

**ON-LINE FIG 1.** Cerebral WM, cystic lesion, focal unilateral, score 1 (axial T2).



**ON-LINE FIG 2.** Cerebral WM, cystic lesion, focal bilateral, score 2 (axial T2).



**ON-LINE FIG 3.** Cerebral WM, cystic lesion, extensive unilateral, score 3 (axial T2).



**ON-LINE FIG 4.** Cerebral WM, cystic lesion, extensive bilateral, score 4 (axial T2).



**ON-LINE FIG 5.** Cerebral WM, focal signal abnormality, focal punctate, score 1 (axial TI).



**ON-LINE FIG 7.** Cerebral WM, focal signal abnormality, linear, score 3 (axial T2).



**ON-LINE FIG 6.** Cerebral WM, focal signal abnormality, extensive punctate, score 2 (axial TI).



**ON-LINE FIG 8.** Cerebral WM, thinning of the corpus callosum. Measure genu, midbody, and splenium on a midsaggital section (T2) and correct genu and splenium for PMA at MR imaging by using the following equations: cGenu = Measured Genu +  $0.03 \times (40$ -PMA at MRI). cSplenium = Measured Splenium + $0.03 \times (40$ -PMA at MRI). Score 0: cGenu > 1.13 mm and midbody > 0.7 mm and cSplenium > 1.84 mm. Score 1: cGenu < 1.13 mm or midbody < 0.7 mm or cSplenium < 1.84 mm. Score 2: (cGenu <1.13 mm or midbody < 0.7 mm) and cSplenium < 1.84 mm.



**ON-LINE FIG 9.** Cerebral WM, dilated lateral ventricles. Measure left (LV) and right ventricle (RV) at the level of the ventricular atrium (coronal T2) and correct for PMA at MR imaging by using the following equation:  $cRV = Measured RV + 0.15 \times (40-PMA at MRI)$ .  $cLV = Measured LV + 0.13 \times (40-PMA at MRI)$ . Score 0: cRV < 9.12 mm and cLV < 8.42 mm. Score 1: One or both: 9.12 mm < cRV < 10.39 mm; 8.42 mm < cLV < 9.39 mm. Score 2: One or both: cRV > 10.39 mm; cLV > 9.39 mm. Cerebellum, volume reduction. Measure transcerebellar diameter (TCD) at the level of the atria, maximal horizontal distance (coronal T2), correct for PMA at MR imaging by using the following equation: cTCD = Measured TCD +  $1.78 \times (40-PMA at MR]$ . Score 0: cTCD > 50.02 mm. Score 1: 48.04 mm < cTCD < 50.02 mm. Score 2: cTCD < 48.04 mm.



**ON-LINE FIG 10.** Cerebral WM, volume reduction. Measure biparietal width at level of the basilar turn of the cochlea (coronal T2) and correct for PMA at MR imaging by using the following equation: Corrected BPW = Measured BPW +  $2.33 \times (40$ -PMA at MRI). Score 0: cBPW > 78.52 mm. Score 1: 74.6 mm < cBPW < 78.52 mm. Score 2: cBPW < 74.6 mm. Cortical GM, increased extracerebral space (coronal T2). Measure the interhemispheric distance (IHD) between the crowns of the superior frontal gyri at the same section as measurement for BPW. Correct for PMA at MR imaging by using the following equation: cIHD = Measured IHD +  $0.16 \times (40$ -PMA at MRI). Score 0: cIHD < 3.98 mm. Score 1: 3.98 mm < cIHD < 4.69 mm.



