Surgical Trial in Intracerebral hemorrhage (STICH)

The Surgical Trial in Intracerebral Hemorrhage (STICH) has failed to provide positive evidence to support the effect of surgical operation, and STICH2 also showed no benefit (NCT01320423) [1) 2)].

Surgical removal of the hematoma after ICH shows only rarely effects in neurological recovery, and the outcomes for the patients are unsatisfied. Furthermore, some clinical trials on blood pressure medications showed no benefit, including intensive blood pressure reduction in acute cerebral hemorrhage trial 2 (INTERACT2, NCT00716079), ICHADAPT (NCT00963976), and ATACH-2 (NCT00226096) [3) 4) 5)].

The role of surgery in the management of spontaneous intracerebral haemorrhage still remains a matter of debate. There is insufficient evidence to justify a general policy of early surgery for patients with spontaneous intracerebral haemorrhage compared to initial medical management but STICH did demonstrate that patients with superficial hematoma might benefit from craniotomy [6)].

A 2008 metaanalysis reviewed 10 randomized trials including 2059 patients.

Surgery was associated with a reduced risk of death and dependency (OR 0.71; 95% CI 0.61 to 0.91). However, the benefit was not robust, and there was significant heterogeneity for death as an outcome.

The largest trial in the meta-analysis was the STICH trial. In this study, the 503 patients assigned to early (median time to surgery was 30 hours after hemorrhage onset) surgical hematoma evacuation were slightly more likely to have a favorable outcome at six months compared to those managed with initial conservative treatment, but the trend did not reach statistical significance.

Benefit from those assigned to early surgery was nonsignificantly more likely in patients who had craniotomy as opposed to alternate techniques, and in those with hematoma located 1 cm or less from the cortical surface. The fact that 26 percent of patients initially assigned to conservative medical management underwent surgical evacuation may limit the ability of the study to show a benefit from surgery.

Subsequently, the STITCH II trial found that rates of unfavorable outcomes at six months were similar in the 307 conscious patients treated with early (within 48 hours of onset) surgical hematoma evacuation versus the 294 patients treated conservatively (59 versus 62 percent).

Limitations in interpreting the results of this study include the selected nature of the patients treated, (conscious, without intraventricular extension), as well as a high crossover rate; 21 percent of patients assigned to conservative therapy did undergo surgery.

When STITCH II data were combined with individual patient data from 14 other trials, a survival benefit for surgery was suggested for subgroups of patients, including those with poorer prognosis on presentation, those who deteriorated after presentation, and those with superficial ICH and no intraventricular extension.

Has shown that there is no significant benefit of early surgery compared with initial conservative treatment in patients with spontaneous intracerebral hemorrhage [7)].

But trials in Japan have shown that early surgery can improve the mortality of patients with spontaneous ICHs [8].

Furthermore, several recent studies have suggested that haematoma clot reduction can limit the brain edema and local ischaemia, as well as the severity of the neurological deficits that are observed after an intracerebral hemorrhage (ICH). [9]

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