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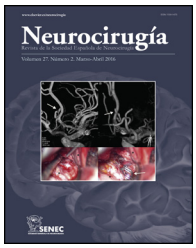

Clinical Research

Incidence and risk factors of 30-day readmission in neurosurgical patients☆

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ABSTRACT

Aim: The 30-day readmission rate has become an important indicator of health care quality. This study focuses on the incidence of 30-day readmission in neurosurgical patients and related risk factors.

Material and methods: A retrospective review was performed on patients treated in a neurosurgery department between 1 January 2012 and the 31 December 2013. Patients requiring readmission within 30 days of discharge and the readmission diagnosis were identified, and the factors related to their readmission were analysed.

Results: A total of 1854 interventions were carried out on 1739 patients during the aforementioned (study) period. Of the remaining patients, 174 (10.2%) required readmission within 30 days of discharge. The main causes of readmission were problems related to the surgical wound (21.2% of all readmissions), followed by respiratory processes (18.8%). A total of 73.9% of readmissions occurred in patients who had undergone cranial surgery. Multiple comorbidities estimated by Charlson comorbidity index and length of hospital stay were identified as factors related to a higher readmission rate.

Conclusions: The 30-day readmission rate observed in our series was 10.2%. Multiple comorbidity expressed by the Charlson comorbidity index and length of hospital stay were related to readmission.

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Incidencia y factores de riesgo de reingreso hospitalario a los 30 días en pacientes neuroquirúrgicos

Palabras clave:
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RESUMEN

Objetivo: El reingreso a los 30 días se ha convertido en un parámetro de uso creciente como indicador de calidad asistencial. El presente trabajo pretende establecer la frecuencia de reingreso a los 30 días entre pacientes que precisaron intervención neuroquirúrgica, así como analizar los factores relacionados con dicha eventualidad.

Material y métodos: Se han revisado de forma retrospectiva los pacientes intervenidos en nuestra institución desde el 1 de enero de 2012 hasta el 31 de diciembre de 2013. Se han identificado los pacientes que precisaron reingreso en los primeros 30 días tras recibir el alta hospitalaria, así como la causa que motivó dicho ingreso. Se han analizado los factores relacionados con el reingreso.

Resultados: Se llevaron a cabo 1.854 intervenciones en 1.739 pacientes durante el período señalado. Durante el ingreso fallecieron 36 pacientes (2,1%). De los pacientes restantes, un total de 174 (10,2%) precisaron reingreso hospitalario en los primeros 30 días tras el alta. La principal causa de reingreso estuvo representada por los problemas relacionados con la herida quirúrgica (21,2% del total de reingresos), seguida de los procesos respiratorios (18,8%). El 73,9% de los reingresos aconteció en pacientes en los que se había realizado cirugía craneal. Los factores relacionados con una mayor tasa de reingreso fueron la comorbilidad múltiple estimada por el índice de comorbilidad de Charlson y la duración de la estancia hospitalaria anterior al reingreso.

Conclusiones: En nuestra serie el 10,2% de los pacientes precisaron nuevo ingreso hospitalario a los 30 días. La comorbilidad múltiple expresada por el índice de comorbilidad de Charlson y la duración de la estancia hospitalaria estuvieron relacionados con dicha eventualidad.

Introduction

Evaluation of heath care quality has become imperative in the last few years. One of the most widely used indicators of quality is 30-day hospital readmission.[1] While on occasions this result cannot be completely avoided, it is considered to represent a reflection of the efficacy of the treatment given, as well as of the morbidity associated with said treatment.

Early hospital readmission, in addition to causing obvious negative consequences in the quality of life of the patient and a potential increase in the risk of nosocomial infection,[2] also has significant financial impact. The cost of readmission in the Medicare population in one year is estimated to top 17 billion dollars.[3]

Readmission frequency, as well as associated factors, can vary among the various specialties.[4,5] In fact, the causes that make it worse are different between patients that have received only medical care versus those that have received surgical treatment.[6,7]

The present work, therefore, arises from the need to know both the frequency of 30 day hospital readmission, as well as the factors associated to it in neurosurgical patients.

Methods

Patients that needed neurosurgical intervention at Hospital General Universitario Gregorio Marañón were retrospectively analysed for the period starting on 1 January 2012 until 31 December 2013. The procedures were collected from the surgery record belonging to the Neurosurgery Department. Endovascular procedures, intracranial pressure monitoring of neurocritical patients, external ventricular drains and outpatient procedures have been excluded.

Data belonging to the diagnosis that led to initial admission (also called index admission) and the treatment given were obtained. According to the index diagnosis, the following 6 diagnosis groups were created: patients with cerebral tumours, hydrocephalus, shunt malfunction, chronic subdural haematomas, spine pathology that needs instrumentation and non-instrumented spine pathology. Demographic variables (age and gender), medical-surgical history and the duration of the hospital stay during the initial admission were analysed in each of the patients. The subgroup of paediatric patients includes those that are younger than 18 years of age. The impact of the medical comorbidities of each patient has been estimated using the Charlson comorbidity index (Fig. 1). The information for these variables was obtained from the medical histories of the patients.

The patients that needed to be readmitted to any of the departments at our centre during the first 30 days after being discharged from the hospital were identified, with the corresponding diagnosis that led to readmission. Scheduled readmissions for procedures or administration of chemotherapy treatment, as well as those admitted for supplemental testing were excluded.