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Pitfalls in the emergency department triage of frail elderly patients without specific complaints

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Summary

Question under study: Elderly patients represent an increasing proportion of emergency department (ED) admissions. When no specific complaint is identified, the reason for referral is commonly called "home care impossible". The aim of this study was to describe a population of elderly patients who present to the ED of a 1200-bed university hospital without specific complaint, and to assess how they were evaluated in the ED.

Methods: Data on triage, mode of admission and discharge were collected. After the initial evaluation in the ED, patients were classified in two categories: (1) patients identified with a medical problem requiring rapid care or investigation, (2) patients without a medical problem considered as true "home care impossible". These latter patients underwent a complete assessment using the Minimal Data Set-Home Care (MDS-HC).

Results: During the 10-week study period 253 patients (mean age 81 years) were referred because of "home care impossible". An acute medical problem was identified in 129 of those patients (51%). All these patients were triaged in lower acuity categories. 33 (26%) were undertriaged due to (1) absence of vital signs measurement, (2) poor recognition of neurological symptoms, (3) atypical clinical presentation. The remaining patients were considered as true "home care impossible". The MDS-HC evaluation revealed a high level of biopsychosocial comorbidities.

Conclusions: Frail elderly patients admitted without specific complaints are at risk of inappropriate or delayed evaluation due to undertriage at the door of the ED. A more specific geriatric assessment should be integrated early in the triage process of these patients.

Key words: frail elderly; emergency service; hospital; triage; geriatric assessment

Introduction

Elderly patients represent an increasing proportion of emergency department (ED) admissions [1, 2], accounting for approximately 20% of all ED visits [2–4]. Compared to younger patients this population has specific characteristics: (1) unclear complaints and difficult triage, (2) more frequent hospital admissions, (3) increased resources utilization, and (4) higher rate of adverse health outcomes [4, 5]. Moreover, emergency physicians feel frequently uncomfortable when evaluating these patients, which may have a negative impact on care [6–8].

Up to 20% of elderly patients presented to the ED have no specific complaints but "general condition impairment" [9], often reflecting insufficient formal or informal out-of-hospital social and/or nursing support. These patients are referred to the ED either by their families, their primary care physicians, or by an ambulatory emergency service and the reason for admission is currently entitled "home care impossible". Given the lack of specific complaints and objective signs or symptoms, we hypothesized the triage process of these patients to be suboptimal.

The objective of this exploratory study was to describe the clinical characteristics of a population of elderly patients who present to the ED with a complaint of "home care impossible" and to assess how these patients were evaluated and triaged in the ED.

No financial support declared.

Patients and methods

Setting

This was a exploratory observational study of all consecutive patients older than 65 years presented to our ED during a 10-week period, and in which "home care impossible" was considered as the main reason for admission. Our hospital is a 1200-bed primary and tertiary care university hospital and our ED admits 60000 patients per year. We serve an urban area with strong state-funded home care services.

Patients

Patients were classified as having " home care impossible" in the following situations: (1) when their primary care or referring physicians explicitly noted on their referral note that home care services and/or social and familial support were not able to support the patient at home anymore; (2) when the triage nurse could not identify any specific chief complaint except insufficient social, familial and/or nursing support.

ED triage and evaluation

Our ED uses a 4 level triage scale adapted from the Canadian Emergency Department Triage and Acuity Scale (CTAS) [10]. Triage is performed by trained nurses specialized in emergency care, and a triage level (1 to 4) is attributed to patients following history and vital signs measurement when indicated. This scale is used to determine for each level the acceptable time delay before the patient should be seen:

level 1. patients should be evaluated immediately;

level 2. patients should receive medical evaluation within 20 minutes;

level 3. patients are considered as less urgent and should be evaluated within 2 hours; finally,

level 4. patients are considered as non urgent.

Using our triage scale, patients admitted with a chief complaint of "home care impossible" are usually classified in lower acuity categories (level 3 or 4). 45 different triage nurses are involved in this process in our ED. They all received a formal training on the use of our triage instrument and on the importance of vital signs measurement in order to determine the appropriate emergency level.

