



To News Editor
For Immediate Release

16 August 2005

Drug-Associated Heat Stroke

Exposure to high environmental temperature can cause heat stroke. To have a better understanding why heat-related illnesses have occurred in Hong Kong and what preventive measures are necessary, the Centre for Food and Drug Safety of the Faculty of Medicine of The Chinese University of Hong Kong analysed the cases that were admitted to the Prince of Wales Hospital during 1998-2004. There were 15 males and 6 females, including a 48-year-old man who was admitted twice. Their age ranged from 20 to 88 years. Four subjects were over 65 years of age. Twelve subjects had heat stroke with different degrees of organ damage and four required intensive care. Eight subjects had heat exhaustion. One had heat syncope. Patients were discharged after an average hospital stay of five days (range 1 to 15 days).

Apart from high environmental temperature, strenuous physical exertion and other factors, drugs and alcohol could have contributed to the heat-related illnesses in four subjects. A 48-year-old man receiving an antipsychotic drug and an anticholinergic drug was admitted in June 2004 because of heat stroke. He stayed in hospital for 13 days. He was readmitted in August 2004 because of heat exhaustion. One subject was receiving medicines for treatment of flu. One subject had alcohol before strenuous physical work in the outdoor.

A number of drugs and herbs can affect the body's ability to regulate body temperature during exercise or under environmental heat stress. Anticholinergic drugs can inhibit sweating, thereby reducing heat elimination. Antipsychotics have anticholinergic and central thermoregulatory effects. The set point of the temperature-regulating centre can be elevated by antipsychotics. Sympathomimetics can elevate the body temperature by two mechanisms. Firstly, vasoconstriction decreases skin blood flow and hence heat loss. Secondly, metabolic heat production is increased. Diuretics, by causing volume depletion, and beta-blockers, by impairing cardiac performance, may induce or worsen heat-related illnesses. Certain herbs and drugs of abuse may impair thermoregulation (e.g. anticholinergics in the *Datura* species) or increase metabolic heat production (e.g. ephedrine, ecstasy, amphetamines and cocaine). Alcohol can be dangerous in the heat, through depression of the central nervous system and by causing diuresis and consequent dehydration. Patients receiving these drugs and herbs should pay even more attention to preventive measures against heat-related illnesses. Patients should also consult their doctors and pharmacists about the possible effects of these drugs on thermoregulation.