



CHU DE GRENOBLE

CRF LyTONEPAL

Version 4.0, 14/09/2015

***Long Term Outcome of Neonatal hypoxic EncePhALopathy in the era of
neuroprotective treatment with hypothermia***

Cerebral MRI

MRI completed: ☐ yes ☐ no

If yes:

- Date of completion: |_|_| / |_|_| / |_|_|_|_| (dd/mm/yyyy)

- Sequence:

- | | | |
|------------------------|------------------------------|-----------------------------|
| ▪ T1 | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| ▪ T2 | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| ▪ Diffusion | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| ▪ T2* or gradient echo | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| ▪ Other: | <input type="checkbox"/> yes | <input type="checkbox"/> no |

If yes for Other, please specify: _____

- Image quality:

- ☐ Very good (without any artefacts)
- ☐ Good (at least the 3 sequences: axial T1, axial T2 and axial good quality Diffusion)
- ☐ Poor/ not interpretable (at least one out of the 3 sequences above present artifacts)

- Is the MRI normal: ☐ yes ☐ no

If the MRI is normal (= yes), proceed to the conclusion question (degree of injury)

If the MRI is ABNORMAL (= no):

- Degree of certainty for this abnormality:
- ☐ no doubt ☐ moderate doubt ☐ significant doubt

If the MRI is abnormal: Ask the questions: degree of certainty and DETECTED ANOMALIES SECTION

DETECTED ANOMALIES

1. Basal Ganglia anomalies: ☐ yes ☐ no

If "no" for the basal ganglia anomalies, proceed to the anomalies of posterior limb internal capsule (PLIC) question.

If « yes » for basal ganglia anomalies:

- Degree of certainty: ☐ no doubt ☐ moderate doubt ☐ significant doubt
- Diffuse: ☐ yes ☐ no
- Localized: ☐ yes ☐ no

If « yes » for basal ganglia anomalies, location of the anomaly:

- Putamen: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Globus pallidus: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Thalamus: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Caudal nucleus: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left et gauche

If « yes » for basal ganglia anomalies, sequences where the anomaly is visualized:

- T1: ☐ yes ☐ no If yes: ☐ hyper signal ☐ iso signal ☐ hypo signal
- T2: ☐ yes ☐ no If yes: ☐ hyper signal ☐ iso signal ☐ hypo signal
- Diffusion: ☐ yes ☐ no If yes: ☐ restriction ☐ increase

2. Posterior limb internal capsule anomalies (PLIC): ☐ yes ☐ no

If « no » for posterior limb internal capsule anomalies, proceed to the cortical anomalies question

If « yes » for posterior limb internal capsule anomalies:

- Degree of certainty: ☐ no doubt ☐ moderate doubt ☐ significant doubt

If « yes » for posterior limb internal capsule anomalies:

- Unilateral: ☐ yes ☐ no If yes: ☐ right ☐ left
- Bilateral: ☐ yes ☐ no

If « yes » for posterior limb internal capsule anomalies, sequences that visualize the anomaly:

- T1: ☐ yes ☐ no If yes: ☐ iso signal ☐ hypo signal (according to Basal ganglia)
- T2: ☐ yes ☐ no
- Diffusion: ☐ yes ☐ no

3. Cortical anomalies: ☐ yes ☐ no

If “no” for cortical anomalies, proceed to the white matter anomalies question

If « yes » for cortical anomalies:

- Degree of certainty: ☐ no doubt ☐ moderate doubt ☐ significant doubt

If “yes” for cortical anomalies:

- Diffuse: ☐ yes ☐ no
- Localized: ☐ yes ☐ no

If “yes” for cortical anomalies: Location:

- Rolandic: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Insular: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Mesial temporal: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Occipital: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left

- Anterior junctional: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Posterior junctional: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left

If "yes" for cortical anomalies: Visibility

- T1: ☐ yes ☐ no If yes: ☐ hypersignal ☐ iso signal ☐ hypo signal
- T2: ☐ yes ☐ no If yes: ☐ hypersignal ☐ iso signal ☐ hypo signal
- Diffusion: ☐ yes ☐ no If yes: ☐ restriction ☐ increase

4. White matter anomalies: ☐ yes ☐ no

If "no" for white matter anomalies, proceed to the corpus callosum question

If "yes" for white matter anomalies:

