BRIEF REPORT

Clinical management of short-stay units in Spain: the REGICE 2 study

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Background and objective: The aim of the REGICE (Register of Short-Stay Units in Spain) project is to describe the real situation of short-stay units in Spanish hospitals. The second REGICE study analyzed information on short-stay units' caseloads and clinical management practices.
Methods: A cross-sectional questionnaire was sent to the 48 hospitals with short-stay units that participated in the REGICE 1 study. The standardized data collection instrument was emailed to the contact person at each short-stay unit between June 1 and December 31, 2012. Items asked about the unit's caseload and clinical management practices.
Results: Forty short-stay units responded to the REGICE 2 survey. A total of 45140 admissions were made (mean [SD] length of stay, 3.05 [1.28] days; mean age, 66.7 [10.4] years). The units discharged 80.6% of the patients to home, in-hospital mortality was 2.8%, and the 30-day readmission rate was 6.1%. The diagnostic-related groups that 72.5% of the units ranked among their first 3 reasons for admissions involved exacerbation of heart disease or chronic respiratory disease and urinary tract or respiratory infection.
Conclusions: Short-stay units offer an alternative to conventional hospital admission. They answer a need for urgent admission of patients with highly prevalent conditions and give good results, allowing hospitals to manage caseloads safely and effectively. Further studies of quality standards in these units are necessary. [Emergencias 2014;26:359-362]

Keywords: Short-stay unit. Emergency health services. REGICE project.

Introduction

Over the last decade, short stay units (SSUs), mainly dependent on emergency departments (EDs), have been introduced as an alternative to conventional hospitalization to help alleviate ED overcrowding[1,2]. Unlike observation units for stays lasting less than 24 hours, SSUs care for patients with various acute or chronic diseases with exacerbation of low-moderate complexity where discharge within 2-4 days is expected[3]. Their implementation has resulted in a decrease in average hospital stay, with a good safety profile and no increase in mortality or readmission rates. So a more efficient use of hospital beds has been achieved[4,5].

The results of the first part of the survey of SSU in Spain (REGICE project) have recently been published in EMERGENCIAS[6], with data on structure, location, functional dependency and professional relationship. Below we present the second part of

the survey (REGICE 2) with information on the activity and clinical management of these units.

Method

We performed a cross-sectional study based on a survey of 48 hospitals with SSU who participated in the study REGICE 1. The study was conducted by sending a standard email form to a SSU contact doctor for completion between June 1 and December 31, 2012.

The variables of the questionnaire included information on the activity and clinical management of each SSU. We collected data on patient age, sex, total admissions, total length of stay, occupancy rate, turnover rate per bed / month, diagnosis related groups (DRG), average weight per GRD, the number of diagnoses, number of procedures, overall hospital mortality, type of admission, discharge destination, the number of discharges on weekends and readmissions at 30 days. We included for analysis variables with a response rate equal to or greater than 70% of the centers surveyed.

Qualitative variables are presented with frequency distribution. Quantitative variables are presented as s and standard deviation (SD) or median and interquartile range (IQR) if not normally distributed.

Results

Of the 67 SSU identified in Spanish hospitals, 48 participated in the REGICE 1 and of these 43 (89.6%) completed the survey REGICE 2. Three centers were excluded from the final sample because their SSU had an average stay time of less than 24 hours. Therefore, 40 SSU (83.3%) constituted the sample for REGICE 2 covering 2010 data (21 centers), 2011 (16 centers) and periods between 2011 and 2012 (3 centers).

The total number of admissions in the 40 SU in each time period was 45,140, which was highly variable depending on the center, ranging from 267 (Hospital of Leganes) to 2,514 (Calella Hospital) (Table 1). The mean age of patients was 66.7 (10.4) years, the average stay 3.05 (1.28) days, the average occupancy rate was 69.4%, the proportion of patients referred to conventional hospitalization for further tests or treatment was 11.2%. Overall mortality was 2.8% (range 0 to 15.1%). In 20 SSU (50%) had over 1000 admissions and 4 SSU (10%) had over 2000 admissions. In the latter group, the relative weight of admission in relation to total number of admissions / year per hospital in each case accounted for between 6% (General Hospital of Alicante) and 16.3% (Calella Hospital).