**ON-LINE FIG 11.** Deep GM, signal abnormality, focal unilateral, score 1 (axial T2).



**ON-LINE FIG 12.** Deep GM, signal abnormality, focal bilateral, score 2 (axial T2).



**ON-LINE FIG 13.** Deep GM, signal abnormality, extensive unilateral, score 3 (axial T2).



**ON-LINE FIG 14.** Deep GM, signal abnormality, extensive bilateral, score 4 (axial T2).







**ON-LINE FIG 16.** Cerebellum, signal abnormality, punctate unilateral, score 1 (axial TI).



**ON-LINE FIG 17.** Cerebellum, signal abnormality, punctate bilateral, score 2 (axial T2).



**ON-LINE FIG 18.** Cerebellum, signal abnormality, extensive unilateral, score 3 (axial T2).

On-line Table I: Scoring parameters and findings in preterm sample early and term MKI, and term reference sample N	n-line Ta	ble 1: Scoring par	ameters and findings	in preterm samply	e early and term MR	I, and term reference sam	ple MRI <sup>a</sup>
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Early MM         Early MM         Reference         Difference           Crebral WM         0         None         76 (923)         73 (953)         20 (35)         0         No           Cystic lesions         0         None         76 (923)         73 (953)         38 (1003)         73 (175)         10 (75)	on the factor is occorn 8 parameter						
Cerebral WM         Vone         76 (92%)         73 (95%)         38 (100%)         71           Cystic lesions         0         None         76 (92%)         73 (95%)         38 (100%)         71           2         Focal signal abnormality         1         Focal signal abnormality         0         0         0         0           Focal signal abnormality         None         62 (75%)         66 (65%)         38 (100%)         .05           Myelination delay         0         None         62 (75%)         66 (65%)         0         .01%           Thinning of corpus callosum         0         Genu or midbody and splenium <2 SDs below mean         10 (75%)         37 (97%)         .01%           Dilated lateral ventricles         0         Genu or midbody of splenium >2 SDs below mean         80 (95%)         61 (75%)         37 (97%)         .01%           Volume reduction         0         Genu or midbody of splenium >2 SDs below mean         80 (95%)         61 (75%)         37 (97%)         .21%           Volume reduction         0         Genu or midbody of splenium >2 SDs below mean         80 (95%)         61 (75%)         37 (97%)         .51           Corrical GM         0         One sides within 2 SDs of mean         80 (95%)         74 (95%)		Score		Early MRI (n = 83) (t1)	Term MRI (n = 77) (t2)	Reference (n = 38)	Difference (t1–t2) ( <i>P</i> )
Cystic lesions         0         None         76 (P73)         73 (P5%)         38 (00%)         71           I         Focal unilatizatia         5 (6%)         2 (3%)         0         0         0           Second signal abnormality         I         Focal bilateral         1 (1%)         1 (1%)         1 (1%)         0 <td>Cerebral WM</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Cerebral WM						
1         Focal unilateral         5 (65)         2 (28)         0           2         Focal bilateral         1(1%)         0         0         0           3         Extensive unilateral         0         0         0         0           4         Extensive bilateral         1(1%)         0         0         0           5         Cocal signal abnormality         0         None         62(75%)         66(86%)         38(00%)         .05           6         Myelination delay         0         None         62(75%)         66(86%)         38(00%)         .00*           1         Focal punctate         12(14%)         4 (5%)         0         .00*         .00*           4         Extensive punctate         2 (28)         2 (3%)         0         .00*	Cystic lesions	0	None	76 (92%)	73 (95%)	38 (100%)	.71
