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ORIGINAL ARTICLE

Tendencies in cerebral aneurism treatment: Analysis of a hospital series☆

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KEYWORDS
Subarachnoid haemorrhage;
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Abstract
Introduction and objective: To discover if there have been changes in the treatment time for SAH in our hospital environment.
Material and methods: Comparative analysis of 571 patients treated at Hospital Universitari la Fe during 2 different time periods. The SAH-OLD group consisted of 462 patients attended consecutively between April 1997 and March 2005, while SAH-NEW comprised 109 patients attended consecutively between March 2007 and April 2010. We analysed demographic factors, risk factors, severity at time of admission, time to arteriography, diagnosis of aneurysm, use of surgical or endovascular treatment and time to treatment, frequency of neurological complications, in-hospital deaths, and modified Rankin Scale (mRS) at discharge.
Results: Mean time to arteriography was 2.18 ± 2.5 days for the SAH-OLD group and 2.37 ± 2.23 days, for the SAH-NEW group ($P = .49$). Mortality rates for SAH-OLD patients were calculated at 30%, compared to 18.3% in SAH-NEW patients ($P = .01$).

Among patients surviving the hospital stay in the SAH-OLD group, 13.3% had an mRS > 3, compared to 21.3% of survivors in the SAH-NEW group ($P = .06$). Two hundred forty-five patients in the SAH-OLD group had cerebral aneurysms and 208 were treated (45% of the patient total). Sixty-five of the SAH-NEW patients received treatment (60% of the patient total, $P = .007$). In the SAH-OLD group, 62.9% of the patients underwent embolisation vs 74.6% in the SAH-NEW group ($P = .08$). Time to embolisation was 4.7 ± 8.2 days for SAH-OLD patients and 2.12 ± 2.2 days for SAH-NEW patients ($P = .01$). Twenty-two percent of SAH-OLD patients underwent surgery, compared to 25.4% in the SAH-NEW group ($P = .62$).

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Conclusions: Care for SAH patients has improved in this hospital: results include fewer mortalities, a higher number of treatments with a smaller proportion of endovascular treatments, and shorter times to treatment. Elapsed time to arteriography remains stable.

PALABRAS CLAVE
Hemorragia subaracnoidea;
Epidemiología;
Pronóstico;
Mortalidad;
Tratamiento intravascular;
Tratamiento quirúrgico

Tendencias en el tratamiento de los aneurismas cerebrales: análisis de una serie hospitalaria

Resumen
Introducción y objetivo: Conocer, en nuestro medio, si ha habido variaciones en el tiempo en la atención a la HSA.
Material y métodos: Análisis de 571 pacientes con HSA tratados en el Hospital Universitario La Fe.

Comparación de 2 periodos: HSA-VIEJA: 462 pacientes consecutivos atendidos entre abril del 1997 y marzo del 2005; HSA-NUEVA: 109 pacientes consecutivos atendidos entre marzo del 2007 y abril del 2010. Se analizaron las características demográficas, los factores de riesgo, la gravedad al ingreso, los tiempos hasta la arteriografía, el diagnóstico de aneurisma, el tratamiento quirúrgico o intravascular y sus tiempos, frecuencia de complicaciones neurológicas, la mortalidad durante el ingreso y escala de Rankin modificada (mRS) al alta.
Resultados: Media hasta la realización de la arteriografía: HSA-VIEJA: 2,18 ± 2,5 días, HSA-NUEVA: 2,37 ± 2,23 días, p = 0,49. Mortalidad: HSA-VIEJA 30% frente al 18,3% en HSA-NUEVA, p = 0,01. Entre los supervivientes al alta hospitalaria, un 13,3% en HSA-VIEJA tenía mRS > 3 frente a un 21,3% en HSA-NUEVA, p = 0,06. HSA-VIEJA: 245 pacientes tenían aneurisma cerebral, se trataron 208 (45% del total de los pacientes); HSA-NUEVA: reciben tratamiento 65 (60% del total de los pacientes), p = 0,007. HSA-VIEJA: se embolizaron 62,9%, HSA-NUEVA: 74,6%, p = 0,08. HSA-VIEJA: cirugía 22%, HSA-NUEVA: 25,4%, p = 0,62.
Conclusiones: En nuestro hospital ha mejorado la atención a la HSA: menor mortalidad, mayor número de tratamientos a expensas del tratamiento intravascular y menor tiempo hasta el tratamiento. El tiempo hasta la arteriografía ha permanecido estable.

Introduction

Non-traumatic subarachnoid haemorrhage (SAH) accounts for 5% of all cases of stroke. Compared to other types of stroke, this severe condition affects younger patients, and it is associated with high mortality, severe disability, and a substantial economic and social burden.[1] Treatment for SAH has evolved over the past few decades, mainly due to the introduction of endovascular treatment,[2] but also thanks to the development of neurosurgical techniques[3] and recent advances in neurocritical care.[4]

Hospital Universitario y Politécnico de La Fe, in Valencia, is a reference centre for the treatment of SAH. Our patients with SAH are managed according to the following protocol: after SAH diagnosis, patients are admitted to the intensive care unit (ICU) and undergo cerebral angiography as soon as possible. When aneurysms are detected, patients undergo embolisation immediately following diagnosis if the procedure is viable; when this is not the case, patients either undergo embolisation at a later time or receive surgical treatment, according to the neuroradiologist's and neurosurgeon's joint assessment. As a general rule, after discharge, patients receiving endovascular treatment are monitored by the neurology department whereas those undergoing surgery are monitored by the neurosurgery department.[5]

Treatment for cerebral aneurysms has undergone a paradigm shift: at present, endovascular treatment is the first-line option.[6] The growing interest in improving SAH management shown by neurologists, neurosurgeons, and neuroradiologists alike has led to developing protocols for treating SAH and its associated complications.

We were able to analyse SAH treatment outcomes longitudinally in our setting given that we had access to data on SAH spanning over a decade.

Objective

Our purpose was to analyse any changes in SAH management over time in our setting.