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ORIGINAL RESEARCH

Analysis of patient-related factors associated with post-discharge adverse events in older patients quickly discharged home after emergency department care with no complementary investigations

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Abstract

Background: To investigate factors associated with post-discharge adverse events in older patients discharged after emergency department (ED) care with no complementary investigations (CI)-blood test (BT), X-ray (XR) or both. **Methods**: We included patients ≥65 years who attended 52 Spanish EDs and were discharged home in ≤12 hours from 01–07 April 2019. The outcomes assessed were post-discharge combined adverse event (CAE) (all-cause ED revisit, hospitalization or death) occurring within the next 30 days. We analyzed whether age, sex, comorbidity, functional capacity, ability to walk, previous falls, dementia, depression and polypharmacy were associated with outcomes, and whether these outcomes differed compared to discharged patients undergoing CI. **Results**: We identified 4976 patients (mean time in ED: 1.44 hours, 95% confidence interval (CI): 1.41–1.47) and 1048 (21.4%) presented a CAE, associated with increased comorbidity, decreased functional capacity and polypharmacy but not with age. Compared with patients discharged after CI and spending 3.08 (3.05–3.11) hours in the ED, the CAE of patients without CI did not significantly differ (1208 cases, 22.2%, adjusted Hazard ratio (HR): 1.032, 95% CI: 0.949–1.122). Performing BT and XR increased ED time by 2.07 (1.59–2.15) and 0.35 (0.31–0.40) hours, respectively, while the increase when ordering both investigations was 2.23 (2.17–2.31) hours. **Conclusions**: ED discharge of older patients without CI does not increase risk of post-discharge events or shorten the time in ED. Age is not related to the risk of post-discharge adverse events, but comorbid and dependent patients with polypharmacy should be cautiously considered for being at increased risk of adverse outcomes.

Keywords

Direct discharge; Emergency department; Older; Revisit; Hospitalization; Death

1. Introduction

Many older people have a greater number of comorbidities and functional and cognitive limitations and, as a result, they are frequent visitors to emergency departments (EDs). Roughly between one quarter and one third of ED visits are by people aged 65 years or older [1–4].

One of the reasons for the overcrowding of EDs is the increasing care of frail patients, with a greater number of chronic diseases and are susceptible to acute episodes of worsening, and processes associated with aging.

However, not every patient who attends or is brought to the ED by ambulance requires this level of care, including elderly patients. Socio-economic reasons, caregiver or family exhaustion, concerns about treatment, isolation or clinical safety may be the reason, although not well founded, for the visit, meaning that basic complementary tests, such as X-ray or blood tests, are not necessary.

During the last years, increasing attention has been given to providing more accurate and holistic care to the older populations attending EDs [5, 6]. Nonetheless, as in other age-segment populations, while a number of patients can be managed without any further complementary investigation, the impact of this quick management on outcomes has not been measured. In addition, these patients could be exposed to an increased risk of adverse outcomes, and identification of risk factors associated with such adverse events could help emergency physicians avoid situations of risk [7, 8].

According to this perspective, we aimed to investigate the factors associated with post-discharge adverse events in older patients who are quickly discharged home after ED care with no complementary investigations, and compare whether the outcomes in this population are different than those of patients undergoing blood test, X-ray or both.

2. Methods

2.1 SIESTA network and the EDEN project

The SIESTA (Spanish Investigators in Emergency Situations TeAm) research network was created in 2020, and is made up of researchers who mainly work in the ED. The main purpose of this network is to study multidisciplinary research challenges in real clinical practice from a multicentric perspective and with a wide representation of Spanish EDs. The network has a stable coordinating core, and researchers from individual EDs can join when a research challenge according to their interest and availability arises [9–11].

The EDEN (Emergency Department and Elderly Needs) challenge arose from the SIESTA network and its primary objective is to increase knowledge about socio-demographic, organizational, baseline, clinical care and evolutionary aspects of the population ≥65 years consulting Spanish EDs. To this end, a retrospective multipurpose registry was designed. The EDEN cohort included all patients who consulted 52 Spanish EDs (17% of the EDs of the Spanish public health network covering around 25% of the Spanish population) between 01–07 April 2019 (7 days). There was no reason for exclusion, and the EDs included all patients seen during the study period regardless of the reason for consultation. More than 200 primary variables regarding socio-demographic data, comorbidity, functional, cognitive and treatments at baseline, among other variables, were recorded in every patient by consulting patients' medical records. Extensive details of the EDEN registry have been published in detail previously [12].