2         Focal bilateral         1(%)         1(%)         0           3         Extensive unilateral         0         0         0           4         Extensive bilateral         1(%)         1(%)         0           0         None         62 (75%)         66 (86%)         38 (100%)         0.5           1         Focal punctate         2 (24%)         4 (55%)         0           2         Extensive punctate         2 (25%)         0         0           3         Linear         7 (8%)         5 (6%)         0           1         Only PUC myelinated         0         1(%)         0           1         Genu or midbody of splenium >2 SDs below mean         81 (96%)         1 (87%)         0           1         Genu or midbody and splenium >2 SDs below mean         1(1%)         0         1           2         Genu or midbody and splenium >2 SDs below mean         67(3%)         5 (96%)         .24           1         Genu or midbody and splenium >2 SDs below mean         6 (78%)         38 (00%)         .50           0         80 triside within 2 SDs of mean         6 (78%)         31 (07%)         0           0         0 trotal ide SD s Do mean         6 (78%)	,	1	Focal unilateral	5 (6%)	2 (3%)	`o ´	
Bit Processing and abnormality         3         Extensive bilateral         10°/10°/10°/10°/10°/10°/10°/10°/10°/10°/		2	Focal bilateral	1 (1%)	1 (1%)	0	
Focal signal abnormality         4         Extensive bilateral         1[1%]         1[1%]         0           A         None         62 (75%)         66 (86%)         38 (100%)         .05           A         Extensive punctate         2 (2%)         2 (3%)         0         .05           Myelination delay         0         Myelinated PLIC and corona radiata         0         72 (94%)         38 (100%)         <.0 <sup>b</sup> Thinning of corpus callosum         1         Genu or midbody and splenium >22 SDs below mean         80 (96%)         4 (5%)         0           2         Genu or midbody and splenium >22 SDs below mean         11(%)         14 (18%)         11(3%)           0         Not sides within 25 SDs of mean         69 (83%)         32 (5%)         .24           0         Both sides within 25 SDs of mean         69 (83%)         31 (40%)         37 (97%)         <.0 <sup>b</sup> 1         One side >23 SDs bub <23 SDs bub enemean		3	Extensive unilateral	0	0	0	
Focal signal abnormality         0         None         62 (75%)         66 (86%)         38 (100%)         .05           1         Focal punctate         12 (14%)         4 (5%)         0		4	Extensive bilateral	1 (1%)	1 (1%)	0	
Image: Constraint of the second sec	Focal signal abnormality	0	None	62 (75%)	66 (86%)	38 (100%)	.05
2         Extensive punctate $2 (23)$ $2 (33)$ $0$ Myelination delay         7 (83) $5 (63)$ $0$ Myelination delay         0         Myelinated PLIC and corona radiata         0 $7 (943)$ $38 (1002)$ $<0^{10}$ Thinning of corpus callosum         0         Genu, midbody, and splenium $<2$ SDs below mean $10 (965)$ $61 (798)$ $37 (978)$ $<0^{10}$ Dilated lateral ventricles         0         Both sides within 2 SDs of mean $67 (333)$ $57 (73)$ $56 (953)$ $24$ Volume reduction         0         c del x > 3 SDs below mean $6(78)$ $31 (403)$ $37 (978)$ $51 (978)$ $27 (978)$ $52 (53)$ Cortical GM         1         One         So below mean $29 (353)$ $27 (353)$ $38 (1003)$ $32 (173)$ Gyral maturation         0         None $3 (103)$ $2 (23)$ $0$ $0$ $0$ 1         Cercia Unilateral         0         0         0         0 $0$ $0$ 2         Corcia Unilateral         0         0         0         0 <td>, , , , , , , , , , , , , , , , , , ,</td> <td>1</td> <td>Focal punctate</td> <td>12 (14%)</td> <td>4 (5%)</td> <td>`o ´</td> <td></td>	, , , , , , , , , , , , , , , , , , ,	1	Focal punctate	12 (14%)	4 (5%)	`o ´	
Myelination delay         3         Linear         7 (8%)         5 (6%)         0           Myelination delay         0         Myelinated LIC and corona radiata         0         72 (94%)         38 (100%)         <0 <sup>16</sup> Thinning of corpus callosum         2         Minimal myelination; no myelin in PLIC         83 (100%)         4 (5%)         0           Dilated lateral ventricles         0         Both sides within 2 SDs below mean         1(1%)         14 (18%)         1(3%)           Dilated lateral ventricles         0         Both sides within 2 SDs below mean         69 (83%)         55 (71%)         36 (95%)         24           1         One or both sides within 2 SDs below mean         69 (83%)         1(1%)         14 (18%)         13 (40%)         37 (97%)         51           2         Gene or midbody or splenium >2 SDs below mean         8 (10%)         7 (93%)         0         -           4         One or both sides >3 SDs above mean         8 (10%)         37 (97%)         51         -           2         Cortical GM         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -		2	Extensive punctate	2 (2%)	2 (3%)	0	
