



September 16th, 2021 11:00 - 13:00

WORKSHOP 2

ID 110. NEUROPROTECTIVE EFFECT OF REMOTE ISCHEMIC POSTCONDITIONING COMBINED WITH HYPOTHERMIA IN A PIGLET MODEL OF MODERATE TO SEVERE HYPOXIC-ISCHEMIC ENCEPHALOPATHY

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Background

Hypoxic-ischemic encephalopathy (HIE) is a major cause of mortality and neurological disability in newborns. Therapeutic hypothermia (TH) is the only neuroprotective treatment for HIE. However, TH is only partly neuroprotective and additional neuroprotective treatments to supplement TH are needed.

Remote ischemic postconditioning (RIPC) is brief, repeated non-lethal ischemia to one or more extremities. RIPC has shown neuroprotective properties in rats and piglets. It is still unknown whether RIPC adds to the neuroprotective effect of TH. Our primary objective is to investigate the effect of RIPC combined with TH in a piglet model of moderate to severe hypoxia and ischemia.

Methods

A global hypoxic-ischemic insult will be induced in thirty-four newborn piglets. The piglets will be randomized to TH+RIPC, TH alone, or supportive care only. RIPC will be conducted by occluding blood flow to both hind limbs for five minutes, followed by five minutes of reperfusion in four cycles. RIPC will be repeated after 12- and 24 hours. Our primary outcome will be a composite endpoint of death or severe CNS outcome, defined as the upper quartile of adverse thalamic lactate/n-acetylaspartate-ratio measured by magnetic resonance spectroscopy. Secondary outcomes will be brain histology, amplitude integrated encephalogram, and various magnetic resonance imaging measures.

Results

Data will be collected during summer 2021.

Conclusion

Preliminary data will be presented at jENS 2021.

None declared



ID 113. THE ROLE OF MicroRNAs IN THE DEVELOPMENT OF RETINOPATHY OF PREMATURITY

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INTRODUCTION: Retinopathy of prematurity (ROP) develops after abnormal proliferation of retinal vessels and is one of the main reasons of preventable childhood blindness. A large number of angiogenic factors are effective in the pathogenesis of ROP. MicroRNA (miRNA)s are small RNA molecules that are approximately 20-22 nucleotides in length, not encoded, in a single chain structure, and are involved in many cellular events and regulate gene expression posttranscriptionally. In the development of ROP, MicroRNAs may be effective in the balance of factors that inhibit and activate angiogenic factors and in the process of regulating vascular integrity and angiogenesis. In this study, we aimed to determine the changes in the blood levels of miR-146a, miR-143, miR-210, miR-126, miR-211, miR-221, miR-106 and let 7f which control pathological angiogenesis and apoptosis, and to investigate their role in predicting prognosis in cases of ROP.

MATERIALS AND METHODS: The study was conducted prospectively in preterm infants with the diagnosis of ROP at every stage. Serum levels of 8 miRNAs were measured by Real-time PCR. Gender, gestational age, birth weight, delivery pattern, morbidity and ROP stages were recorded and compared. The relationship between disease stage and progression with miRNA gene expression was analysed. Preterm infants without ROP were taken as the control group.

RESULTS: A total of 63 infants including 48 patients with ROP and 15 controls, were included in the study. Of the infants who had ROP, 29 (60.4%) were boys. The final analysis was performed in 61 babies, since sufficient data could not be obtained in 2 samples among the miRNAs. In the ROP group, miR-210, miR-146a, miR-21 were statistically significantly lower. In the ROP group the expression level of miR-143 was insignificantly lower, miRNA-221 was insignificantly higher, and miR-106, miR-126 and let 7f were variable.

CONCLUSION: In our study, it was observed that miR-210, miR-146a, miR-21 and miR-143 were significantly lower in patients with ROP compared to the control group. These miRNAs may be used as biomarkers of early diagnosis and to determine the severity of ROP.

None declared