MEDIAN NERVE SEPs PREDICT MOTOR OUTCOME IN NEONATAL IPOSSIC-ISCHEMIC ENCEPHALOPATHY TREATED WITH HYPOTHERMIA

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The role of SEPs in motor prognosis of hypoxic-ischemic neonatal encephalopathy has been evaluated in pre-hypothermia era (Suppiej 2010) but their role in babies treated with hypothermia has not been studied yet.
We investigated motor outcome at 12 months of age in 38 children who suffered from hypoxic-ischemic neonatal encephalopathy and were treated with hypothermia at the NICU of the Paediatric University Hospital of Padua. All performed median nerve SEPs in the neonatal period, traces were scored as bilaterally present (group1) or as bilaterally/unilaterally absent (group2) cortical N20 response. At follow up 4/38 children had the diagnosis of cerebral palsy (all of them had bilaterally absent cortical SEP). Of the remaining 34, 7 had abnormal (< 15°) scores at the motor subscales of the Griffith's Scale. A significant difference was found between motor scores of group 1 (mean 97 DS 13) and group2 (mean 82 SD 14) (p=.023 Mann-Whitney test).
Data seem to suggest a prognostic value of SEPs to predict neuromotor outcome as evaluated with Griffiths Scale at one year of age. However, these results needs to be confirmed at 24 months of age when clinical prognosis is known to be more reliable.

Key Points

- Most of the studies evaluating the outcome in newborns undergoing therapeutic hypothermia focused on severe outcome (death or major disability), this study evaluated also minor motor impairment
- The motor subscales of the Griffiths' battery highlight neuromotor impairment at 12 months of age in survivors of neonatal encephalopathy without CP.
- Bilateral absence of cortical median nerve SEP is a risk factor for CP.
- Median nerve cortical SEP seems to correlate with minor motor impairment at 12 months, as evaluated by the motor subscales of the Griffiths Scale.