2.2 EDEN-25 study design

The EDEN-25 study was specifically designed to analyze the outcomes of patients quickly discharged home from the ED

with no complementary investigations. For this purpose, we included patients discharged home within ≤12 hours and in whom no complementary test was performed. As controls, we selected patients that also spent ≤12 hours in the ED before being sent home, and in whom only a blood test or X-ray (or both) were performed.

2.3 Baseline variables

We selected 9 baseline factors that could potentially be related to adverse outcomes of patients discharged home without complementary investigations: age, sex, comorbidity (assessed using the Charlson Comorbidity Index, and stratified as not comorbid "0 points", mildly comorbid "1 or 2 points", moderately comorbid "3 or 4 points", and severely comorbid "more than 4 points"), functional capacity (assessed using the Barthel Index, and stratified as functional independence "100 points", mild to moderate dependence "between 60 and 95 points" and severe or fully dependent "less than 60 points"), ability to walk (without help, with help or unable), falls within the previous 6 months, dementia, depression and polypharmacy (considered when more than 4 drugs were reported for chronic treatment). The time spent in the ED was also measured and recorded.

2.4 Outcome

The outcome assessed consisted of a post-discharge combined adverse event (ED revisit, hospitalization or death, regardless of the cause) occurring within the following 30 days after discharge. This was checked by review of all the patient records, and adjudicated at a local level by the principal investigator of each center without external review.

2.5 Statistical analysis

Quantitative variables are expressed as median and interquartile range (IQR), and qualitative variables as the number of cases and percentages. For comparisons, we used the Kruskal-Wallis test and the chi-square test, respectively. For time spent in the ED, we recorded the mean time in hours with 95% confidence interval (CI), and comparisons were made by the Student's-*t* test for independent samples. The cumulative frequency of 30-day combined adverse events was quantified using survival tables and curves following the Kaplan-Meier method, and differences in survival curves of patients discharged without and with investigations were tested using the log-rank test.

The Cox regression model was also used to create a model to detect baseline variables independently associated with adverse outcomes in patients who did not undergo any complementary investigations before discharge. With this purpose, we forced the entrance of the 9 baseline variables considered in the present study, with the aforementioned splitting of some of these variables into subgroups. On the other hand, we used the Cox regression method to calculate unadjusted and adjusted hazard ratios (HR) with the 95% CI of patients without explorations to present adverse outcomes in comparison with patients who underwent complementary investigations.

For all comparisons, statistical significance was accepted if the p value was < 0.05 or if the 95% CI of the risk estimations excluded the value 1. All the analyses were performed with the SPSS package, version 24 (IBM, Armonk, NY, USA). Figures were produced using Excel and Power Point 2016 (Microsoft Corporate Office, Redmond, WA, USA).

3. Results

Of the 25,557 patients included in the EDEN cohort, we identified 4976 patients discharged without complementary investigations within less than 12 hours, with a mean time spent in the ED of 1.44 hours (95% CI: 1.41–1.47). On the other hand, we identified 5529 patients discharged after being undergoing a blood test and/or X-ray, who spent a mean of 3.08 hours (95% CI: 3.05–3.11) in the ED ($p < 0.001$) (Fig. 1). The addition of a blood test and/or an X-ray increased the time spent in the ED by 2.07 (95% CI: 1.59–2.15) and 0.35 (95% CI: 0.31–0.40) hours, respectively, while the increase when both investigations were ordered was 2.23 (2.17–2.31) hours. The baseline characteristics of the patients discharged without additional investigations were uniformly better than those of patients who underwent a blood test and/or X-ray: being younger, less comorbid and functionally limited, and with fewer geriatric syndromes (Table 1).

A total of 1048 patients directly discharged home experienced a combined outcome during the 30 days following ED discharge (21.4%). This percentage of adverse outcomes did not significantly differ from that found in patients discharged after complementary investigations (1208 patients with adverse outcome, 22.2%), with an unadjusted HR of 0.964 (95% CI: 0.888–1.048) and an adjusted HR of 1.032 (95% CI: 0.949–1.122) (Fig. 2).