- Degree of certainty: ☐ no doubt ☐ moderate doubt ☐ significant doubt

If « yes » for white matter anomalies:

- Diffuse: ☐ yes ☐ no
- Localized: ☐ yes ☐ no
- If yes for localized: punctiform (<5mm): ☐ yes ☐ no
- If yes for punctiform: number: ☐ ≤ 5 or ☐ >5
- If yes for localized: areas: ☐ yes ☐ no

If yes for white matter anomalies, Location:

- Periventricular: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Anterior junctional: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Posterior junctional: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Centrum semiovale: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Sub-cortical: ☐ yes ☐ no

If « yes » for sub cortical location, specify by answering the following questions:

- Frontal: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Temporal: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Parietal: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left
- Occipital: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left

If « yes » for white matter, sequences visualizing the anomaly:

- T1 ☐ yes ☐ no If yes: ☐ hypersignal ☐ hypo signal
- T2 ☐ yes ☐ no If yes: ☐ hypersignal ☐ hypo signal

- Diffusion ☐ yes ☐ no If yes: ☐ restriction ☐ increase

5. Corpus callosum anomalies: ☐ yes ☐ no

If no for corpus callosum anomalies, proceed to the brainstem anomaly question

If yes for the corpus callosum anomalies

- Degree of certainty: ☐ no doubt ☐ moderate doubt ☐ significant doubt

If yes for corpus callosum anomalies, Location:

- Splenium: ☐ yes ☐ no
- Knee: ☐ yes ☐ no

If yes for corpus callosum anomalies, sequences visualizing the anomaly:

- T1: ☐ yes ☐ no If yes: ☐ hypersignal ☐ hypo signal
- T2: ☐ yes ☐ no If yes: ☐ hypersignal ☐ hypo signal
- Diffusion: ☐ yes ☐ no If yes: ☐ restriction ☐ increase

6. Brainstem anomalies: ☐ yes ☐ no

If no for brainstem anomalies, proceed to the cerebellum anomalies question

If yes for the brainstem anomalies:

- Degree of certainty: ☐ no doubt ☐ moderate doubt ☐ significant doubt

If yes for brainstem anomalies:

- Diffuse: ☐ yes ☐ no
- Localized: ☐ yes ☐ no

If yes for brainstem anomalies, Location:

- Pons (dorsal): ☐ yes ☐ no
- Midbrain: ☐ yes ☐ no
- Bulb: ☐ yes ☐ no

If yes for brainstem anomalies, sequences visualizing the anomaly:

- T1: ☐ yes ☐ no If yes: ☐ hyper signal ☐ hypo signal
- T2: ☐ yes ☐ no If yes: ☐ hyper signal ☐ hypo signal
- Diffusion: ☐ yes ☐ no If yes: ☐ restriction ☐ increase

7. Cerebellum anomalies ☐ yes ☐ no

If no for cerebellum anomalies, proceed to the « others » question: hemorrhagic injuries

If yes for cerebellum anomalies:

- Degree of certainty: ☐ no doubt ☐ moderate doubt ☐ significant doubt

If yes for cerebellum anomalies:

- Diffuse: ☐ yes ☐ no
- Localized: ☐ yes ☐ no

If yes for cerebellum anomalies, Location:

- Vermis: ☐ yes ☐ no
- Hemisphere: ☐ yes ☐ no If yes: ☐ right ☐ left ☐ right and left

8. Others: Hemorrhagic injuries: ☐ yes ☐ no

If no for hemorrhagic injuries, proceed to the conclusion

If yes for hemorrhagic injuries

- Degree of certainty: ☐ no doubt ☐ moderate doubt ☐ significant doubt

If yes for hemorrhagic injuries

- Intra parenchymal: ☐ yes ☐ no
- Intra ventricular: ☐ yes ☐ no
- Extra axial: ☐ yes ☐ no

Conclusion

- Degree of injury:
☐ normal examination ☐ moderate injury ☐ severe injury

If the examination is normal, proceed to the open comments section

If injuries (severe or moderate), precise the site and/or extension:

- Peripheral (cortical, subcortical or junctional) ☐ yes ☐ no
- Central (Basal ganglia thalami) ☐ yes ☐ no
- Diffuse ☐ yes ☐ no

Open comment: (malformation injury, other)
