

eTable 1. Conventional MRI scoring system

Basal ganglia and thalamic score

0= normal

1= mild (focal abnormal signal intensity)

2= moderate (multifocal abnormal signal intensity)

3= severe (widespread abnormal signal intensity)

Posterior limb of the internal capsule score

0= normal

1= equivocal (reduced or asymmetrical signal intensity)

2= loss (reversed or abnormal signal intensity bilaterally on T₁ and/or T₂-weighted sequences)

White matter score

0= normal

1= mild (exaggerated long T₁ and long T₂ in periventricular white matter only)

2= moderate (long T₁ and long T₂ extending out to subcortical white matter and/or focal punctate lesions or focal area of infarction)

3= severe widespread abnormalities including overt infarction, hemorrhage and long T₁ and long T₂. Infarction was classified as areas of excessive long T₁ and long T₂ with either loss of gray-white matter differentiation (usually within the first week) or exaggerated gray-white matter differentiation (after the first week). Optic radiations were scored abnormal if they demonstrated increased signal intensity on T₁-weighted images

Cortex score

Cortical involvement was scored as the presence of abnormal signal intensity, usually decreased T₁ or cortical highlighting. The sites documented included specifically the central sulcus, interhemispheric fissure and the insula

0= normal

1= mild (1-2 sites involved)

2= moderate (3 sites involved)

3= severe (more than 3 sites involved)

eTable 2. Clinical characteristics, MR results and neurodevelopmental outcomes of the mildly encephalopathic babies who progressed to moderate encephalopathy after six hours

		Case No 1	Case No 2	Case No 3	Case No 4	
Delivery		Em LSCS ²	SVD ¹	SVD ¹	Instrumental	
Type of admission		Outborn	Inborn	Inborn	Inborn	
Gestational age (weeks+days)		41+0	40+3	38+1	37+6	
Birth Weight (g(centile))		3270(25-50)	4140(75-91)	4640(91-98)	2630(2-9)	
Cardiotocography (CTG)		Other abnormality	Normal	Normal	Other abnormality	
Arterial cord pH		7.0	7.0	7.0	7.0	
Arterial cord base excess		NA	NA	-9.9	NA	
pH on first blood gas		6.9	7.1	7.2	7.1	
Apgar 1 minute		1	4	6	6	
Apgar 5 minute		5	6	8	9	
Apgar 10 minute		6	8	10		
Resuscitation at birth		Bag and mask	Bag and mask	Bag and mask	Oxygen	
Complications at birth		None	Shoulder dystocia	Shoulder dystocia	Failure to progress	
Inotropic support at admission		Yes	No	No	No	
Neurological examination at admission* 0= normal 1= mild 2= moderate 3= severe	LOC ⁴		1	1	1	1
	Spont. Activity		1	1	1	0
	Posture		0	1	1	1
	Tone		1	1	1	1
	Reflexes ⁵	Moro	0	0	1	0
		Suck	0	0	0	0
	Auton. System ⁶	Pupils	0	0	0	0
		Heart rate	0	0	0	0
		Respiration	0	0	0	0

Maternal Pyrexia	Yes	No	No	No	
Prolonged rupture of membranes	No	No	No	Yes	
Rectal temperature on admission (°C)	38.2	36.3	37.0	37.0	
Age at start of active cooling (hours)	NA	NA	NA	12	
Maximum CRP in first 72 hours of age(g/L) ⁷	3	5	4	4	
Blood/CSF positive culture	No	No	No	No	
Seizure onset age, hours	12	7	33	10	
MRI	Cortex	0	0	0	1
	Basal ganglia/thalamus	0	0	0	0
	White matter	2	1	1	1
	Posterior limb of the internal capsule	0	0	0	0
⁸ Lac/NAA	0.29	0.12	0.11	0.15	
Neurodevelopmental Outcome at 2 years	Unknown	Normal	Abnormal**	Normal	
Cognitive composite score	NA	100	NA	80	
Language composite score	NA	83	NA	91	
Motor composite score	NA	100	NA	91	
aEEG	Normal	Normal	Normal	Normal	

¹SVD=spontaneous vaginal delivery; ²Em LSCS = Emergency lower segment caesarean section; ⁴LOC= Level of consciousness; ⁵Reflexes category include Moro and suck; ⁶Autonomic System including pupils, respiration and heart rate. ⁷CRP= C-reactive protein; ⁸Lac/NAA: (lactate+threonine)/(N-acetylaspartate+N-acetylaspartylglutamate); *To classify as mild encephalopathy, babies had at least one abnormality in the neurological examination, but no evidence of moderate or severe encephalopathy (which requires at least 3 moderate or severe abnormalities)
**Only a detailed neurological examination was performed, without Bayley-III. This infant also had hyperekplexia.

eFigure 1. Typical example of white matter injury showing multiple focal punctate lesions (white arrows) on axial T₂-weighted (A), T₁-weighted and diffusion weighted MR images.