We found that the development of an adverse outcome in patients discharged without a complementary investigation was associated with increased comorbidity and decreased functional capacity, as well as polypharmacy. Remarkably, increasing age was not associated with an increased number of adverse events within the 30 days following discharge (Fig. 3).

4. Discussion

In older patients, direct discharge home from the ED should be made with caution, as they constitute a high-risk population who may develop adverse events usually in association with a high number of comorbidities, functional impairment and a number of geriatric syndromes. We have identified three risk factors that increase this risk: comorbidity, functional impairment and polypharmacy. Surprisingly, age was not associated with this risk.

Patients included in the EDEN-25 study had a median age of 78 years (25% were over 85), 13% lived alone, 14% had severe comorbidity according to the Charlson Comorbidity Index and 35% had some degree of dependence according to the Barthel Index [12]. Therefore, adverse events in this high-risk population were expected. The present study more precisely defines the patient-related factors associated with adverse events 30 days after quick discharge from the ED (in less than 12 hours) without any complementary investigation, and these factors include comorbidity, functional dependence and polypharmacy. These data are consistent with those described

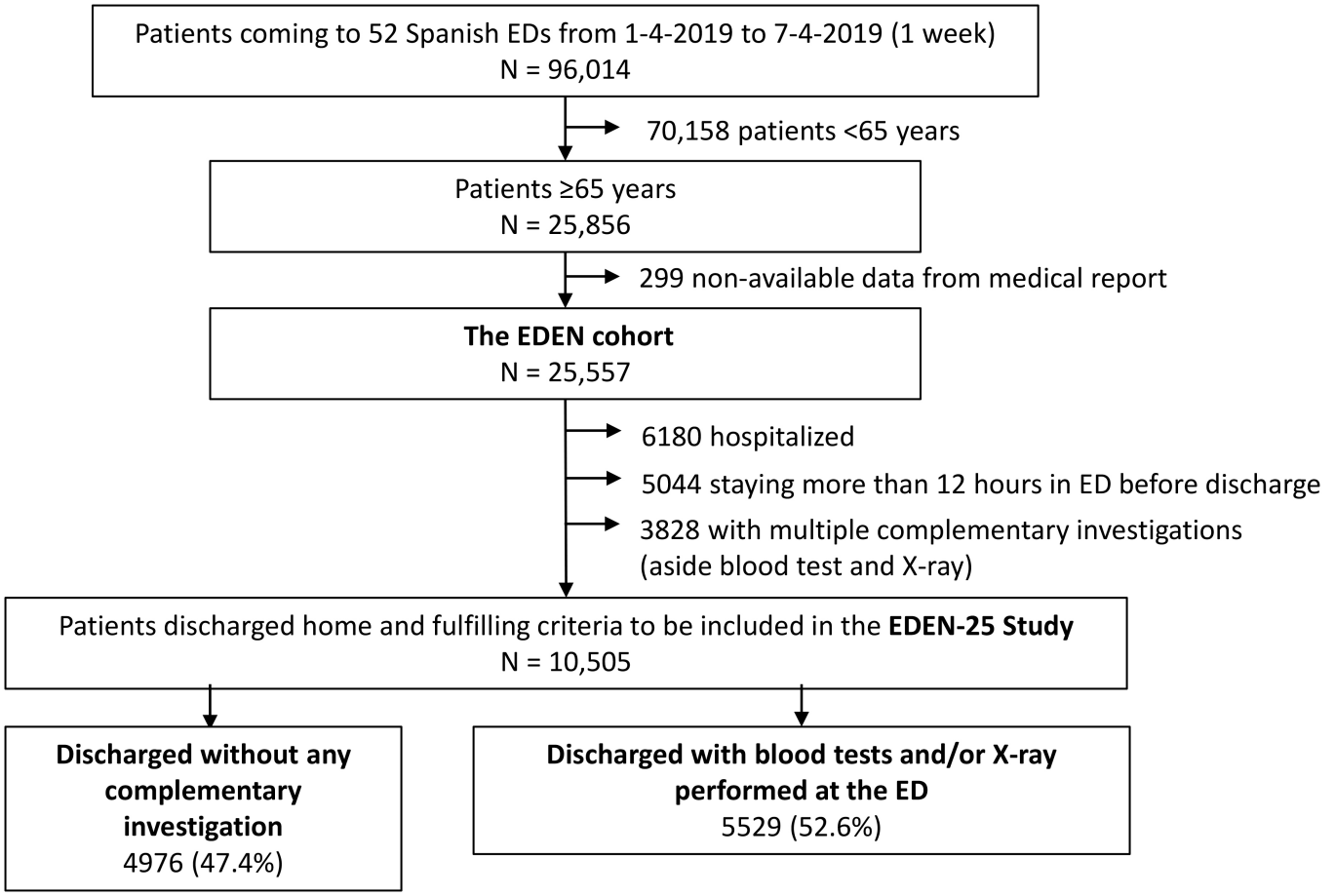

FIGURE 1. Flow chart diagram of patient inclusion in the EDEN-25 study. ED: emergency department; EDEN: Emergency Department and Elderly Needs.

in the DEED FRAIL-AHF Trial [13]. Even though this trial was carried out in older patients with a specific disease, *i.e.*, acute heart failure, comorbidity and functional dependence, but not age, were also predictors of adverse events at 30 days [13]. These data suggest that older patients presenting to EDs are at high risk of events at 30 days post-discharge and, therefore, a holistic approach must be ensured in these patients to avoid the performance of futile diagnostic or therapeutic procedures.