In the ED, all patients had a standard evaluation performed by internal medicine residents under the supervision of permanent ED staff. This evaluation included a clinical history and complete physical exam, laboratory tests (blood cell numeration, glucose, Na, K, urea, creatinin), urine analysis and chest X-ray. After the initial evaluation, patients were classified in two categories: (1) patients for whom the initial evaluation identified a medical problem requiring rapid care or additional investigation; (2) patients for whom the initial evaluation confirmed the absence of acute medical problem and in whom the chief admission reason was adequately considered as primarily due to insufficient social, familial and/or nursing support.

Data collection

A research nurse was available daily in the ED and collected baseline data on triage, mode of admission, discharge diagnosis, and final orientation after patients left the ED. Patients without an acute medical problem underwent an additional assessment using the Minimal Data Set Home Care (MDS-HC) instrument [11]. This instrument is a multinationally developed instrument offering a comprehensive psychosocial geriatric assessment. It is widely used in community care programmes and is in the process of being implemented in all home care services in Switzerland. It was developed to provide a common language for the assessment of the health status and care needs of frail elderly people living in the community. The MDS-HC components explore multiple functional domains. The assessment is divided into the following sections: cognition, communication, vision, mood and behaviour, social functioning, informal support services, physical functioning (IADL and ADL), continence, disease diagnoses, preventive health measures, health condition, nutrition/hydration, dental status, skin condition, medications, adherence to treatment, and environmental assessment. This instrument aims at improving not only the evaluation but also the management of home care patients. Whenever the patient has a problem that is recognized by the MDS-HC, an indicator is triggered. This indicator is used to guide deeper evaluation and develop an individualized health care plan.

Our institutional ethics committee approved the study and all patients participating in the structured interview gave their informed written consent.

Data analysis, statistical methods

Mean and 95% confidence intervals were calculated using SPSS 11.0 for Windows.

Results

During the study period, 253 patients were identified by the triage nurse as having "home care impossible". 60% were female, and the median age was 81 years (range: 65 to 97). The majority of the patients was referred by their primary care physician (36%) or by an out-of-hospital emergency care physician (39%). Remaining patients (25%) were referred by their families or came by themselves. More patients were admitted during weekdays than during the weekends. The mean (95% confidence interval) number of patients admitted during weekdays was 4.0 (3.6–4.5) per day, compared to 2.0 (1.5–2.4) patients admitted every day during weekend days. Most of the patients were admitted during the day, as only 16% were admitted between 7 pm and 7 am, and only 7.6% between 10 pm and 7 am. During the study period 11639 patients were admitted at our ED; 2729 of them were 65 years or older. Hence, patients admitted for "home care impossible" represent 9.3% of the geriatric population seen in our ED during the 10-week study period. In 38% of the situations, the admission note written by the referring physician clearly stated that care was no longer possible at home and the triage nurse could not identify more specific complaints that could explain this situation. In the remaining situations, the initial evaluation performed by the triage nurse identified a lack of social or familial support as the primary reason for admission; accordingly to our

triage rules, these patients were classified as "home care impossible".

After initial medical evaluation in the ED a diagnosis considered as acute because it required treatment without delay, was established in 129 of the 253 patients (51%) (figure 1). The most common medical conditions were infections (mostly pneumonia), cardio-vascular problems (congestive heart failure and ischemic heart disease), neurological problems (stroke), delirium and fractures (table 1). These acute problems were considered responsible for the patients' non-specific complaints. These patients were triaged in lower acuity categories (3 and 4). However, based on ED discharge diagnosis, clinical presentation and vital signs measurement, 33 (26%) should have been triaged in a higher category (table 1). Reasons for undertriage were absence of vital signs measurement (n = 16), poor recognition of neurological symptoms (n = 9) and atypical clinical presentation (n = 8). For these patients, care and treatment was delayed due to undertriage.

