB is of particular importance in areas where HIV infection is prevalent.

(Sources: Morbidity and Mortality Weekly Report, US CDC (23 Mar 2006) and BBC Online)

WEIGHING THE RISK OF DEATH

Obesity has been shown to pose numerous risks to health. Sun *et al* conducted a large prospective cohort study of 1.2 million Koreans between the ages of 30 and 95 years. They found that the risk of death from any cause had a J-shaped association with Body Mass Index (BMI), regardless of cigarette smoking history. This risk was lowest among participants with a BMI of 23.0 to 24.9.

In another study, conducted by Adams *et al*, BMI was prospectively studied in relation to risk of death, among a cohort of 500,000 men and women in the United States. These individuals were 50 to 71 years old at the time of enrollment. They concluded that excess body weight during midlife, including overweight not amounting to obesity, was associated with an increased risk of death.

(Source: NEJM (2006) 355:763-778 and NEJM (2006) 355:779-787)

NEW WEAPON IN BATTLE OF THE BULGE

A study published online by the Proceedings of the National Academy of Sciences shows promising results in rats given a vaccine against a "hunger hormone" called ghrelin.

Secreted primarily by the stomach, ghrelin helps regulate appetite, metabolism and weight, promoting weight gain and fat storage.

Led by Dr Kim Janda of the Scripps Research Institute in La Jolla, California, the team created ghrelin-recognising antigens, which triggered antibody production against the hormone when administered to rats. Despite having free access to food and eating as much as their unvaccinated mates, the immunised rats gained less weight and boasted leaner, less flabby physiques.

That the weight effects came without diet changes was a surprise, Janda said. It means that the ghrelin vaccine acted on metabolism and not appetite.

However, it is still a long way from success in rats to similar results in people, necessitating more research in animals and more data on safety before an obesity vaccine can be widely tested in humans.

(Source: CNN Health)

TOTAL RECALL CURBS OUTBREAK

Bausch & Lomb Inc's global recall of its popular ReNu with MoistureLoc contact lens solution in May appears to have stopped the spread of fusarium keratitis.

"We feel pretty confident that the outbreak is over," says CDC researcher Benjamin Park.

Clusters of infection were first reported in Singapore and Hong Kong earlier this year, with the product being

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pulled from those markets in February. As of 30 June 2006, researchers had identified 164 cases in the United States, of which 94% (154 patients) wore soft contact lenses. These hailed from 33 states, with about 34% requiring corneal transplants.

The study, published in the *Journal of the American Medical Association*, reports that infected contact lens wearers were 20 times more likely to have used Bausch & Lomb's ReNu formula than another solution.

Analyses of samples from the factory, warehouse, returned bottles and other sources concluded that the infection was not present in the solution, but most likely came from external sources, such as the users' homes.

Park and colleagues at the CDC in Atlanta also studied specific activities and hygiene practices associated with the infection, and found that lax hygiene alone could not have caused the outbreak. However, he notes that a number of patients reused old solution left in the contact lens case and warns against such practice.

(Source: CNN Health)

STUDYING THE IMMUNE RESPONSE IN H5N1 INFECTION

Since 2003, over 240 people have been diagnosed with H5N1 infection. Of these, more than 140 have died. However, information on the pathogenesis of human H5N1 infection has been limited, as many patients were treated in rural hospitals. Cultural taboos against post mortem autopsy have also limited pathological studies.

New information is now emerging, however. Vietnamese researchers have taken blood, nasal and throat samples from H5N1 patients, for comparison with H1N1 and H3N1 human flu. The team found that H5N1 replicates to levels hundreds of times greater than human flu strains. Unlike regular flu viruses which prefer the nose and throat, H5N1 apparently prefers the lower respiratory tract. Viral RNA was also detectable in the blood of H5N1 patients who subsequently died, suggesting a very high viral load in fatal cases.

Cytokines and chemokines were elevated in the blood of H5N1 patients, especially those who perished. This is consistent with the "cytokine storm" model of infection, where infection provokes an overwhelming immune response which in turn can cause multi-organ failure.

However, this hypothesis has not yet translated into significant clinical outcomes. While some physicians have tried using steroids in H5N1 infections, no clear benefit has been shown.

The leader of the Vietnamese study, Dr Menno de Jong, has called for more samples to be made available for testing. In particular, de Jong has cited the lack of sample taking as a limiting factor in H5N1 research. ■

(Source: Summarised in Nature Medicine online publication (8 Sep 2006), doi:10.1038/nm1493 and Nature Medicine online publication (2006) doi10.1038/nm1477)