Management allowing quick discharge of older people without further investigations in the ED is feasible and does not seem to be associated with adverse outcomes. Triage is therefore an important part of emergency care [2]. Its aim is to assign a level of priority to avoid adverse events related to eventual delay. However, the assessment of frail patients requires a different approach with specific skills, appropriate protocols and adapted environments to avoid complications arising from examinations and treatments or overtreatment [3–5]. For this reason, in the triage consultation, it is important to distinguish robust patients from those who are frail or vulnerable using scales such as the Identification of Seniors at Risk, Clinical Frailty Scale or the Program of Research to Integrate Services for the Maintenance of Autonomy 7 (PRISMA-7). The study by Afonso-Argilés *et al.* [14] reported a mortality rate of 15% at 30 days in institutionalized patients after discharge from the ED. If these patients had been classified as frail, hospital transfers and unnecessary complementary tests would have been avoided, allowing only those who really needed specific interventions to be referred to the emergency services [6]. On the other hand, the main characteristics of the validation sample of the National Early Warning Score 2 (NEWS-2) scale, which predicts adverse events from triage consultation, include a mean age of 57 years (standard deviation (SD) ± 21 years), short ED stays (mean 1.32 hours, SD ± 1.09) and 50.6% of patients with priority 4 and 5 [15]. Although these results have a low representation of elderly or very elderly patients, they are similar to those of the present study, which also showed a short mean ED stay of 1.44 hours in patients with the same assigned priority level. However, this waiting time almost doubles when complementary tests, such as blood tests and/or X-rays, are requested.

Identification of older patients in whom quick ED discharge without complementary investigations can safely be performed is key before a strategy of patient diversion from the ED to other healthcare resources, especially primary care and walk-in centers, as well as other non-hospital emergency care facilities. In some countries reverse derivation has been proposed as a way to reduce ED workload and overcrowding [16].

The problem lies in that many of these fragile patients present attenuated clinical pictures due to the underlying physiological changes, comorbidity, polypharmacy and cognitive impairment. Thus, the importance of a detailed clinical evaluation in both the ED and in the outpatient setting which

TABLE 1. Summary of the characteristics of the patients included in the EDEN-25 study and comparison between patients discharged without and with a few complementary tests.