Myelination delay         0         Myelinated PLIC and corona radiata         0         72 (94%)         38 (100%) $< 0^{10}$ Thinning of corpus callosum         0         0 (1%)         0         10%)         0           Thinning of corpus callosum         0         Genu, midbody, and splenium <2 SDs below mean		3	Linear	7 (8%)	5 (6%)	0	
Initial or only PLIC myelinated       0       1 (%)       0         2       Minimal myelination; no myelin in PLIC       83 (100%)       4 (5%)       0         1       Genu, midbody, and splenium >2 SDs below mean       1 (%)       14 (8%)       11 (3%)         1       Genu or midbody and splenium >2 SDs below mean       1 (%)       14 (8%)       11 (3%)         0       Both sides within 2 SDs of mean       69 (8%)       55 (7%)       36 (95%)       .24         1       One side >2 SDs below mean       8 (10%)       7 (9%)       0       0         2       One or both sides within 2 SDs of mean       6 (7%)       15 (19%)       2 (5%)       .24         0       nor side >2 SDs below mean       8 (10%)       7 (9%)       0       .25         2       One or both sides within 2 SDs of mean       2 (3%)       2 (7%)       0       .25         2       CBPW <2 SDs below mean	Myelination delay	0	Myelinated PLIC and corona radiata	`o´	72 (94%)	38 (100%)	<.01 <sup>b</sup>
Thinning of corpus callosum       2       Minimal mydelination; no mydelin in PUC       83 (005%) $4$ (5%)       0         Thinning of corpus callosum       0       Genu, midbody, and splenium >2 SDs below mean       1(%)       1(8%)       1(3%)         Dilated lateral ventricles       0       Genu or midbody or splenium >2 SDs below mean       2(%)       2(3%)       0         Dilated lateral ventricles       0       Both sides within 2 SDs of mean       6(7%)       15 (19%)       2 (5%)       .24         Volume reduction       0       cBPW <2 SDs below mean	, ,	1	Only PLIC myelinated	0	1 (1%)	`o	
Thinning of corpus callosum       0       Genu, midbody, and splenium $\sim 2$ D0s below mean       80 (96%)       61 (79%)       37 (97%) $< 0^{19}$ Dilated lateral ventricles       0       Genu or midbody of splenium $\geq 2$ D0s below mean       1(%)       14 (18%)       1(3%)         Dilated lateral ventricles       0       Both sides within 2 D0s ob below mean       67 (83%)       55 (71%)       36 (95%)       .24         1       One side $\geq 2$ D0s but <3 D0s above mean		2	Minimal myelination; no myelin in PLIC	83 (100%) <sup>⊂</sup>	4 (5%)	0	
1       Genu or midbody or splenium >2 SDs below mean $1(\%)$ $14(18\%)$ $1(3\%)$ 2       Genu or midbody and splenium >2 SDs below mean $2(2\%)$ $2(3\%)$ $5(7\%)$ $36(95\%)$ .24         1       One side >2 SDs below mean $6(7\%)$ $15(19\%)$ $2(5\%)$ .24         1       One side >2 SDs below mean $6(7\%)$ $15(19\%)$ $2(5\%)$ .24         1       One side >2 SDs below mean $34(14\%)$ $31(40\%)$ $37(97\%)$ .51         2       One or both sides >3 SDs above mean $34(14\%)$ $31(40\%)$ $37(97\%)$ .51         1       cBPW >2 SDs below mean $20(24\%)$ $9(25\%)$ $0$ Cortical GM       1       Focal unilateral       0       0       0         2       Focal unilateral       0       0       0       0         3       Extensive unilateral       0       0       0       0       0         4       Extensive unilateral       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0	Thinning of corpus callosum	0	Genu, midbody, and splenium $<2$ SDs below mean	80 (96%)	61 (79%)	37 (97%)	<.01 <sup>b</sup>
2         Genu or midbody and splenium >2 SDs below mean         2 (2%)         2 (3%)         0           Dilated lateral ventricles         0         Borth sides within 2 SDs of mean         69 (83%)         55 (71%)         36 (95%)         .24           1         One side >2 SDs but <3 SDs above mean	0	1	Genu or midbody or splenium $>2$ SDs below mean	1 (1%)	14 (18%)	1(3%)	
