ELSEVIER

Burns 31 (2005) 717–720

BURNS

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Elderly patients discharged home from the emergency department with minor burns

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Accepted 8 December 2004

Abstract

Objectives: To describe the risk factors, etiology and referral patterns of elderly patients treated for minor burns in an urban emergency department (ED).
Methods: A retrospective chart review was conducted of persons aged 65 years and older who were treated for a minor burn and discharged home from the ED. Medical records were reviewed for 77 burn patients that presented over a 6-year period.
Results: Burn patients had significant co-morbid medical illness. The etiology of the burns was scalds (58%), contact (27%) and flame (12%). Sixty-eight percent of the burns were cooking related. Heating pads, curling irons or hot pipes accounted for the majority of contact burns. Three percent of burn patients were referred to a home care agency for a home safety evaluation at the time of discharge from the ED.
Conclusion: Cooking-related activities accounted for the majority of minor burns in this series. Common consumer items or environmental hazards were responsible for most contact burns. Elderly patients seen in the ED with minor burns were rarely referred to a home care agency.

Keywords: Minor burns; Elderly; Cooking

1. Introduction

Burns and fires are the fifth leading cause of death from accidental injury for persons aged 65 years and older in the United States, and accounted for over 500,000 emergency department (ED) visits in the United States in 2001 [1,2]. The etiology of major burns in elderly patients admitted to burn centers was flame or flash (51–81%) followed by scald (11–30%) and contact with hot solids (5–7%) in multiple large studies [3–6]. Scalds accounted for a higher percentage of admissions (41–66%) in several smaller series [7,8]. Co-morbid medical illness is the most important risk factors for major burns in these series of elderly persons requiring admission to burn centers. Cardio-pulmonary disease, diabetes mellitus and neurological illness are the most common; other risk factors include alcohol, cigarette smoking and substance abuse.

It is estimated that of the 1.1 million annual burn injuries requiring medical attention in the United States, only 5% of the patients require hospital admission [9]. The majority of burns are minor and do not come to medical attention or are managed exclusively in the outpatient setting. The contemporary literature on minor burns in the elderly is extremely limited and includes a study from Virginia in the 1970s [10] and data from the South West of France [3]. In these outpatient series, scalds accounted for up to 50% of minor burns and contact burns 14%. It is not known whether minor burns are a risk factor for a subsequent major, life threatening burn.

For elderly patients with minor burns that come to medical attention, there is no data on referral patterns to home care agencies or the impact of home safety evaluations on the occurrence of future burns. Community dwelling

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0305-4179/$30.00
doi:10.1016/j.burns.2004.12.008

older adults in the United States can be referred to a home care agency if they require skilled medical services. Allied health professionals, including nurses, physical and occupational therapists, have the opportunity to identify and modify potential environmental and behavioral risk factors when visiting a patient in their home environment as part of a home safety evaluation.

The present study was undertaken to examine the etiology and risk factors for minor burns in elderly persons that present to our urban ED. Data were also collected on whether burn patients were referred to a home care agency at the time of discharge from the ED.

2. Methods

A retrospective medical record review for a 6-year period (1 January 1997–July 2003) was conducted of all patients aged 65 years and older who were treated in the ED for an ICD-9 diagnosis of a burn, at Montefiore Medical Center, Bronx, New York, and subsequently discharged home. Exclusion criteria included: hospital admission, transfer to a burn center, elopement from the ED, chemical or other non-thermal burn. From a total of 132 cases, 105 charts were available for review and 28 of these were excluded. A total of 77 cases were included in the study. Data were collected from the ED medical record by a single abstractor, using a standardized abstraction review form. The abstracted data were reviewed for accuracy by one of the investigators. This study was reviewed and approved by the institutional review board of the medical center.

3. Results

3.1. Patient characteristics

Seventy-five percent of the burn patients were female and 53% were aged 75 years or older. Burn patients had significant co-morbid medical illness including: diabetes (29%), osteoarthritis (14%), cerebrovascular accident (6%) and dementia (4%). Alcohol use was identified in 4% of burn patients (Tables 1 and 2).

Table 1
Demographics ($n = 77$)

	No. (%)
Sex	
Male	19 (25)
Female	58 (75)
Age	
65–74	36 (47)
75–84	26 (34)
85+	15 (19)
Race	
White	22 (29)
Black	31 (40)
Hispanic	15 (19)
Other	9 (12)

Table 2
Patient characteristics ($n = 77$)

	No. (%)
Medical conditions	
Diabetes mellitus	22 (29)
Osteoarthritis	11 (14)
CVA	5 (6)
Dementia	3 (4)
Alcohol use	3 (4)

Table 3
Etiology of burns

Etiology of burns	No. (%)
Scald	
Cooking related	39 (51)
Bathtub	3 (4)
Sink	2 (3)
Other	1 (1)
Total	45 (58)
Contact	
Heating pads/hot water bottles	7 (9)
Cooking related	6 (8)
Curling iron/hair dryer	4 (5)
Hot pipes/radiators	3 (5)
Other	1 (1)
Total	21 (27)
Flame	
Cooking related	7 (9)
Cigarettes	1 (1)
Other	1 (1)
Total	9 (12)
Other	2 (3)

3.2. Cause of burns

Scald burns were the most common (58%), followed by contact (27%) and flame (12%) (Table 3). Ninety percent of the burns occurred in the home and 65% in the kitchen (Table 4). Cooking-related burns accounted for 68% of burns in all categories, and scald was the most common etiology of cooking-related injury (Table 5). Contact burns

Table 4
Setting of burns

	No. (%)
Kitchen	50 (65)
Bathroom	10 (13)
Bedroom	8 (10)
Other	1 (1)
Total home	69 (90)
Outside home	6 (8)
Unknown	2 (3)