In relation to the main GRD, the most prevalent was heart disease in the form of heart failure and arrhythmia (GRD 127 and 544) with 8.2%, exacerbation of chronic obstructive pulmonary disease, asthma or bronchitis (DRG 88, 96 and 97) with 6.5%, infectious disease of the kidney and urinary tract (DRGs 320 and 321) with 5.5% and respiratory infection (DRG 89, 90 and 541) with 4.8% (Table 2). Respective lengths of stay of each of these groups were 3.4 (1.3) 3.0 (1.0) 2.7 (1.1) and 3.7 (1.5) days. Although there was great variability between different SSUs, the above DRGs were reported as one of the top three diagnoses in 29 of the 40 SSUs (72.5%).

Table 1. Details of clinical management of short-stay units

		Response Index (%)
Total admissions (range)	45,140 (267-2.514)	100
Average (days) stay [mean (SD)] (rank)	3.0 (1.3) (1.2-6.5)	95
Age (years) [Mean (SD)] (range)	66.7 (10.4) (43.8-87.7)	80
Sex (%) women / men	50.8/49.2	80
Occupancy rate (%) (range)	69.4 (26-115.0)	88
Bed turnover rate / month [mean] (range)	8.1 (DE) (4.2-24.4)	75
Average weight GRD [mean (SD)] (range)	1.1 (0.3) (0.4-1.7)	73
Overall mortality (%) (range)	2.8 (0-15.1)	78
Type of admission (%) (range)		
- Emergencies	94.4 (59-100)	90
- Scheduled or other	5.6 (0-20.8)	90
Discharges (%) (range)		
- Direct discharge home	80.6 (46.3-97.6)	90
- Referral to other departments	11.2 (0.6-39.2)	85
- Referral to home hospitalization	4.4 (0-33.6)	83
- Referral to sub-acute unit	1.8 (0-16)	85
Discharge over the weekend (%) (range)	14.8 (0-30.7)	70
Readmission < 30 days (%) (range)	6.1 (0-14.8)	73

Table 2. Primary diagnosis related groups (DRGs) at discharge from short-stay units (SSU): Total discharges and average stay*

Code	Diagnosis	Total Discharges No	Average stay (SD)
127	Heart failure and shock	3,086	3.2 (1.3)
321	Infections of the kidney and urinary tract, age > 18 years, no comorbidity	1,893	2.6 (1.0)
88	Chronic obstructive pulmonary disease	1,728	3.0 (0.9)
541	Simple pneumonia and other respiratory disorders except bronchitis and asthma with comorbidity	1,438	3.9 (1.7)
97	Bronchitis and asthma	863	2.8 (1.3)
814	Nonbacterial gastroenteritis and abdominal pain, age > 17 years without comorbidity	774	2.1 (0.7)
395	RBC disorders	625	1.1 (0.9)
544	Chronic heart failure and arrhythmia	624	4.3 (1.4)
320	Kidney and urinary tract infections	586	3.1 (1.2)
102	Other respiratory diagnoses without comorbidity	542	2.9 (1.0)
101	Other respiratory diagnoses with comorbidity	491	3.5 (1.2)
89	Simple pneumonia	402	3.8 (1.3)
96	Bronchitis and asthma, up to 17 years old with more cc	343	3.8 (1.0)
87	Pulmonary edema and respiratory failure	332	3.5 (1.6)
90	Simple pneumonia and pleurisy without comorbidity	323	2.9 (0.8)

*Data from 31 SSU (response rate 77.5%).

Discussion

Since their introduction in the early nineties, SSUs have emerged as alternatives to conventional hospital units despite a relatively smaller presence when taking into account that there are 67 SSUs in the 591 hospitals (11.3%) listed on the website of the Ministry of Health. The REGICE 1 surveyed the structural characteristics of SSU 6, and the present study describes for the first time the activity carried out and their results regarding clinical management.

