**Bioterrorism: The Anthrax story**

Bioterrorism, the subject of an editorial and an article in a recent issue of *Nat Med J India* (2001;14:194–6 and 2001;14:225–30) has arrived. The story started soon after the 11 September bombings of the World Trade Center in New York. A 63-year-old employee at a media firm in Palm Beach County, Florida, presented to the local hospital with fever and altered mental status on 2 October. Despite antibiotic therapy, the patient deteriorated rapidly and died on 5 October. An autopsy revealed inhalational anthrax as the cause of death. Enhanced case-finding and prospective and retrospective surveillance was initiated in Palm Beach County. Environmental assessment revealed *Bacillus anthracis* contamination in the patient’s workplace, specifically involving mail and package delivery areas.

At the time of writing this report (5 November 2001), there were 17 confirmed and 5 suspected cases of anthrax. Of the 17 confirmed cases, 10 were of inhalational and 7 of cutaneous anthrax and were restricted to 4 geographic areas—Florida, New York City, Washington, D.C. and New Jersey. The median age of the patients with inhalational anthrax was 56 years and 7 of them were men. The median incubation period for these patients from the time of exposure to the time of onset of symptoms was 7 days. The symptoms were fever, sweats/chills, severe malaise, cough, pleuritic pain, abdominal pain, nausea and vomiting. Other symptoms were shortness of breath, headaches and myalgias. The cases have been linked to bioterrorism involving mailing of anthrax spores to media companies and governmental agencies. Of the 10 patients, 6 were postal workers, 2 mail handlers, 1 journalist and 1 hospital employee. Four have died and the rest are being treated for the infection.

The Centers for Disease Control (CDC) based in Atlanta, Georgia, has a pivotal role in this crisis. In addition to detection of cases and improving laboratory capacity, the CDC is collaborating with the Federal Bureau of Investigation. It also maintains a National Pharmaceutical Stockpile, which can be deployed if needed. Among a variety of medical and surgical supplies, the stockpile contains antibiotics as well as a smallpox vaccine supply. The CDC is currently involved in developing a protocol for identifying populations that should receive antimicrobial prophylaxis to prevent inhalational anthrax. Among postal workers, those working with electronic mail sorters are at greater risk due to exposure to the aerosolized particles generated by these machines. Environmental measures are being assessed to identify other factors promoting aerosolization as well as assessing the risk for anthrax in environments contaminated by spores and to develop standard guidelines for the clean-up of contaminated environments. For post-exposure prophylaxis, ciprofloxacin and doxycycline are both equally effective; doxycycline is preferentially recommended by CDC to prevent resistance to ciprofloxacin, which could develop if it is widely used for prophylaxis.

The American public, meanwhile, is trying to deal with this threat of bioterrorism even before recovering from the shock of the 11 September bombings. Although it has been tempting to link the two events, no conclusive data exist to support this. The bigger question is whether this is just a scare or whether there will be a true catastrophe. Another question is whether bioterrorism may involve agents other than anthrax, especially those that are more contagious such as smallpox, which will overwhelm available resources.

MUGDHA THAKUR, Durham, USA

**Death of a resident doctor**

A resident doctor in the Department of Surgery was operated upon for an appendectomy at the Government Medical College, Nagpur in September 2001. During surgery, he stopped breathing and turned blue. Panic followed in the operation theatre, for it lacked the equipment to offer advanced life support. A government superspecialty hospital within the campus possessed a couple of ventilators, but had no specialists to man the machines. A mob of irate residents took their colleague from the operation theatre and admitted him to a critical care unit in a private sector hospital. Even though he was ventilated, the doctor died a couple of hours later.

Iatrogenic, and at times unexplained, deaths are not new. Many patients die in hospitals every year—uncared for and unmourned. The press and resident doctors raised a hue and cry because the person who died was a doctor. His death, shrouded in mystery and veiled in secrecy, led to rumours floating around the city. The doctors and administrators continue to be tight-lipped; their silence has only served to fuel the speculation. A committee was promptly appointed to investigate the death, but its report has not been made public. Six weeks have passed, but neither the medical fraternity nor the lay public have been provided any information on this matter.

Several questions related to this death beg an honest answer: Was the doctor a casualty of the inefficiency and inadequacy ailing public hospitals? Why have public hospitals turned so moribund that they cannot handle emergencies any more? Why has the public been denied a right to information? And finally, will his death set public medical institutions straight?

S. P. KALANTRI, Sevagram, Maharashtra

**Academia-Pharmaceutical nexus challenged**

In recent years, funding for studies to test new drugs, vaccines and devices has increasingly come from the industry rather than governmental agencies or academic medical centres. As the cost of developing new products has increased, companies have tightened their control over every aspect of the research they sponsor. In a crackdown on the increasing tyranny of pharmaceutical sponsors on current research publications, the International Committee of Medical Journal Editors (including editors of prestigious journals such as the *Ann Intern Med, BMJ, JAMA, Lancet* and *N Engl J Med*) has condemned excessive control by drug companies over how the results of studies they sponsor are analysed, interpreted and reported. They say they will reject any scientific studies that do not come with an assurance that the sponsor—whether a drug company or any other organization—gave researchers complete access to the data and freedom to report the findings. Although declaring conflict of interests has been a guideline for authors by most journals, articles which reported beneficial drug effects are usually published, while citations...
with negative findings or adverse effects of drugs can be (and are) suppressed (or delayed for publication), by the sponsoring pharmaceutical companies for years. Under the new policy, journals ‘will routinely require authors to disclose details of their own and the sponsor’s role in the study’. The editorial statement published simultaneously in all the journals states: ‘Many of us will ask the responsible author to sign a statement indicating that he or she accepts full responsibility for the conduct of the trial, had access to the data, and controlled the decision to publish.’

