Neuroprotective effect of remote ischemic postconditioning and therapeutic hypothermia in a piglet model of moderate to severe HIE

L Hansen[1] *TCK Andelius*[1] *M Andersen*[1] *H Brogård*[1] *KJ Kyng*[1] *TB Henriksen*[1]
[1]Department of Pediatrics, Aarhus University Hospital

Background: Therapeutic hypothermia (TH) is an efficient treatment of neonates with hypoxic ischemic encephalopathy (HIE). However, TH only reduces part of the acquired brain damage. Remote ischemic postconditioning (RIPC) has been shown to be neuroprotective in rats and piglets. It is unknown whether there is any additional neuroprotective effect when combining RIPC with TH. The aim of this study is to investigate the effect of RIPC combined with TH in a piglet model of moderate to severe HIE.

Methods: A total of 24 piglets will be anesthetised. A hypoxic-ischemic insult will be induced by reducing the fraction of inspired oxygen during a 45-minute period. Animals will be randomized to TH+RIPC or TH. RIPC will be induced by occluding blood flow to both hind limbs for five minutes followed by five minutes of reperfusion in four cycles. Outcome will be thalamic lactate/n-acetylaspartate-ratio measured by magnetic resonance spectroscopy performed 24 and 48 hours after the insult.

Results: Data will be collected during 2020.

Conclusion: A conclusion is expected in August 2021

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