Dilated lateral ventricles         0         Both sides within 2 SDs of mean         69 (83%)         55 (71%)         36 (95%)         .24           1         One side >2 SDs but <3 SDs above mean		2	Genu or midbody and splenium $>2$ SDs below mean	2 (2%)	2 (3%)	`o´	
Volume reduction1One side $\geq 2$ SDs but $< 3$ SDs above mean6 (7%) (7(9%)15 (19%) (7(9%)2 (5%) (7(9%)2One or both sides $\geq 3$ SDs above mean8 (10%) (7(9%)7 (9%) (7(9%)01cBPW $\geq 2$ SDs below mean29 (35%) (27 (35%)13 (40%) (7(9%).512cBPW $\geq 3$ SDs below mean20 (24%)19 (25%)02cBrW $\geq 3$ SDs below mean20 (24%)19 (25%)0Cortical GM1Focal unilateral0002Focal unilateral00003Extensive unilateral00004Extensive unilateral00004Extensive bilateral000012 $\leq$ delay $< 4$ weeks63 (76%)75 (97%)38 (100%)<.01^b	Dilated lateral ventricles	0	Both sides within 2 SDs of mean	69 (83%)	55 (71%)	36 (95%)	.24
Volume reduction         2         One or both sides $\geq 3$ SDs above mean         8 (10%)         7 (9%)         0           1         cBFW <2 SDs below mean		1	One side $>$ 2 SDs but $<$ 3 SDs above mean	6 (7%)	15 (19%)	2 (5%)	
Volume reduction         0         cBPW <2 SDs below mean         34 (41%)         31 (40%)         37 (97%)         .51           1         cBPW >2 SDs below but <3 SDs below mean		2	One or both sides $>$ 3 SDs above mean	8 (10%)	7 (9%)	ò	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Volume reduction	0	cBPW <2 SDs below mean	34 (41%)	31 (40%)	37 (97%)	.51
2       cBPW > 3 SDs below mean $20(24\%)$ $19(25\%)$ $0$ Cortical GM       9       0       None $83(100\%)$ $76(99\%)$ $38(100\%)$ $32$ 1       Focal unilateral       0       0       0       0         2       Focal unilateral       0       0       0       0         3       Extensive unilateral       0       0       0       0         Gyral maturation       0       Delay <2 weeks		1	cBPW $>$ 2 SDs below but $<$ 3 SDs below mean	29 (35%)	27 (35%)	1(3%)	
Cortical GM         Signal abnormality       0       None       83 (100%)       76 (99%)       38 (100%)       .32         1       Focal unilateral       0       0       0       0       0         3       Extensive unilateral       0       0       0       0       0         4       Extensive unilateral       0       0       0       0       0         6yral maturation       0       Delay <2 weeks		2	cBPW $>$ 3 SDs below mean	20 (24%)	19 (25%)	`o´	
Signal abnormality0None83 (100%)76 (99%)38 (100%).321Focal unilateral00002Focal bilateral00003Extensive unilateral00004Extensive bilateral00006O0000012 ≤ delay <2 weeks	Cortical GM			. ,			
Image: Constraint of the second s	Signal abnormality	0	None	83 (100%)	76 (99%)	38 (100%)	.32
2Focal bilateral0 $1(1\%)$ 03Extensive unilateral0004Extensive bilateral0006Delay <2 weeks	ç ,	1	Focal unilateral	Ò Í	O	`o ´	
3       Extensive unilateral       0       0       0         Gyral maturation       4       Extensive bilateral       0       0       0         0       Delay < 2 weeks		2	Focal bilateral	0	1 (1%)	0	
Gyral maturation4Extensive bilateral0000Delay < 2 weeks		3	Extensive unilateral	0	0	0	
Gyral maturation       0       Delay <2 weeks       63 (76%)       75 (97%)       38 (100%)       <.01 <sup>b</sup> 1       2 ≤ delay <4 weeks		4	Extensive bilateral	0	0	0	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Gyral maturation	0	Delay $<$ 2 weeks	63 (76%)	75 (97%)	38 (100%)	<.01 <sup>b</sup>
2Delay $\geq 4$ weeks7 (8%)00Increased extracerebral space0cHD within 2 SDs of mean68 (82%)55 (71%)37 (97%).061cHD >2 SDs and <3 SDs above mean		1	$2 \le delay \le 4$ weeks	13 (16%)	2 (3%)	0	
Increased extracerebral space       0       clHD within 2 SDs of mean       68 (82%)       55 (71%)       37 (97%)       .06         1       clHD >2 SDs and <3 SDs above mean		2	$Delay \ge 4$ weeks	7 (8%)	0	0	
$\begin{tabular}{ c c c c c c } & 1 & clHD > 2 & SDs and < 3 & SDs above mean & 10 (12%) & 7 (9%) & 1 (3%) \\ & 2 & clHD > 3 & SDs above mean & 5 (6\%) & 15 (19\%) & 0 \\ \hline \\ & & & & & & & & & & & & & & & & &$	Increased extracerebral space	0	cIHD within 2 SDs of mean	68 (82%)	55 (71%)	37 (97%)	.06
