

The role of pharmacotherapy in the management of chronic subdural haematoma

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Chronic subdural haematoma (cSDH) is a common neurological condition in elderly individuals, and its incidence is rising owing to an aging population and increasing use of anticoagulant and antiplatelet medications [1]. Affected patients can present with a variety of symptoms, such as gait disturbance and recurrent falls, progressive limb weakness, cognitive decline, acute confusion and headaches. Presentation can occasionally mimic stroke or rapidly progressive dementia [1]. The mainstay of management for symptomatic patients with sizeable subdural collections is surgical evacuation [2]. However, recent years have seen renewed interest in the pharmacological management of cSDH, which is the focus of the systematic review by Soleman and colleagues in *Swiss Medical Weekly* [3].

Recurrence following surgical evacuation, which affects 10 to 20% of patients in most contemporary series, leads to additional morbidity and can affect long-term outcome, including increased mortality [1, 4]. Pharmacological interventions have been used as adjunctive therapies during the perioperative period, with the aim to reduce the risk of recurrence or as an alternative to surgical intervention.

Exploring the role of pharmacological interventions in the management of cSDH patients is important because these interventions could target specific underlying pathophysiological mechanisms, such as inflammation, hyperfibrinolysis, angiogenesis and haemorrhage from neocapillaries [1, 5]. Additionally, improved access to medical care and imaging, at least in high-income countries, means that patients can be diagnosed earlier in their clinical course, making pharmacological treatment options more viable, with surgery potentially reserved for the more severely affected or comatose patient.

Soleman and colleagues have summarised thoroughly the various pharmacological interventions used in patients with cSDH. When considering nonsurgical options, it is also important to remember that there is a group of patients with small collections and virtually no symptoms attributable to the cSDH, in whom a “wait and watch” policy is appropriate and feasible, as long as the patients and their families are informed about symptoms that should prompt them to re-present to medical services. In terms of the pharmacological options, there is variation in their use even within the same countries and units, and this directly reflects the paucity of high-quality evidence [6]. Relatively

more experience exists with steroids, compared with other agents, but no evidence derived from randomised controlled trials is available yet. Tranexamic acid, statins, and angiotensin converting-enzyme inhibitors are potentially promising as they can target some of the pathophysiological mechanisms, but no high-quality evidence exists regarding their use. Hence, it is very encouraging that several trials of these agents are underway, as it is important that changes in practice are driven by robust research. The continued development of well-designed large multicentre randomised trials in the field of CSDH is crucial and likely to have a substantial impact on the management of patients, either by the introduction of effective agents into routine practice or by discontinuing the use of ineffective or harmful agents.

Additionally, the conduct of cSDH randomised trials needs to improve such that studies are adequately sized, and representative of “real-world” conditions by having broad inclusion criteria (if possible) and enrolling patients across several sites [7]. Moreover, work in several fields in the last few years has focused on the development of common outcome measures and data elements in order to facilitate trial meta-analyses [8, 9]. Our group has already initiated the “Core Outcomes and Common Data Elements in CSDH” (CODE-CSDH) project that aims to do exactly this in the cSDH field [10, 11]. Our systematic review, which is the first part of this project, has shown that outcome domains reported by cSDH studies include recurrence (94%), mortality (64% of included studies), complications (48%), functional outcomes (40%) and radiological (38%) outcomes [10]. However, we found significant heterogeneity in the definitions of the outcome measures, as evidenced by the seven different definitions of the term “recurrence,” with no definition given in 19% of the studies.

Finally, the conduct of prospective multicentre observational studies can facilitate the validation of trial findings in the real world. The multicentre prospective observational cSDH cohort study of the British Neurosurgical Trainee Research Collaborative (BNTRC), which collected data on 1205 patients with cSDH from 26 of the 33 UK and Ireland neurosurgical units between May 2013 and January 2014, showed that the UK-wide recurrence rate was 9% [12, 13]. This is very similar to the recurrence rate observed in the drain arm of the Cambridge cSDH trial [4]. More importantly, failure to insert a drain was an inde-

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pendent predictor of recurrence and unfavourable functional outcome at discharge in multivariate analysis. This validated the effectiveness of subdural drains in a real-world setting. Research collaboratives such as the BNTRC are well positioned to undertake patient-centred multicentre studies, including trials in the nonelective setting [14]. The BNTRC is currently involved with two multicentre randomised trials, one of which is examining the clinical effectiveness of a 2-week course of dexamethasone for symptomatic cSDH patients (Dex-CSDH) [15]. In summary, Soleman and colleagues have highlighted the limited evidence base for pharmacotherapy in cSDH management. The randomised trials that are currently underway will hopefully remedy this situation by providing robust evidence for the future but efforts also need to focus on improving the conduct of trials.

Disclosure statement

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