	All patients N = 10,505 n (%)	No tests N = 4976 n (%)	Investigations (blood test and/or X-ray) N = 5529 n (%)	*p* value
Age (in years) (median (IQR))	76 (70–82)	75 (70–81)	77 (71–83)	<0.001
Age (by categories)				
65–69 yr	2223 (19.2)	1162 (23.4)	1061 (19.2)	
70–79 yr	4699 (44.7)	2332 (46.9)	2367 (42.8)	<0.001
80–89 yr	2969 (28.3)	1270 (25.5)	1699 (30.7)	
≥90 yr	614 (5.8)	212 (4.3)	402 (7.3)	
Female sex	4382 (41.7)	2198 (44.2)	2184 (38.5)	<0.001
Comorbidity (by Charlson Comorbidity Index)				
No (0 points)	3721 (35.4)	1963 (39.4)	1758 (31.8)	
Mild (1–2 points)	4264 (40.6)	1924 (38.7)	2340 (42.3)	<0.001
Moderate (3–4 points)	1581 (15.0)	681 (13.7)	900 (16.3)	
Severe (≥5 points)	939 (8.9)	408 (8.2)	531 (9.6)	
Functional capacity (by Barthel Index)				
Independent (100 points)	8020 (76.3)	4061 (81.6)	3959 (71.6)	
Mild or moderate (60–95 points)	1873 (17.8)	716 (14.4)	1157 (20.9)	<0.001
Severe or complete (<60 points)	612 (5.8)	199 (4.0)	413 (7.5)	
Walking ability				
Alone with no help	8393 (79.9)	4222 (84.4)	4171 (75.4)	
Needs help	1725 (16.4)	618 (12.4)	1107 (20.0)	<0.001
Unable to walk	387 (3.7)	136 (2.7)	251 (4.5)	
Diagnosed with depression	1355 (12.9)	597 (12.0)	758 (13.7)	0.009
Diagnosed with dementia	921 (8.8)	324 (6.5)	597 (10.8)	<0.001
Having had falls in the previous 6 moths	771 (7.3)	224 (4.5)	547 (9.9)	<0.001
Number of chronic drugs	5 (2–8)	5 (2–8)	5 (3–9)	<0.001
Polypharmacy (>4 drugs)	5734 (55.0)	2481 (50.3)	3253 (59.2)	<0.001

IQR: interquartile range.

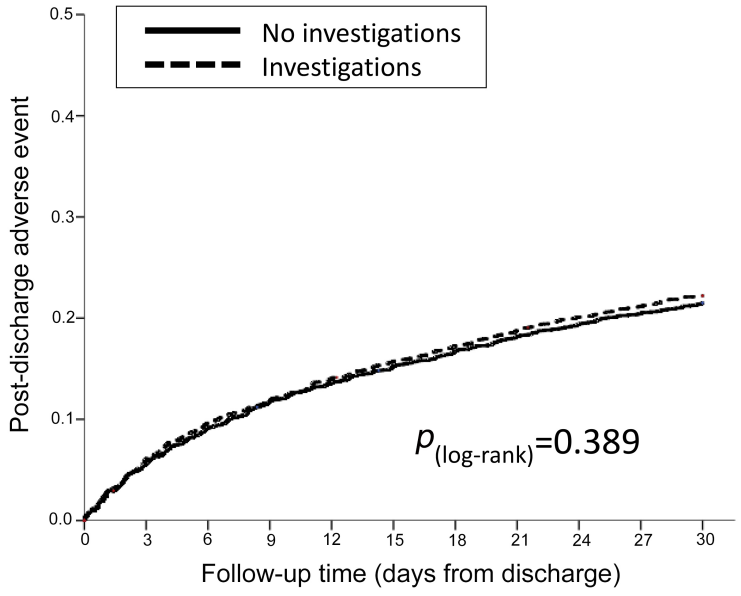

FIGURE 2. Kaplan-Meier curves for post-discharge adverse events in patients with no investigations in the emergency department compared with those undergoing blood test and/or X-ray.

