Table 4: Association between NHC (NHC-a, NHC-n and control group) and measured physiological parameters (n=56)

Factor	β (95% CI)				*P* value			
	Group	Scan age	Birth weight	Twins	Group	Scan age	Birth weight	Twins
Yv, %	0.7 (–2.9, 4.4)	–1.2 (–2.3, –0.1)	0.006 (0.002, 0.01)	-5.0 (-15.0, 5.0)	0.69	<0.05	<0.05	0.32
CBF, mL/100 g/min	–2.6 (–4.0, –1.1)	0.4 (–0.04, 0.9)	0.001 (–0.001, 0.003)	0.6 (–3.5, 4.6)	<0.05	0.07	0.53	0.79
$CMRO_2$, μmol/100 g/min	–6.5 (–10.2, –2.8)	1.3 (0.1, 2.4)	0.003 (–0.002, 0.007)	7.4 (–2.8, 17.6)	<0.05	<0.05	0.30	0.15
Brain volume, mL	13.1 (–6.9, 33.1)	14.5 (8.4, 20.7)	0.008 (–0.02, 0.03)	-77.2 (–132.6, -21.8)	0.20	<0.05	0.55	<0.05

Note: β, regression coefficient; CI, confidence interval; CBF, cerebral blood flow; $CMRO_2$, cerebral metabolic rate of oxygen; Yv, oxygen saturation fractions in venous blood.

Table 5 Association between neonatal venous ionized calcium level (mmol/L) and measured physiological parameters (n=56)

Factor	β (95% CI)				*P* value			
	iCa level	Scan age	Birth weight	Twins	iCa level	Scan age	Birth weight	Twins
Yv, %	2.0 (–12.9, 16.9)	–1.2 (–2.3, –0.06)	0.006 (0.002, 0.11)	-4.6 (-14.4, 5.3)	0.79	<0.05	<0.05	0.36
CBF, mL/100 g/min	8.2 (1.8, 14.5)	0.4 (–0.06, 0.9)	0.001 (–0.001, 0.003)	-0.6 (–4.8, 3.6)	<0.05	0.08	0.38	0.76
$CMRO_2$, μmol/100 g/min	24.2 (8.7, 39.7)	1.3 (0.1, 2.5)	0.003 (–0.002, 0.008)	4.5 (–5.7, 14.7)	<0.05	<0.05	0.22	0.38
Brain volume, mL	–7.8 (–91.6, 75.9)	14.9 (8.6, 21.2)	0.005 (–0.02, 0.03)	-70.1 (–125.3, -14.9)	0.85	<0.05	0.73	0.01

Note: β, regression coefficient; CI, confidence interval; CBF, cerebral blood flow; $CMRO_2$, cerebral metabolic rate of oxygen; iCa, venous ionized calcium; Yv, oxygen saturation fractions in venous blood.

Table 6: Variables associated with hypocalcemia with abnormal structural MRI

Parameter		Univariate analysis			Multivariate analysis		
		NHC-a (n=24)	**NHC -n (n=13)**	***P* value**	**OR**	***95% CI***	***P* value**
Characteristics	Males, n (%)	14 (58.3)	7 (53.8)	0.27			
	Birth weight, g	2080.8±532.1	1676.5±695.9	0.94			
	Birth age, weeks	34.3±3.6	32.2±3.3	0.86			
	Scan age, weeks	37.2±3.2	36.0±1.8	0.43			
	Apgar score						
	1 min	7.0±3.5	9.4±0.5	0.55			
	5 min	5.5±3.5	8.0±1.3	0.49			
Blood gas analysis	PCO_2, mmHg	37.4±8.4	42.0±9.2	0.09			
	PaO_2, mmHg	68.0±22.1	75.5±16.1	0.09			
	SaO_2, %	95.8±6.7	97.1±1.8	0.36			
	Glucose, mmol/L	4.6±1.6	4.6±1.5	0.67			
	Sodium, mmol/L	131.0±5.5	134.6±5.6	0.78			
	Potassium, mmol/L	4.5±0.9	4.7±1.3	0.82			
	iCa, mmol/L	0.9±0.2	0.8±0.1	0.50			
	Chlorine, mmol/L	105.6±5.5	107.5±5.6	0.83			
Physiological parameters using MRI	Yv, %	63.2±16.1	63.8±7.5	0.90			
	CBF, mL/100 g/min	11.2±4.5	17.1±4.7	0.004	0.80	0.65–0.99	0.04
	$CMRO_2$, μmol/100 g/min	27.4±10.7	37.9±12.1	0.02	0.97	0.89–1.05	0.44
	Brain volume, mL	296.9±87.3	305.6±94.2	0.78			

Note: Data are expressed as n (% total) or mean ± standard deviation. NHC, Neonatal hypocalcemia, NHC-a Newborns with abnormal structural MRI; NHC-n, NHC newborns with normal structural MRI; SaO_2, oxygen saturation; OR, odds ratio; PaO_2, partial pressure of oxygen; PCO_2, partial pressure of carbon dioxide; iCa, venous ionized calcium; CI, confidence interval; CBF, cerebral blood flow; $CMRO_2$, cerebral metabolic rate of oxygen; Yv, venous oxygenation. *P*-values are based on the chi-square test and Wilcoxon two-sample exact tests.