HIGH DOSE PHENOBARBITAL COMA IN PAEDIATRIC REFRACTORY STATUS EPILEPTICUS

Background and importance

Status Epilepticus (SE) → morbimortality

When first-line drugs cannot solve SE therapeutic coma should be initiated with:

- Midazolam (used)
- Propofol / Thiobarbital
- Phenobarbital (PHB) (therapeutic profile, low evidence especially in children)

Early treatment → death and sequelae

Aim and objectives

Describing High-Dose PHB (HD-PHB) used in therapeutic coma in paediatric refractory SE and their side effects.

Assess Therapeutic Drug Monitoring (TDM) to achieve Barbiturate Coma (BC).

Material and methods

Observational retrospective study

Referral paediatric hospital 2012-2022

51 paediatric intensive care unit patients who received intravenous (IV) PHB:

- 6 of them underwent BC

Results

6 patients with seizures refractory to propofol or midazolam received HD-PHB to achieve BC.

Variables collected:

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<thead>
<tr>
<th>PHB plasmatic levels during coma</th>
<th>Age</th>
<th>Weight</th>
<th>Nº of previous antiepileptics</th>
<th>Loading and maintenance doses of PHB</th>
<th>BC days until resolution of SE</th>
<th>Adverse effects of HD-PHB</th>
<th>Outcome</th>
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- Resolution of the status was evaluated by electroencephalogram.
- A suppression burst was observed in all of them.
- Tapering regimen was carried out until PB plasma levels were <350µmol/L.
- One patient died within 6 months post-coma.

Conclusion and relevance

- HD-PHB seems to be an effective therapeutic procedure in paediatric refractory SE.
- TDM is important to ensure the maintenance of coma and avoid toxicity.
- More pharmacokinetic studies are needed to establish a population model and clear protocols for BC management.