2       clHD >3 SDs above mean       5 (6%)       15 (19%)       0         Deep GM		1	cIHD $\geq$ 2 SDs and $<$ 3 SDs above mean	10 (12%)	7 (9%)	1 (3%)	
Deep GM         Signal abnormality         0         None         75 (90%)         75 (97%)         38 (100%)         .01 <sup>b</sup> 1         Focal unilateral         5 (6%)         1 (1%)         0         0         0         0         0           2         Focal bilateral         3 (4%)         1 (1%)         0<		2	cIHD $>$ 3 SDs above mean	5 (6%)	15 (19%)	0	
Signal abnormality         0         None         75 (90%)         75 (97%)         38 (100%)         .01 <sup>b</sup> 1         Focal unilateral         5 (6%)         1 (1%)         0         0         0           2         Focal bilateral         3 (4%)         1 (1%)         0         32         2	Deep GM						
1       Focal unilateral $5(6\%)$ $1(1\%)$ 0         2       Focal bilateral $3(4\%)$ $1(1\%)$ 0         3       Extensive unilateral       0       0       0         4       Extensive bilateral       0       0       0         9       cDGMA <2 SDs below mean	Signal abnormality	0	None	75 (90%)	75 (97%)	38 (100%)	.01 <sup>b</sup>
2       Focal bilateral       3 (4%)       1 (1%)       0         3       Extensive unilateral       0       0       0         4       Extensive bilateral       0       0       0         6       cDGMA <2 SDs below mean		1	Focal unilateral	5 (6%)	1 (1%)	0	
3         Extensive unilateral         0         0         0           4         Extensive bilateral         0         0         0           4         Extensive bilateral         0         0         0           0         cDGMA <2 SDs below mean		2	Focal bilateral	3 (4%)	1 (1%)	0	
Volume reduction         4         Extensive bilateral         0         0         0         0           Volume reduction         0         cDGMA <2 SDs below mean		3	Extensive unilateral	0	0	0	
Volume reduction         0         cDGMA <2 SDs below mean         59 (71%)         50 (65%)         37 (97%)         .06           1         cDGMA >2 SDs below and <3 SDs below mean		4	Extensive bilateral	0	0	0	
1       cDGMA >2 SDs below and <3 SDs below mean	Volume reduction	0	cDGMA $<$ 2 SDs below mean	59 (71%)	50 (65%)	37 (97%)	.06
2         cDGMA >3 SDs below mean         7 (8%)         14 (18%)         0           Cerebellum         0         None         78 (94%)         72 (94%)         38 (100%)         .32           1         Punctate unilateral         4 (5%)         5 (6%)         0           2         Punctate bilateral         0         0         0           2         Punctate bilateral         0         0         0		1	cDGMA $\geq$ 2 SDs below and $<$ 3 SDs below mean	17 (20%)	13 (17%)	1 (3%)	
Cerebellum         0         None         78 (94%)         72 (94%)         38 (100%)         .32           1         Punctate unilateral         4 (5%)         5 (6%)         0           2         Punctate bilateral         0         0         0		2	cDGMA >3 SDs below mean	7 (8%)	14 (18%)	0	
Signal abnormality         0         None         78 (94%)         72 (94%)         38 (100%)         .32           1         Punctate unilateral         4 (5%)         5 (6%)         0           2         Punctate bilateral         0         0         0           2         Punctate bilateral         0         0         0	Cerebellum						
1Punctate unilateral4 (5%)5 (6%)02Punctate bilateral000	Signal abnormality	0	None	78 (94%)	72 (94%)	38 (100%)	.32
2 Punctate bilateral 0 0 0		1	Punctate unilateral	4 (5%)	5 (6%)	0	
		2	Punctate bilateral	0	0	0	
3 Extensive unilateral 1(1%) 0 0		3	Extensive unilateral	1 (1%)	0	0	
4 Extensive bilateral 0 0 0		4	Extensive bilateral	0	0	0	
Volume reduction         0         cTCD <2 SDs below mean         69 (83%)         54 (70%)         37 (97%)         .09	Volume reduction	0	cTCD <2 SDs below mean	69 (83%)	54 (70%)	37 (97%)	.09
1 cTCD >2 SDs below and <3 SDs below mean 8 (10%) 16 (21%) 1 (3%)		1	cTCD $>$ 2 SDs below and $<$ 3 SDs below mean	8 (10%)	16 (21%)	1 (3%)	
2 cTCD >3 SDs below mean 6 (7%) 7 (9%) 0		2	cTCD >3 SDs below mean	6 (7%)	7 (9%)	0	