This is a commendable and timely stand about an issue of intellectual responsibility. The respected peer-review journals are custodians of the global academic climate for clinical research and their publications form the basis of most treatment decisions. Undisclosed conflicts of interest can sound the death knell for the emerging trend of evidence-based medicine.

NOBHJOJIT ROY, Mumbai, Maharashtra

2001 Nobel—and IgNobel Prizes

The 2001 Nobel prize for Physiology or Medicine has been awarded to Leland Hartwell (Fred Hutchinson Cancer Research Centre, Seattle, USA), Paul Nurse (Imperial Cancer Research Fund, London, UK) and Tim Hunt (Imperial Cancer Research Fund, Hertfordshire, UK) for their discoveries, at the molecular level, of how the cell is driven from one phase to another in the cell cycle of all eukaryotes, including yeast, plants, animals and man.

Hartwell, in the early 1970s, worked on the yeast *Saccharomyces cerevisiae* and discovered numerous cell division cycle (CDC) genes, including CDC28 which controls the first step in the progression through the G1 phase—hence also called ‘start’. He also enunciated the concept of ‘cell cycle checkpoints’ which ensures that the cell cycle is arrested in the event of DNA damage, so as to allow repair to take place. In the mid-1970s, Nurse, using *Schizosaccharomyces pombe* identified CDC2, a gene that controlled entry into mitosis, i.e. from the G2 to the M phase. Later, he showed that CDC2 was identical to ‘start’. In 1987, he isolated the corresponding gene in man, later termed CDK1 (cyclin dependent kinase 1).

Tim Hunt, in the early 1980s, discovered cyclin A and cyclin B, proteins which were synthesized and then degraded at specific stages in the cell cycle. The cyclins bind to and activate p34 kinase, which then phosphorylates key substrates in the cell.

As cancer is often the result of a cell cycle gone awry, a better understanding of the cell cycle is essential to advance our concepts of neoplasia, as well as developmental and birth defects. New treatments for cancer may develop based on the findings made by these Nobel laureates.

Meanwhile, Indians who moan the fact that their medical scientists have never won a Nobel prize can take heart from the fact that some have at least been awarded the IgNobel awards. Given to people for ‘research which cannot or should not be reproduced’, this year’s winners in the field of public health were Chittaranjan Andrade and B. S. Srihari of the National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore. Their paper ‘A preliminary survey of rhinotillexomania in an adolescent sample’ (*J Clin Psychiatry* 2001;62:426–31) was awarded the Ig, as the awards are fondly called.

Rhinotillexomania is the habit of digging one’s nose. The researchers studied 200 students from 4 schools in the city to learn that nose-picking is a common habit; 7.6 % claimed to do so 20 times a day!

The awards were initiated by the journal *Annals of Improbable Research* (www.improbable.com) and were handed out by actual Nobel prize winners at a ceremony at Harvard University on 4 October 2001.

SANJAY A. PAI, Bangalore, Karnataka

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**Masala**

Treatment of burns is expensive and painful. The L.T.M.G. Hospital, Mumbai has succeeded in developing a banana leaf dressing for patients of burns. The burns unit there has been using these natural dressings since 1996 and has carried out two small trials comparing banana leaf dressing with petroleum jelly impregnated gauze and boiled potato peel bandage. The banana leaf dressing was found to be as comfortable and effective as the potato peel bandage. In a study on 30 patients undergoing skin grafting, banana leaf was significantly better than petroleum jelly gauze in healing burns. This natural dressing is also the cheapest dressing material available at 0.1 paise/cm² (*Indian J Surg* 2001;63:289–91).

Indian style toilets can be dangerous. Orthopaedic surgeons from Chennai have reported a series of 13 patients over a period of 5 years who had ruptured Achilles tendons. In all cases the foot had slipped and got stuck in the toilet and attempts to extricate it caused laceration of the skin and the underlying tendon. Eight of them had a complete tear and 5 a partial rupture. All patients were treated by primary surgical repair (*Indian J Orthop* 2001;35:52–3).

Why do dying patients want physician-assisted suicide? It has always been believed that depression and physical pain are the main reasons. However, a recent study from Ontario, Canada found that loss of dignity and loss of community were more important reasons. Thirty-two patients infected with HIV were interviewed, 20 had decided to pursue assisted suicide, 3 had decided against it and 9 were undecided. Loss of community was experienced as disownment by families, history of physical and sexual abuse and deterioration of social role (*Lancet* 2001;358:362–7). An accompanying editorial points out that policies asking clinicians to make judgements about ‘intolerable suffering’ of a patient do not take into account the loss of community described in this study.