Beyond the differences between these SSU, the data reflect the relative importance of these resources which, in some hospitals, account for more than 10% of total admissions, a figure that would rise significantly if one considers only those generated from the ED. The profile of the analyzed series reflects an annual activity that exceeds 1000 admissions, an average stay of nearly three days, a high average bed turnover rate, a suboptimal occupancy rate, approximately 15% weekend discharges, a relatively low mortality and a readmission rate of 6% at 30 days after discharge.

Patients likely to benefit from this type of healthcare resource are those with worsening chronic disease (heart or lung) and acute infectious (urinary tract infection, pneumonia), which are the most common diagnoses present in varying proportions among the first 3 DRG, with average stays, when evaluated individually, of 2.7 days for urinary tract infection and 3.7 days for pneumonia. The results of our survey and published studies[7-10] provide arguments for the adequacy of SSU admissions and stays.

In principle, the transfer of patients from the SSU to conventional hospital units is due to the need for continued inpatient treatment, diagnostic procedures or the occurrence of unforeseen complications. The figure of 11.2% in our series, with 4 SSU above 20%, seems excessive but may be explained by different circumstances according to the centers. Anyway, to optimize the performance of SSU it seems necessary to define clear criteria for admission, monitor compliance and establish acceptable limits[11].

Overall mortality in the analyzed series was 2.8% of admissions, consistent with that reported in the literature, ranging between 3.1% and 4.2%[4,7], with the exception of 0.1% in the series reported by González-Armengol et al.[12] or the 9.8% in a selected population of geriatric patients with multiple comorbidities in the study by Martí-Cipriano et al.[13] Taking into account the disease treated, low mortality is expected, with some factors to be considered such as admission of elderly patients with high comorbidity, or expected deaths in extreme situations[14,15].

As limitations of this study we would highlight the potential bias produced by voluntary participation, the variable response to the requested data and the absence of an appreciable number of SSU. In addition, information was provided electronically by the study participants without verification by the researchers. The survey also reflects a very heterogeneous group of clinical units with significant differences in the various aspects described.

To conclude, data on clinical management presented in the REGICE 2 study certify the role of SSU as an alternative to conventional hospitalization, helping to meet the need for urgent admission in patients with highly prevalent diseases, with good results in terms of activity, efficacy and safety. It was also found that, beyond shared primary objectives, the group of SSU is very heterogeneous and in the future it would be useful to

have a consensus on clinical criteria of adequacy of admission and establish quality indicators to serve as references.

Addendum

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Proyecto REGICE. Gestión clínica de las unidades de corta estancia en España (REGICE 2)

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Objetivo: El proyecto REGICE analiza las unidades de corta estancia (UCE) en España. El estudio REGICE 2 ofrece información sobre actividad y gestión clínica.
Método: Estudio transversal basado en una encuesta a los 48 hospitales con UCE que participaron en el estudio REGICE 1. Se realizó mediante un formulario estandarizado que se envió vía electrónica al médico de contacto de cada UCE entre el 1 de junio y el 31 de diciembre de 2012, con inclusión de datos sobre actividad y gestión clínica.
Resultados: Cuarenta UCE participaron en el estudio REGICE 2. El número de ingresos fue 45.140, la estancia media global 3,05 (1,28) días y la edad media de los pacientes 66,7 (10,4) años. El porcentaje de altas a domicilio fue del 80,6%, la mortalidad global intrahospitalaria del 2,8% y de reingreso a los 30 días del 6,1%. La exacerbación de la patología cardiaca y respiratoria crónicas y la infección urinaria y respiratoria fueron uno de los primeros tres diagnósticos en el 72,5% de UCE.
Conclusiones: Las UCE constituyen una alternativa a la hospitalización convencional y responden a la necesidad de ingreso urgente en pacientes con patología de alta prevalencia con buenos resultados en términos de actividad, eficacia y seguridad. Son necesarios futuros trabajos que determinen los estándares de calidad de estas unidades. [Emergencias 2014;26:359-362]

Palabras clave: Unidad de corta estancia. Urgencias. Proyecto REGICE.