Tranexamic acid for chronic subdural hematoma

Iorio-Morin et al present the protocol for the Tranexamic Acid (TXA) in Chronic Subdural Hematomas (TRACS) trial aiming at determining whether TXA can increase the rate of CSDH resolution following conservative management, lower the number of required surgical procedures and decrease the rate of CSDH recurrence following surgical evacuation.

TRACS is a multicenter, double-blind, randomized, parallel-design, placebo-controlled, phase IIB study designed to provide preliminary efficacy data as well as feasibility, safety and incidence data required to plan a larger definitive phase III trial. Consecutive patients presenting with a diagnosis of chronic subdural hematoma will be screened for eligibility. Exclusion criteria include: specific risk factors for thromboembolic disease, anticoagulant use or contraindication to TXA. A total of 130 patients will be randomized to receive either 750 mg of TXA daily or placebo until complete radiological resolution of the CSDH or for a maximum of 20 weeks. CSDH volume will be measured on serial computed tomography (CT) scanning. Cognitive function tests, quality of life questionnaires as well as functional autonomy assessments will be performed at enrollment, at 10 weeks following randomization and at 3 months following treatment cessation. During the treatment period, patients will undergo standard CSDH management with surgery being performed at the discretion of the treating physician. If surgery is performed, the CSDH and its outer membrane will be sampled for in vitro analysis. The primary outcome is the rate of CSDH resolution by 20 weeks without intervening unplanned surgical procedure. Secondary outcomes include: CSDH volume, incidence of surgical evacuation procedures, CSDH recurrence, cognitive functions, functional autonomy, quality of life, incidence of complications and length of hospital stay. Planned subgroup analyses will be performed for conservatively versus surgically managed subjects and highly versus poorly vascularized CSDH.

CSDH is a frequent morbidity for which an effective medical treatment has yet to be discovered. The TRACS trial will be the first prospective study of TXA for CSDH.

TRIAL REGISTRATION:

NCT ID: NCT02568124 [1)].

The oral administration of tranexamic acid in a daily dose of 750mg has as basis the studies which indicate that fibrinolysis and the kinin-kallikrein inflammatory system have an important role in the growth of chronic subdural hematoma. These studies have led to the idea that the antifibrinolytic and anti-inflammatory treatment administration, basically tranexamic acid, can lead to the complete resection of the subdural haematoma. The study involving the tranexamic acid was conducted on a period of 4 years, the clinical follow up and the imagistic analysis of the patients in the study being on average of 58 days and the medium volume of the chronic subdural haematoma being reduced to 55,6ml. After the treatment with tranexamic acid, the volume of the haematoma was reduced to a medium size of 3,7ml, without its reoccurring or growing in size [2)].

Of 21 patients, 3 with early stages of CSDH were treated by bur hole surgery before receiving medical therapy. The median duration of clinical and radiographic follow-up was 58 days (range 28-137 days). Before tranexamic acid therapy was initiated, the median hematoma volume for the 21 patients was 58.5 ml (range 7.5-223.2 ml); for the 18 patients who had not undergone surgery, the median

hematoma volume was 55.6 ml (range 7.5-140.5 ml). After therapy, the median volume for all 21 patients was 3.7 ml (range 0-22.1 ml). No hematomas recurred or progressed. : Chronic subdural hematoma can be treated with tranexamic acid without concomitant surgery. Tranexamic acid might simultaneously inhibit the fibrinolytic and inflammatory (kinin-kallikrein) systems, which might consequently resolve CSDH. This medical therapy could prevent the early stages of CSDH that can occur after head trauma and the recurrence of CSDH after surgery [3].

1)
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3)
Kageyama H, Toyooka T, Tsuzuki N, Oka K. Nonsurgical treatment of chronic subdural hematoma with tranexamic acid. J Neurosurg. 2013 Aug;119(2):332-7. doi: 10.3171/2013.3.JNS122162. Epub 2013 May 3. PubMed PMID: 23641825.