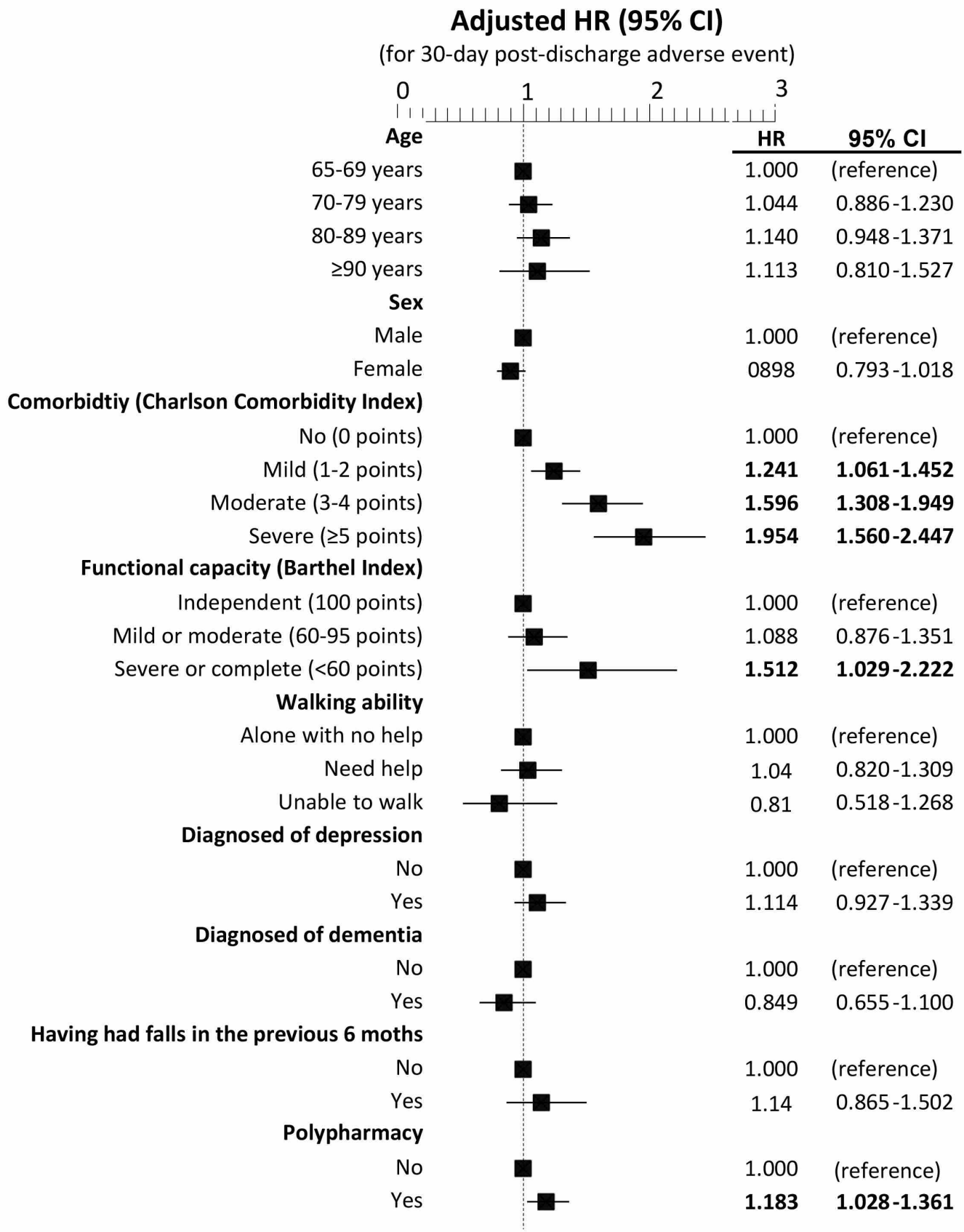

FIGURE 3. Factors associated with 30-day post-discharge adverse events in patients discharged from the emergency department without any investigation. HR: hazard ratio; CI: confidence interval.

allows differentiating diseases of high risk and requires in depth diagnostic assessment of those not requiring any complementary study. There are alternatives to hospitalization for this latter patient profile, such as home hospitalization (residence if institutionalized), telemedicine programs, palliative care support teams or temporary derivation to centers of intermediate complexity. These options would avoid the need for healthcare in the ED [5].

According to this perspective, we aimed to investigate the factors associated with post-discharge adverse events in older patients who are quickly discharged home after ED care with no complementary investigations, and compare whether the outcomes in this population are different than those of patients undergoing blood test, X-ray or both.

Therefore, according to the results of our study, it can be established which patients over 65 years of age can be discharged safely, as in the younger population, without the need for additional tests, if these are not necessary. Discharge from hospital without additional tests not only improves waiting times, but also reduces the occurrence of adverse events as a result of healthcare and potential over-investigation and excess therapeutic approaches in older patients [17]. Therefore, in this population not needing complementary tests in the ED, the real need to attend an ED should be questioned or whether, alternatively, care at home or in a residence could have been provided with the same results. This would avoid the use of ambulances for moving from home to the ED and provide healthcare closer to the patients in their own home or using residence care resources [16, 18].