In the remaining 124 patients (49%), evaluation provided no acute conditions and their chief problem was considered as true insufficient social, familial, and/or nursing support ("home care impossible"). When possible these 124 patients underwent the structured interview. This was not possible for 63 of them because of dementia (n = 33), refusal (n = 15), and logistical problems (n = 15).

Finally, 61 were interviewed (figure 1). 60% were female, and the median age was 81 years, the same as in the full population. The median number of MDS-HC indicators was 13 per patient (range 4–20), representing a high level of biopsychosocial comorbidities. The most frequent indicators are summarized in table 2. These indicators represent chronic conditions that were not always previously identified but altogether explained the difficulties to maintain the patients at home. Their admission mode was not different from the patients who were not interviewed and from the patients finally diagnosed with an acute medical condition (figure 1).

After their stay in the ED, all but 14 patients (6%) were admitted (figure 1). 39% were admitted in an acute medical and surgical ward, and 55% in a geriatric or rehabilitation unit. Patients diagnosed with an acute medical problem during their stay in the ED were more frequently admitted to an acute care unit (57%) than the other patients (22%). Patients without specific complaint were not rarely (22%) admitted in an acute medical unit due to lack of place in geriatric or chronic care units.

Figure 1

Mode of admission and discharge destination of 253 patients admitted in he ED without specific complaints.