Note:— cBPW indicates corrected biparietal width; cDGMA, corrected deep GM area; cTCD corrected transcerebellar diameter; IHD, interhemispheric distance; PLIC, posterior limb of the internal capsule; t1–t2, difference between early and term MRI of preterm infants.

<sup>a</sup> Data are No. (%). Early MRI, 29 to 35 weeks PMA; term MRI, 40 to 42 weeks PMA; mean and SD refer to term reference sample data. *P* < .05 represents a significant difference between early and term MRI scores in the preterm sample.

<sup>b</sup> Significant.

<sup>c</sup> All early MRIs were scored 2 for myelination delay to represent "unmyelinated PLIC and corona radiata."

extension         Description         Enclored unitated         Enclore		Score 0	Score 1	Score 2	Score 3	Score 4	Total Score
Cystic fisions         None         Focial initiated         <	erebral WM						
Ford signal shormally Mytimerion delyNoreContine rg 1 Contine rg 3 (On-tine rg 3)Contine rg 3) (On-tine rg	Cystic lesions	None	Focal unilateral	Focal bilateral	Extensive unilateral	Extensive bilateral	
rocal spat anomany Weinated PLC and corona radiata         Construction (Chorline Fig.9)         Construction (Chorline Fig.9			(On-line Fig I)	(On-line Fig 2)	(On-line Fig 3)	(On-line Fig 4)	
Mejinated PLC and coconardiata         Önit PLC myelination         Önit PLC myelination <th< td=""><td>Focal signal abnormality</td><td>None</td><td>Focal punctate (On-line Fig 5)</td><td>Extensive punctate (On-line Fig 6)</td><td>LInear (On-line Fig 7)</td><td></td><td></td></th<>	Focal signal abnormality	None	Focal punctate (On-line Fig 5)	Extensive punctate (On-line Fig 6)	LInear (On-line Fig 7)		
Thinking of corpus calloan         Masure genu midbody, and splenum no a midbagital section and correct genu and splenium for PMA at MRI using equations:         Masure legenu midbody, and splenum + 003 × (40-PMA at MR)           Chen Le Masured Genum - 1003 × (40-PMA at MR)         Cenu - Extended Genum + 003 × (40-PMA at MR)         Contingent of the second splenum + 003 × (40-PMA at MR)           Dilated lateral venticies         Cenu - Extended Genum + 003 × (40-PMA at MR)         Contingent of the second splenum + 003 × (40-PMA at MR)           Dilated lateral venticies         Contingent of the condition	Myelination delay	Myelinated PLIC and corona radiata	Only PLIC myelinated	Minimal myelination; no mvelin in PLIC			
Cipelnum = Measured Splenium + 003 × (40 PM at MR)       Cenve < 13 mm or midbody	Thinning of corpus callosum (On-line Fig 8)	Measure genu, midbody, and spleni cGenu = Measured Genu $\pm 0.03 \times$	um on a midsagittal section and c (40-PMA at MRI)	orrect genu and splenium for PI	MA at MRI using equatior	:S	
Image: Series / Sharing and indbody         Cent < 113 mm or midbody         Cent < 114 mm         Cent < 113 mm         Cent < 113 mm         Cent < 114 mm		cSplenium = Measured Splenium +	-0.03 imes (40-PMA at MRI)				
Dilated lateral ventricles Dilated lateral ventricles (On-line Fig.9) $\sim U_{\rm L}$ mm and coptenum $< U_{\rm L}$ mesure lateral (V + 013) × (40-PMA at MR) $< U_{\rm L}$ mesure lateral (V + 013) × (40-PMA at MR) $U_{\rm L}$ mesure lateral (V + 013) × (40-PMA at MR) $U_{\rm L}$ mesure lateral (V + 013) × (40-PMA at MR) $U_{\rm L}$ models $U_{\rm L}$ mesure lateral (V + 013) × (40-PMA at MR) $U_{\rm L}$ models $U_{\rm L}$ mesure lateral (V + 013) × (40-PMA at MR) $U_{\rm L}$ models $U_{\rm L}$ mesure lateral (V + 013) × (40-PMA at MR) $U_{\rm L}$ models $U_{\rm L}$ matures $U_{\rm L}$ massures lateral width at level of the basilar turn of the cochlea and correct for PMA at MR) using equation: $U_{\rm L}$ mesure lateral width at level of the basilar turn of the cochlea and correct for PMA at MR] $U_{\rm L}$ massing lateral (V + 103) × (40-PMA at MR) $U_{\rm L}$ models $U_{\rm L}$ models $U_{\rm L}$ massing lateral (V + 103) × (40-PMA at MR) $U_{\rm L}$ models $U_{\rm L}$ models $U_{\rm L}$ models $U_{\rm L}$ massing lateral maturation $U_{\rm L}$ massing latera lateral lateral lateral lateral lateral lateral lateral lateral lateral inferior cochleal givi at same section as measurement for BPW; $U_{\rm L}$ massing lateral later		cGenu > 1.13 mm and midbody	cGenu < 1.13 mm or midbody	(cGenu < 1.13 mm or midbod	Χ		
