



Hypothermia

Many physicians in Canada will see patients with hypothermia this winter. Ninety-one Canadians died of hypothermia in 1995, and each year many more are treated for the problems caused by low body temperature. The US Centers for Disease Control and Prevention (CDC) recently reported a case in which an 80-year-old woman with Alzheimer's disease and parkinsonism wandered fully clothed from a nursing home and was discovered dead 12 hours later in a ditch nearby.¹ The temperature during the time she was outside was 4°C. This is only one example of the circumstances that can lead to hypothermia-related death.

Hypothermia is defined as a core body temperature of 35°C (95°F) or lower. It should be treated as a medical emergency. Shivering is an early indication. As the core temperature declines, neurologic abnormalities such as amnesia, dysarthria, ataxia and confusion may develop. Elderly people, people who are homeless or mentally ill, outdoor workers, trauma victims and people with serious medical problems are particularly at risk. Use of alcohol or drugs, particularly sedatives, anxiolytics, phenothiazines and tricyclic antidepressants, is a contributing factor in many cases. The fact that signs of acute alcohol intoxication and drug overdose are similar to those of hypothermia may lead the physician to miss the correct diagnosis. Other drug-related factors may further confuse the clinical presentation. For example, opiates, sedatives and anxiolytics impair judgement. Phenothiazines, sedatives and anxiolytics often reduce the shivering response, and phenothiazines and vasodilators cause peripheral vasodilation.²

Patients with severe hypothermia (core temperature less than 32°C) may appear dead or may have hypotension, apnea or cardiac arrhythmias. Hematologic, respiratory, renal and endocrine abnormalities are common in severe hypothermia.²

Extreme cold is not necessary to overcome a person's ability to conserve heat, and hypothermia can occur in susceptible people even at moderate ambient tempera-

tures. The diagnosis is made by accurately measuring core temperature. Most standard thermometers do not record temperatures below 34°C, so a cold-recording rectal thermometer may be needed.

Initial treatment when the person is discovered should include immediate provision of dry, warm clothing. If the person is conscious, warm fluids can be given and muscular activity encouraged. The person should be taken to a warm, dry shelter. If the person cannot be moved, bodily contact with a healthy companion can accomplish re-warming.³

Rewarming should be gradual to avoid precipitating cardiac dysrhythmias. In hospital, passive rewarming using blankets and other insulating materials may be sufficient. Immersion in warm water or the use of electric blankets is not recommended, as these methods appear to induce a further drop in core temperature. Active rewarming of the body core by intravenous administration of fluids, or gastric or colonic irrigation with warm fluids, has been advocated but not evaluated.³ Cardiac arrhythmias and respiratory, renal, hematologic and endocrine abnormalities require specific treatment, but the response to such treatment is often blunted by the hypothermia itself.

Physicians should promote public health strategies to prevent hypothermia. This includes providing advice to vulnerable patients about wearing adequate clothing (particularly headgear), maintaining fluid and caloric intake, and refraining from alcohol consumption. Outreach programs are needed for homeless people, especially during cold spells. During extremely cold weather, elderly people living alone should be monitored by friends or neighbours. — JH

References

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