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Influence of antithrombotic agents on recurrence rate and clinical outcome in patients operated for chronic subdural hematoma

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ABSTRACT

Introduction: Chronic subdural hematoma (cSDH) is a common pathology encountered in neurosurgical practice, especially in elderly patients, who frequently require antithrombotic agents. The aim of this study was to investigate the influence of antithrombotic agents on recurrence rates and clinical outcomes in patients operated for cSDH.

Methods: A cohort of patients operated for cSDH at one center during a 5 years period was analyzed retrospectively. Presenting symptoms, coagulation testing, history of antithrombotic agents and comorbidities were obtained from the patient charts. The standard neurosurgical procedure was a single burr hole under local anesthesia with insertion of a subdural drainage. Questionnaires and telephone interviews were used to assess the clinical outcome using the modified Rankin Scale (mRS). Good outcome was defined as mRS 0 to 3 and poor outcome as mRS 4 to 6.

Results: 201 patients with cSDH underwent initial surgical treatment and were enrolled in the study. The median follow-up was 81 weeks. 41 patients (20.4%) were on antiplatelet drug and 43 (21.4%) were on phenprocoumon. A recurrent hematoma required surgery in 37 patients (18.4%). A poor outcome was seen in 36 patients (17.9%). Each of older age and administration of phenprocoumon at admission was an independent risk factor predictive of poor outcome, ($p=0.001$ and $p=0.031$, respectively). Administration of antithrombotic agents had no impact on hematoma recurrence.

Conclusion: Administration of phenprocoumon and older age might increase the risk of poor outcome in patients with cSDH. Neither the administration of phenprocoumon nor antiplatelet drug influenced the recurrence rate of subdural hematoma in our patient cohort.

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Influencia de los agentes anti-trombóticos en la tasa de recidiva y el resultado clínico en los pacientes operados de hematoma subdural crónico

R E S U M E N

Palabras clave:

Hematoma subdural crónico
Hematoma recurrente
Fármacos anti-plaquetarios
Fármacos anti-coagulantes
Fenprocumón

Introducción: El hematoma subdural crónico (HSC) es una enfermedad común en la práctica neuro-quirúrgica, especialmente en pacientes mayores, quienes requieren con frecuencia agentes anti-trombóticos. El objetivo de este estudio fue investigar la influencia de los agentes anti-trombóticos en las tasas de recidiva y los resultados clínicos en los pacientes operados de HSC.

Métodos: Se analizó retrospectivamente una cohorte de pacientes operados de HSC en un único centro, durante un periodo de 5 años. Se obtuvieron de las historias de los pacientes los síntomas de presentación, las pruebas de coagulación, el historial de agentes anti-trombóticos y las comorbilidades. El procedimiento quirúrgico estándar consistió en una trepanación bajo anestesia local, con inserción de un drenaje subdural. Se utilizaron cuestionarios y entrevistas telefónicas para valorar el resultado clínico mediante la Escala de Rankin modificada (mRS). El resultado favorable se definió como el valor de 0 a 3 de mRS, y el resultado desfavorable el valor de 4 a 6.

Resultados: Doscientos uno pacientes con HSC fueron sometidos a tratamiento quirúrgico inicial, y fueron incluidos en el estudio. El seguimiento medio fue de 81 semanas. A 41 pacientes (20,4%) se les administró tratamiento anti-plaquetario y a 43 (21,4%) fenprocumón. El hematoma recurrente requirió cirugía en 37 pacientes (18,4%). Se observaron resultados desfavorables en 36 pacientes (17,9%). La avanzada edad y la administración de fenprocumón al ingreso resultaron factores predictivos independientes del resultado desfavorable ($p=0,001$ y $p=0,031$, respectivamente). La administración de agentes anti-trombóticos no tuvo impacto sobre la recidiva del hematoma.

Conclusión: La administración de fenprocumón y la edad avanzada pueden incrementar el riesgo de resultado desfavorable en los pacientes con HSC. Ni la administración de fenprocumón ni la de fármacos anti-plaquetarios influyeron en la tasa de hematomas subdurales en nuestra cohorte de pacientes.

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Introduction

The evacuation of chronic subdural hematoma (cSDH) is one of the most common procedures in neurosurgical practice. The procedure is expected to continue to increase in frequency, since cSDH usually occurs in elderly patients and the demographic development in society leads to a rising number of patients over the age of seventy.¹ Many of these patients have several comorbidities and are more likely than younger patients to be on antithrombotic drugs at admission, which makes the perioperative management including anesthesia and reversal of antithrombotic drugs more challenging.

The pathophysiology behind this disease is well-understood and there is consensus that the process of the growing hematoma by continuous reabsorption and re-hemorrhage from the circumjacent membrane has to be disrupted. Local anesthesia and minimal invasive approaches are invaluable, in particular for multimorbid patients. However, the ideal surgical technique remains controversial. Mini-craniotomies as well as single or double burr holes are widely used.² It is also unclear to what extent intracranial membranes must be resected.³ Further, the benefit of the

insertion of a subdural drainage appears to be unanimous though it remains debatable how long the drainage should be left in situ.⁴

Although the evacuation of cSDH is considered an easy and safe procedure, recurrence rates up to 33% are reported.^{5,6} Recurrence is often associated with a longer hospital stay and an unfavorable disease course in the elderly and sometimes multimorbid patients. Several series have analyzed the link between the intake of antithrombotic drugs and hematoma recurrence rates and have reported inconsistent results.^{7,8} Although there are studies that have evaluated the impact of antithrombotic agents on patients suffering from traumatic brain injury,^{9,10} few studies have addressed the influence of these medications on the clinical outcome of patients with cSDH. In addition, venous thromboembolism prophylaxis in patients with traumatic brain injury has been addressed in previous studies,^{11,12} however it has not been discussed in the context of cSDH.

In this retrospective series, we introduce the surgical management of cSDH at a single center and investigate the impact of administration of antithrombotic drugs on the clinical outcome of patients surgically treated for cSDH.

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