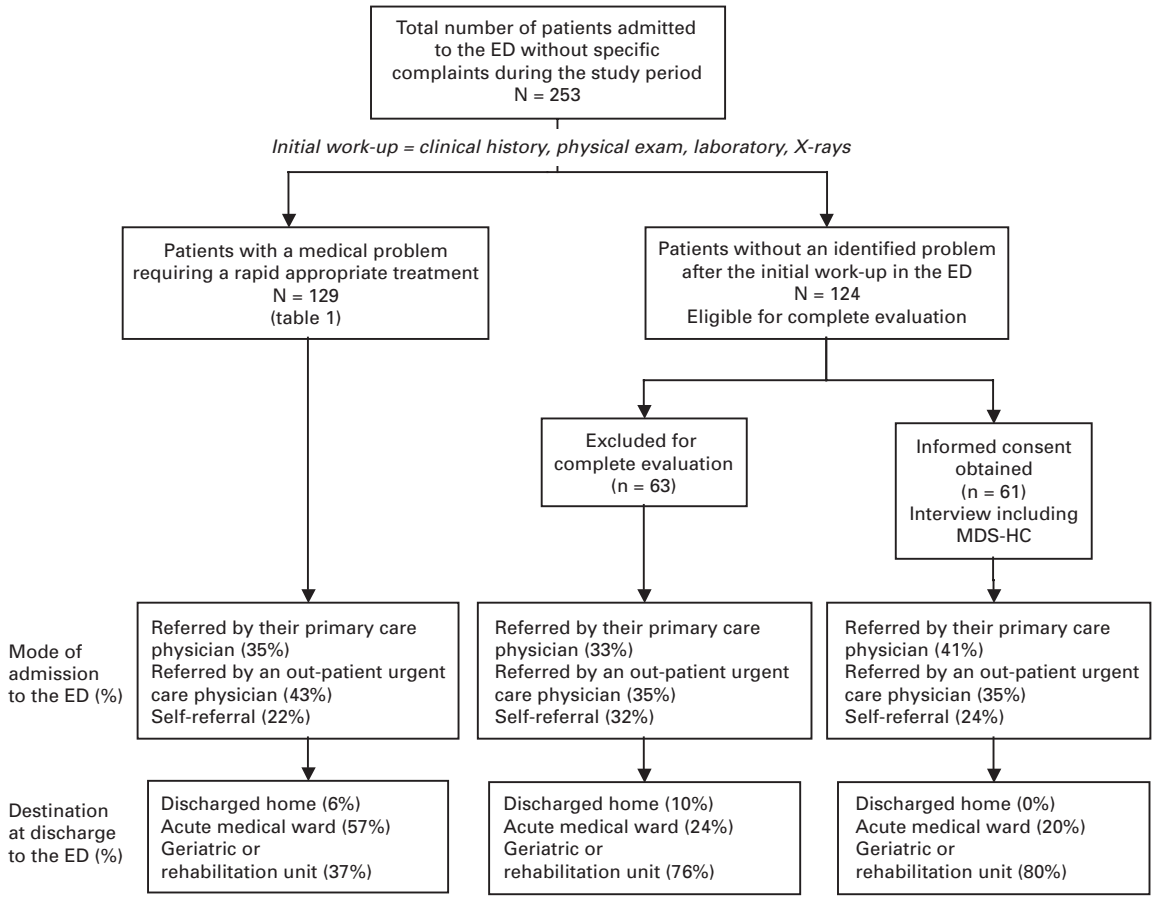

Table 1

Discharge diagnosis from the ED in 129 patients admitted for "home care impossible" and in whom the initial work-up identified an acute medical problem explaining the patient's non-specific complaints; number of patients who were under-triaged by he triage nurse.

		# of patients	# of undertriaged patients
Cardio-vascular	18 (14%)		
Heart failure		7	2
Myocardial infarction / angina		3	3
Arrhythmias		4	1
Syncope		2	
Ruptures abdominal aortic aneurysm		1	1
Hypertension crisis		1	1
Pulmonary	6 (5%)		
Acute exacerbation of COPD		3	2
Pulmonary embolism / venous thrombosis		3	1
Digestive	9 (7%)		
Non-specific abdominal pain		7	
Inguinal hernia		2	
Neurological	12 (9%)		
Stroke / transient ischemic attack		7	7
Radicular compression		5	
Infectious	31 (24%)		
Pneumonia		11	3
Flu-like syndrome		6	
Gastro-enteritis		3	
UTI		2	
Diverticulitis		2	
Sepsis		2	2
Tuberculosis		2	
Others		3	
Others	39 (30%)		
Delirium		8	8
Fractures		7	
Anaemia		6	
Acute renal failure		5	
Cirrhosis		1	
Minor trauma		1	
Arthritis		2	
Hyperosmolar diabetic decompensation		1	1
Hypoglycaemia		1	1
Hyponatremia		1	
Uncontrolled pain		6	
Non-specific alteration of general status	14 (11%)		

Table 2

Biopsychosocial indicators triggered by the MDS-HC evaluation in 61 patients admitted in the ED without specific complaints (% of patients with the specified indicators).

Problem with instrumental activities of daily living	90%
Problem with activities of daily living	53%
Communication problem	75%
Cognitive decline	61%
Depression	62%
Alteration of social functioning	57%
Dehydration	41%
Falls	67%
Nutrition problem	56%
Bladder incontinence	48%
Use of psychotropic drugs	57%

Discussion

Three to four elderly patients were brought to our ED per day because they became too difficult to manage at home by their caretakers. This represents approximately the same number of patients admitted daily for other medical conditions such as syncope, acute poisoning, or abdominal pain. Despite the lack of specific complaints at admission, an acute medical problem was identified in more than half of them. These patients were systematically undertriaged.

The triage process of these patients is particularly difficult and various parameters may explain these difficulties. First, elderly patients have different and more atypical presentations compared with younger adults [12]. Cognitive and functional impairment, multiple comorbidities, communication problems, and chronic or subacute presentation of actual illness may explain this phenomenon. Second, busy ED nurses and physicians tend sometimes to underestimate the severity and the acuity of complaints among elderly patients. Thus, they may neglect this frail population of elderly patients [3, 13–15].

Our results raise the question of the optimal triage process for these patients. Because time constraints do not allow a thorough evaluation of this frail population [16], standardized procedures should help triaging these patients. Various triage scales have been developed and are used routinely in EDs. However, none has been tailored or validated for this population [10, 17, 18]. In our institution, we have been using a four-level triage algorithm based on the evaluation of the patient's chief complaint, symptoms' severity, and vital signs measurements. This instrument is based on the Canadian Triage and Acuity Scale and on the Australian National Triage Scale [10, 17]. This scale was designed for a general adult population and has no specificity for a geriatric population. Using this triage scale, all patients included in our study were triaged in low acuity categories. This clearly questioned the validity of our algorithm for the evaluation of elderly patients.