5. Limitations

First, the 52 participating EDs were not chosen at random, but expressed interest in participating. However, the broad representation, both territorially and in terms of hospital typology (university, high-technology and community), means that the bias in this regard is probably small. Second, the analysis presented here was not carried out by nosology groups, but rather globally. This may mean that the findings are conditioned by certain processes that are more prevalent according to patient sex or age. Nonetheless, our design captured all the spectrum of older patients coming to the ED, and was not limited to a single disease or group of diseases, thereby providing a more realistic, overall picture of real clinical practice. Third, this is a secondary analysis of a multipurpose cohort, and the findings should be considered as hypothesis-generating and should be confirmed by studies specifically designed for this purpose. Fourth, the inclusion of patients in the EDEN cohort was done by episodes rather than by patients, and thus, it is possible that some episodes may correspond to the same patient. However, the inclusion period was very short (7 days), and thus, the probability of a repeat visit for a particular patient would likely be low. Fifth, the complementary tests were limited to a blood analysis and simple X-ray, and the study did not analyze the impact of other types of studies, such as cultures, urinary stick tests or image investigations. Nonetheless, the groups compared in the EDEN-25 study consisted of patients undergoing no complementary investigations or patients undergoing blood tests or X-ray, but nothing else. Therefore, the influence of the other complementary investigations will have to be assessed in further studies. Finally, some of the patients could have come from healthcare centers where blood tests or X-ray had been performed before ED referral. We did not record this and we do not know how frequent this circumstance was present in patients discharged without complementary investigations in the ED.

6. Conclusions

The discharge of older patients from the ED without complementary investigations does not increase the risk of post-discharge events or shorten the total time spent in the ED. Remarkably, age was not related to the risk of post-discharge adverse events, but caution should be taken in comorbid and dependent patients with polypharmacy, as these factors have been related to adverse outcomes in this population. It would be interesting to validate a scale for early detection, ideally at the triage level, of patients at risk of adverse events within 30 days after discharge from the ED without complementary investigations as it could be used to reduce the adverse events of the current delay in care, improving health outcomes, the efficiency of healthcare and its organization. In addition, it could help to decide which patients could be safely diverted from the ED to other lower intensity emergency care facilities.

AVAILABILITY OF DATA AND MATERIALS

The data presented in this study are available on reasonable request from the corresponding author.

AUTHOR CONTRIBUTIONS

GBP, MRC, PPE, CF, JJ, FJMP, EJGL PP, JGC and ÒM—performed the research. JGC and ÒM—designed the research study (the EDEN registry). GBP, MRC, PPE, AA, CF, SA, JJ, FJMP, EJGL, PP, CMN, LPL, DRM, LCJ, AVB, MCQD, MLPDG, CLAM, MGT, JMC, MCM, FL, LZS, VTG, FBC, PPR, JGC and ÒM—performed the research. GBP, MRC, PPE and ÒM—analyzed the data and wrote the manuscript. All authors read and approved the final manuscript. All the authors were involved in patient identification and care and collected patient information.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The EDEN project was approved by the Research Ethics Committee of the Hospital Clínico San Carlos, Madrid, Spain (reference number HCSC/22/005-E). Due to the non-interventional design of the registry, Spanish legislation allows central Ethical Committee approval, accompanied by notification to the local Ethical Committees. Patient informed consent was waived by the Research Ethics Committee of the Hospital Clínico San Carlos due to the retrospective and non-interventional design of the EDEN project. The present study was carried out in strict compliance with the principles of the Declaration of Helsinki.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found, in the online version, at https://oss.signavitae.com/mre-signavitae/article/1888044433470832640/attachment/Supplementary%20material.pdf.

REFERENCES

[1] Perry A, Macias Tejada J, Melady D. An approach to the older patient in the emergency department. Clinics in Geriatric Medicine. 2018; 34: 299–311.

[2] Pinardi E, Ornago AM, Bianchetti A, Morandi A, Mantovani S, Marengoni A, *et al*. Optimizing older patient care in emergency departments: a comprehensive survey of current practices and challenges in Northern Italy. BMC Emergency Medicine. 2024; 24: 86.

