

ABSTRACT

Introduction & Aim:

Therapeutic hypothermia is an established neuroprotective intervention in post-cardiac arrest patients. In our study we investigated the therapeutic value of mild induced hypothermia in ischemic stroke patients and its effect on mortality and degrees of disability.

Methods:

A total of 40 patients admitted to the ICU with ischemic stroke were included in a prospective, randomized, double centre study, and were randomly assigned to group A (30 patients) as the study group and group B (10 patients) as the control group. Group A patients were subjected to induction of mild hypothermia (34-35 degrees Celsius) for a 24 hour period, plus the conventional stroke therapy. On the other hand, group B patients received the conventional stroke therapy alone. Hypothermia was achieved by IV acetaminophen, external cooling methods, and IV cold saline infusion. All patients were subjected to a thorough physical examination, GCS and SOFA score calculations upon admission and daily thereafter. Brain CT scan imaging was performed upon admission, 48 hours and 5 days after admission. Clinical outcome (conscious level, motor function, brain edema, duration of ICU stay, mortality) was recorded for all patients, as well as the development of any complication.

Results:

In the study group A, 63.3% of patients have shown markedly resolved brain edema, versus only 20% of patients in the control group B (P value 0.028). The median length of ICU stay (days) in group A was 6 days, versus 8.5 days in group B (P value 0.006). The GCS (cognitive functions) correlated strongly in an inversely proportional relationship to the mean SOFA score (R = -0.89). Mortality in group A was 30% versus 40% mortality in group B, (P value = 0.719). In group A, 23.3% of patients were discharged with marked disability versus 30% of patients in group B (P value 0.719). In group A, 53.3% of patients have developed infectious complications versus 50% of patients in group B (P value 1).

Conclusion:

Mild induced hypothermia is a promising neuroprotective intervention that is cheap, readily available and almost devoid of serious complications. It decreases the length of ICU stay and effectively controls cytotoxic brain edema associated with large infarctions. Despite the lack of a statistically significant effect on the final outcome, there is a trend for a better outcome in patients treated with hypothermia which calls for further studies on larger numbers of patients.

Key Words:

Cerebrovascular Stroke – Hypothermia .