



ORIGINAL ARTICLE

Hospital mortality in postoperative critically ill patients older than 80 years. Can we predict it at an early stage? ☆,☆☆



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KEYWORDS

Hospital mortality;
Elderly;
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Abstract

Objectives: To determine the incidence of in-hospital mortality throughout the post-surgical period of patients aged 80 or over who were admitted to the post-surgical critical care unit, as well as to assess the predictive capacity of those variables existing in the first 48 h on the in-hospital mortality.

Material and methods: An observational retrospective cohort study conducted on postsurgical patients up to 80 years old who were admitted to the unit between June 2011 and December 2013. Univariate and multivariate binary logistic regression was used to determine the association between mortality and the independent variables.

Results: Of the 186 patients included, 9 (4.8%) died in the critical care unit, and 22 (11.8%) died in wards during hospital admission, giving a hospital mortality of 31 (16.7%). Among the 78 patients (42%) that underwent acute surgery, and the 108 who underwent elective surgery, there was a mortality rate of 19 (10.2%) and 12 (6.5%), respectively. As regards the variables analysed during the first 48 h of admission that showed to be hospital mortality risk factor were the need for mechanical ventilation over 48 h, with an OR: 7.146 (95% CI: 1.563–32.664, $p = .011$) and the degree of the severity score on the APACHE II scale in the first 24 h, with an OR: 1.102 (95% CI: 1.005–1.208, $p = .039$).

Conclusion: The incidence of hospital mortality in very old patients found in our study is comparable to that reported by other authors. Patients who need mechanical ventilation over 48 h, and with higher scores in the APACHE II scale could be at a higher risk of in-hospital mortality.

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PALABRAS CLAVE

Mortalidad hospitalaria; Ancianos; Cuidados críticos postoperatorios

Mortalidad hospitalaria en pacientes críticos postquirúrgicos mayores de 80 años. ¿Podemos predecirla de forma precoz?

Resumen

Objetivos: Conocer la incidencia de mortalidad hospitalaria en el postoperatorio de los pacientes con edad igual o mayor de 80 años que ingresan en la Unidad de Reanimación (UR), así como evaluar la capacidad predictiva de las variables presentes en las primeras 48 h de ingreso sobre la mortalidad hospitalaria.

Material y métodos: Estudio retrospectivo observacional de cohortes. Se incluyeron todos los pacientes de edad igual o mayor de 80 años ingresados en la UR tras intervenir quirúrgicamente durante junio del 2011 a diciembre del 2013. Se realizó un modelo de regresión logística en base a un análisis uni y bivariado para conocer la posible asociación entre la mortalidad y las variables independientes.

Resultados: De los 186 pacientes recogidos en el estudio, 9 (4,8%) fallecieron en la UR y 22 (11,8%) fallecieron una vez trasladados a planta de hospitalización, lo que se traduce en una mortalidad hospitalaria total de 31 (16,7%). De los 78 pacientes (42%) intervenidos de urgencia y de los 108 de forma programada se observó una mortalidad de 19 (10,2%) y 12 (6,5), respectivamente. Las únicas variables presentes en las primeras 48 h de ingreso en la UR que demostraron ser factor de riesgo para mortalidad hospitalaria fueron ventilación mecánica de más de 48 h (OR; 7,146; IC 95%: 1,563-32,664; p=0,011) y el grado de severidad en la escala APACHE II en las primeras 24 h (OR: 1,102; IC 95%: 1,005-1,208; p=0,039).

Conclusión: La incidencia de mortalidad hospitalaria en pacientes ancianos encontrada en nuestro centro es equiparable a la de otras series publicadas. La ventilación mecánica prolongada de más de 48 h y el grado de severidad en la escala APACHE II identificarían aquellos pacientes con mayor riesgo de fallecer durante el ingreso hospitalario.

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Introduction

Each year, over 230 million surgical procedures are performed worldwide. Although, it is difficult to estimate the impact on individuals, health systems, and society as a whole, the postoperative mortality rate is thought to range from 0.4% to 0.8% in developed countries.¹

The number of patients admitted to intensive care units (ICU) over the past decade has increased. This is mainly the result of demographic changes (estimates suggests that by 2050, 11% of the European population will be over 80 years of age)² and an increase in the prevalence of conditions requiring intensive care, such as sepsis and high-risk surgery.³

Several decades ago, Avedis Donavedian defined health-care quality as a triad of structure, process and outcome.⁴

Effectiveness of care, which falls under the bioethics principle of justice, is a fundamental aspect of the quality evaluation of clinical units. Esserman et al.⁵ found that 32% of intensive care resources were used on patients that survive less than 100 days after hospital discharge.

An accurate prognosis will help the clinician decide which treatments are potentially ineffective, and which patients will benefit from intensive care. Prognosis is also of the utmost importance when discussing the objective of intensive care with family members,⁶ and the quality of the information in this respect is an independent determining factor of family satisfaction.⁷

The aim of this observational study was to determine the incidence of in-hospital mortality among patients aged 80 years of over admitted to the postanaesthesia care unit (PACU) of a tertiary hospital, and to evaluate the capacity of the variables measured during the first 48 h post-admission to predict mortality.

Materials and methods

This was an observational, retrospective cohort study. Study variables were collected and analysed prospectively from the patient register of the postanaesthesia unit where the study was performed.

All patients aged 80 years or over admitted to the PACU following both elective and emergency surgery were included in the study. The study was conducted from June 2011 to December 2013.

The following clinical variables measured over the first 48 h post-admission were recorded: patient factors (age, sex, ASA grade of perioperative risk, presence of comorbidities, and APACHE II comorbidity score); surgical factors (magnitude of the surgical procedure and degree of urgency); and factors associated with postoperative critical care (need for mechanical ventilation, need for vasoactive drugs, and presence of acute kidney injury).

The magnitude of the surgical procedure was determined according to the classification proposed by Kongsayreepong et al.⁸ (minor, intermediate, major).

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