[3] Cohen I, Sangal RB, Taylor RA, Crawford A, Lai JM, Martin P, *et al*. Impact of the geriatric emergency medicine specialist intervention on final emergency department disposition. Journal of the American Geriatrics Society. 2024; 72: 2017–2026.

[4] Fernández-Montalbán P, Martínez-Flores S, Mir-Montero M, Arribas López JR, Bibiano-Guillén C, Brañas F. Impact of a geriatric intervention based on the comprehensive geriatrics assessment on avoidable admissions in older patients at risk evaluated in the emergency department. Revista Espanola de Geriatria y Gerontologia. 2024; 59: 101512.

[5] Puig-Campmany M, Ris Romeu J. Frail older patients in the emergency department: main challenges. Emergencias. 2022; 34: 415–417.

[6] Fernández Alonso C. On older persons living in residential facilities and their care in emergency health services. Emergencias. 2022; 34: 411–412.

[7] Ghai S, Chassé K, Renaud MJ, Guicherd-Callin L, Bussières A, Zidarov D. Transition of care from post-acute services for the older adults in Quebec: a pilot impact evaluation. BMC Health Services Research. 2024; 24: 421.

[8] Mikkelsen TH, Søndergaard J, Kjær NK, Nielsen JB, Ryg J, Kjeldsen LJ, *et al*. Designing a tool ensuring older patients the right medication at the right time after discharge from hospital—the first step in a participatory design process. BMC Health Services Research. 2024; 24: 511.

[9] Miró O, González Del Castillo J. Collaboration among Spanish emergency departments to promote research: on the creation of the SIESTA (Spanish Investigators in Emergency Situations TeAm) network and the coordination of the UMC-19 (Unusual Manifestations of COVID-19) macroproject. Emergencias. 2020; 32: 269–277.

[10] González Del Castillo J, Miró Ò. Contributions of the Spanish Investigators in the Emergency Situations TeAm network to COVID-19 knowledge: an example of how emergency physicians can lead first-class research. European Journal of Emergency Medicine. 2022; 29: 160–162.

[11] Miró O, González Del Castillo J. SIESTA—the Spanish Investigators in Emergency Situations TeAm—during the COVID-19 pandemic: a summary of results of the network's first challenge. Emergencias. 2022; 34: 225–227.

[12] Miró O, Jacob J, García-Lamberechts EJ, Piñera Salmerón P, Llorens P, Jiménez S, *et al*. Sociodemographic characteristics, functional status, and health resource use of older patients treated in Spanish emergency departments: a description of the EDEN cohort. Emergencias. 2022; 34: 418–427.

[13] Martín-Sánchez FJ, Parra Esquivel P, Llopis García G, González Del Castillo J, Rodríguez Adrada E, Espinosa B, *et al*. Thirty-day outcomes in frail older patients discharged home from the emergency department with acute heart failure: effects of high-risk criteria identified by the DEED FRAIL-AHF trial. Emergencias. 2021; 33: 165–173.

[14] Afonso-Argilés FJ, Comas Serrano M, Blázquez Andión M, Castells Oliveres X, Cirera Lorenzo I, García Pérez D, *et al*. Factors associated with short-term mortality after emergency department care of residents living in aged care homes: findings from the multicenter Caregency study. Emergencias. 2022; 34: 437–443.

[15] Arévalo-Buitrago P, Morales-Cané I, Olivares Luque E, Godino-Rubio M, Rodríguez-Borrego MA, López-Soto PJ. Early detection of risk for clinical deterioration in emergency department patients: validation of a version of the National Early Warning Score 2 for use in Spain. Emergencias. 2022; 34: 452–457.

[16] García-Pérez D. The importance of holistic evaluation of older patients who fall. Emergencias. 2022; 34: 413–414.

[17] Melady D, Perry A. Ten best practices for the older patient in the emergency department. Clinics in Geriatric Medicine. 2018; 34: 313–336.

[18] López-Sáez B, Herranz Martínez S, Campderrich Estrada E. Is a presentation of urinary tract infection and functional decline in the elderly the whole story? Revista Española de Urgencias y Emergencias. 2022; 1: 115–116. (In Spanish)

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