Different ways could be explored to improve the initial management of these patients. First, the impact of a resource based triage scale and a more systematic use of vital signs should be evaluated. The Emergency Severity Index (ESI), a five-level resource based instrument, is widely disseminated in the US ED [18]. Using this instrument, all patients included in our study would have been triaged at least in category 3 and vital signs would have been measured for every patient. Although the impact of a systematic measurement of vital signs on patients' outcome is questioned [19], at least 12% of the studied patients would have been upgraded in a higher emergency category following vital signs assessment. Second, a better training of emergency nurses and physicians in the recognition of atypical clinical presentation and in the identification of patients at high risk could also improve this process. Although a specific geriatric emergency medicine curriculum has been developed, its impact on the care of elderly patients should be evaluated [20]. Third, the importance of functional decline, psychosocial dysfunction and the impact of comorbid conditions on the outcome of elderly patients in the ED are frequently underestimated [4, 21, 22]. Therefore, a systematic and more thorough geriatric assessment is crucial to better and earlier identify seniors at risk [22, 23]. This geriatric assessment using simple scores combining medical and social factors (ie lack of social support or marital support) could help predicting early and repeated returns to the ED. During the study period, we used the MDS to evaluate our patients. Although this instrument has not been designed and is too complex to be used in the ED, its use in the community has been associated with decreased ED use [24, 25]. Finally, a better integration of health care services, a better coordination between the ED and home care services would be highly important to provide care to this population, and could help gather timely information on the patient's condition prior to admission and on the actual home nursing and social support. This may help the ED physician to better evaluate the patient in his entirety.

Our study has some limitations. First, it was performed in an urban environment with a strong home care service. Thus, this may not reflect the reality of other EDs. Second, a complete evaluation of the patients' complexity was feasible in only a subset of patients who accepted or were able to sustain a 45 minutes interview. Third, although the MDS-HC questionnaire used for the evaluation of our patients gave us detailed information on their biopsychosocial status at admission, this instrument has not yet been validated for patients in ED settings. Fourth, we did not have a strictly standardized initial work-up. Therefore, it was impossible to conclude about the optimal baseline work-up that could be proposed for the ED evaluation of these patients without specific complaints. Finally, the study focused on the initial evaluation of these patients in the ED. Follow-up might have identified additional medical problems in patients initially identified as true "home care impossible".

In conclusion, frail elderly patients admitted without specific complaints are at risk of inappropriate or delayed evaluation during the triage at the entry of the ED. This might have a negative impact on their care. As it is one of the missions of the ED to take care of this particularly fragile population when home care is no more possible, specific protocols for their management should be tailored to their needs in order to limit the risk of inadequate evaluation.

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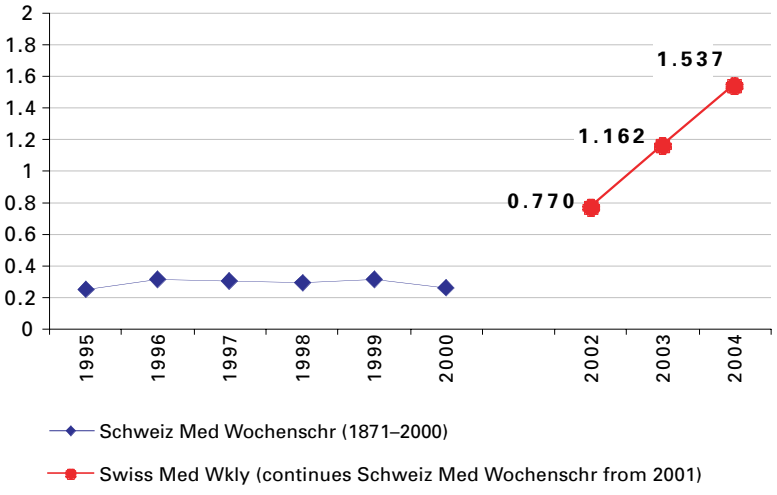

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