Stichworte: HIE, therapeutische Hypothermie, Entwicklungsländer

Titel der Originalarbeit

Sabir, Hemmen et al; Comparing the effacicy in reducing brain injury of different neuroprotective agents following neonatal hypoxia-ischemia in newborn rats: a multi-drug randomized controlled screening trail

Hintergrund

- >85% cases of intrapartum hypoxia-ischemia occur in LMIC (low/middle income countries); neonatal encephalopathy (NE) remains one of the leading causes for child mortality and contributes to long term morbidities (CP, epilepsy).

- Therapeutic hypothermia (HT) is actually the only available an efficiant treatment of HIE but only in HIC. Are there any promising treatment options for HT in LMIC?

Zusammenfassung der Ergebnisse

-methods:

1)screening the literature for promising putative therapeutic agents for NE,

2) establish a rank-order for the most promising neuroprotective treatments to be able to use in LMIC

3) finally test and compare neuroprotective efficacy of 25 therapeutic agents using the standardized Vannuci P7 rat model. A total of 606 rats were used, the control group consisted of 230 rats, the remaining represented the treatment group

- results: eight components significantly reduced brain area loss in the treatment group, the strongest effect was seen for Caffeine, sonic hedgehog agonist (SAG) and Allopurinol

- probability of efficacy was superior to therapeutic hypothermia for Caffeine, SAG, Allopurinul, Melatonin, Clemastin, ß-Hydroxybutyrat and Omegaven

Stärken

This is the first multi-drug neonatal randomized control trial (RCT) in P7 rats comparing efficacy of putative therapeutic agents for brain protection after HI.

Interestingly, the gold standard HT was overruled by drugs which are normally used in the therapy for preterms like caffeine oder melatonin.

I think this study represents a huge chance for a better survival of NE in the LMIC and possibly offers new therapeutic options even for HIC

Limitationen

In certain clinical scenarios the study protocol may not be feasible. You have to prescreen the neuroprotective agents in a more amenable clinical translation scenery not only in the most optimal scenario as used in this study. The animals had no long-term-follow-up. The clear pattern of mechanism have not been found yet

Fazit

to keep an eye on LMIC concerning a readily accessible treatment is unfortunately rare. It will still take a lot of time to make the study protocol real but in my opinion this is a very promising approach

Autorin / Autor der Zusammenfassung

Sonja Stutte; Abteilung für Neonatologie und Päd Int an der Uniklinik Bonn