

Urban hypothermia in the west of Scotland

L J Hislop, J P Wyatt, G W McNaughton, A J Ireland, T H Rainer, G Olverman,
L M Laughton for the West of Scotland Accident and Emergency Trainees Research Group

Department of
Accident and Emergency
Medicine, Royal Alexandra
Hospital, Paisley,
Renfrewshire PA2 9PL
L J Hislop, registrar

Department of
Accident and Emergency
Medicine, Royal Infirmary,
Edinburgh EH3 9YW
J P Wyatt, senior registrar

Department of
Accident and Emergency
Medicine, Western
Infirmary, Glasgow
G11 6NT
G W McNaughton, registrar

Department of
Accident and Emergency
Medicine, Glasgow Royal
Infirmary, Glasgow G4 0SF
A J Ireland, senior registrar

Department of
Accident and Emergency
Medicine, Monklands
District General Hospital,
Airdrie, Lanarkshire
ML6 0JS
T H Rainer, registrar

Department of
Accident and Emergency
Medicine, Victoria
Infirmary, Glasgow
G42 9TY
G Olverman, registrar

Department of
Accident and Emergency
Medicine, Southern
General Hospital, Glasgow
G51 4TF
L M Laughton, staff grade
officer

Correspondence to:
Mr Wyatt.

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To our knowledge, the epidemiology of hypothermia in Britain is unknown: there have been no studies in a large population. Concerns about risks of hypothermia in socially isolated elderly people have resulted in calls for efforts aimed at prevention.¹ Controversy about the increased cost of fuel have added to these concerns.²

Patients, methods, and results

Patients presenting to hospital in Glasgow, Paisley, Coatbridge, or Airdrie with rectal temperatures below 35°C were studied prospectively during the winter of 1993-4 (1 December to 31 March). All eight accident and emergency departments serving a continuous, defined urban population participated. Accident and emergency staff and ambulance crews collected data. Patients' relatives, neighbours, and general practitioners and social services departments provided additional information. Patients were followed up to discharge, transfer to long stay wards, or death.

Ninety three patients presented with hypothermia. Given that the study population was 1 300 000,³ the rate of presentation to hospital was 1 per 14 000 people per winter. Although patients presented throughout the 17 weeks of the study, the rate of presentation varied according to ambient temperatures, with 12 patients presenting during the week with the lowest temperatures.

Fifty nine patients were mildly hypothermic (core temperature >32.2°C): 12 (20%) died. Thirty four patients presented with severe hypothermia (temperature ≤32.2°C): 17 (50%) died. Sixty nine patients were found inside and had different characteristics from those found outside (table).

Characteristics of patients admitted for hypothermia. Values are numbers (percentages) unless stated otherwise

	Found inside (n=69)	Found outside (n=24)	Overall (n=93)
Men	29 (42)	16 (67)*	45 (48)
Mean age (range) (years)	76 (40-97)	52 (13-89)†	70 (13-97)
Severe hypothermia	28 (41)	6 (25)	34 (37)
Died	27 (39)	2 (8)*	29 (31)
Implicated causes:			
Alcohol	20 (29)	19 (79)*	39 (42)
Fall or immobility	18 (26)	3 (13)	21 (23)
Confusion	15 (22)	2 (8)	17 (18)
Infection	9 (13)	1 (4)	10 (11)
Cerebrovascular accident	8 (12)	0	8 (9)
Diabetes	4 (6)	1 (4)	5 (5)
Self neglect	3 (4)	0	3 (3)
Immersion in river Clyde	0	2 (8)	2 (2)
No obvious cause	5 (7)	1 (4)	6 (6)

*Proportions significantly different between patients found inside and those found outside, according to χ^2 test ($P < 0.05$).

†Proportions significantly different between patients found inside and those found outside according to Student's *t* test ($P < 0.05$).

Sixty six of the 69 patients found inside were in their own homes. Fifty three lived alone and 27 did not have a regular daily visitor. Forty two patients had not been seen for over 24 hours. Details of heating were recorded for 48 of the 53 patients living alone: 28 had

central heating, 18 had other heating, and two had no heating. Two thirds of the patients with heating (31/46) had it switched off when they were found.

Comment

The true incidence of hypothermia is difficult to define. Only 300 people are officially recorded as dying of hypothermia in England and Wales annually.⁴ Extrapolation of our results for the whole of Britain yields 4000 hospital admissions, with over 1000 deaths from hypothermia. Any extrapolation may be a considerable underestimate: many elderly people found dead at home may have died of hypothermia.

Patients found hypothermic outside differed from those found inside. Those found inside comprised a large number of socially isolated elderly people who had been found hypothermic in their own homes: mortality was high. The importance of regular daily visits by someone (family, neighbour, or someone from the social services department) to elderly people living alone has been previously noted but deserves re-emphasis.¹ Isolated elderly people with associated problems (poor mobility, confusion, self neglect, and various medical conditions) are at greatest risk of hypothermia. Such patients could be identified from general practitioner records and be targeted for special attention, which could include an assessment to check whether extra social support is required.

Excess winter mortality in Britain is greatest among socially deprived people with the worst heating.⁵ In this study most of those who became hypothermic at home had heating available but were not using it. One reason why elderly people may not use heating during cold weather is the cost, or perceived cost, of fuel. The now abandoned government proposals to add full rate value added tax (VAT) to fuel were met with concern by doctors.² It remains a worry that future increases in fuel bills may influence elderly people to use heating even more sparingly, placing even more of them at risk of hypothermia.

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