Diated lateral ventriclesMeasure left and right ventricle at level of ventricular atrium and correct for PMA at MRI using equations: 		> 0.7 mm and cSplenium > 1.84 mm	< 0.7 mm or c5plenium < 1.84 mm	< 0.7 mm) and cSplenium < 1.84 mm			
(On-line Fig 9)       ckV = Measured RV + 013 × (40-PMA at MR)         ckV = Measured LV + 013 × (40-PMA at MR)       1 or both:         ck < 9.12 mm ad cLV < 84.2 mm < cRV > 0.39 mm       cKV > 0.39 mm         Volume reduction       9.12 mm < cRV > 0.39 mm       cKV > 0.39 mm         Volume reduction       8.12 mm < cRV > 0.39 mm       cRV > 0.39 mm         Volume reduction       8.12 mm < cRV < 9.39 mm	Dilated lateral ventricles	Measure left and right ventricle at le	evel of ventricular atrium and cor	rect for PMA at MRI using equa	tions:		
With the figure of the start mutual of both:       0 or both:       0 or both:       0 or both:         Youltime reduction       8.42 mm < cut > 9.12 mm < cut > 0.33 mm       0 or both:       0.010 mm         Youltime reduction       8.42 mm < cut > 0.33 mm       cut > 0.33 mm       cut > 0.33 mm         Youltime reduction       8.42 mm < cut > 0.12 mm < cut > 0.33 mm       0.010 mitime interval with at level of the basilar turn of the cochlea and correct for PMA at MRI using equation:       Whotal = (ange 0-15)         GPW = Measured BPW + 2.33 × (40-PMA at MRI)       0.010 mm       cut > 0.35 mm       cut > 0.010 mm         GPW > 78.52 mm       78.65 mm < cut > 78.52 mm       CBPW < 74.6 mm	(On-line Fig 9)	cRV = Measured RV + 0.15 $\times$ (40-P)	MA at MRI) MA at MRI)				
Volume reduction       9.12 mm < crkV < 10.39 mm		$c_{\rm EV} < 0.12 \text{ mm}$ and $c_{\rm EV} < 0.12 \text{ mm}$		1 or hoth:			
Wolume reduction       8.47 mm < c.V < 9.39 mm			9 17 mm < 5RV < 10 39 mm	- 0. 00011. 			
Volume reduction $8.4. \text{ mm} < c.U > 9.39 \text{ mm} < c.U > 9.31 \text{ mm} < c.U > 9.32 \text{ mm} < c.U > 74.6 \text{ mm} < c.BPW < 78.52 \text{ cBPW < 74.6 mm} < c.BPW < 73.52 \text{ cBPW < 74.6 mm} < c.BPW < 73.52 \text{ mm} < c.BPW < 74.6 \text{ mm} < c.BPW < 73.51 \text{ mm} < c.BPW < 74.6 \text{ mm} < c.BPW < 73.51 \text{ mm} < c.BPW < 74.6 \text{ mm} < c.BPW < 73.51 \text{ mm} < c.BPW < 74.6 \text{ mm} < c.BPW < 73.51 \text{ mm} < c.BPW < 74.6 \text{ mm} < C.BPW < 74.$							
Volume reduction       Measure biparietal width at level of the basilar turn of the cochlea and correct for PMA at MRI using equation:       With the provident of the basilar turn of the cochlea and correct for PMA at MRI using equation:         (On-line Figure 10)       GPW > 78.52 mm       74.0-PMA at MRI using equation:       WM total = (range 0–15)         cortical GM       None       Focal unilateral       Focal bilateral       Extensive unilateral       Extensive unilateral         Signal abnormality       None       Focal unilateral       Focal bilateral       Extensive unilateral       Extensive unilateral         Gyral maturation       One       Focal unilateral       Focal bilateral       Extensive unilateral       Extensive unilateral         Gyral maturation       None       Focal unilateral       Focal bilateral       Extensive unilateral       Extensive unilateral         Gyral maturation       None       Focal unilateral       Focal bilateral       Extensive unilateral       Extensive unilateral         Gyral maturation       None       Focal unilateral       Focal bilateral       Extensive unilateral       Extensive unilateral         Gyral maturation       None       Focal unilateral       Focal bilateral       Extensive unilateral       Extensive unilateral         Gyral maturation       Pole       40       Rocal bilateral       Extensive unila			8.42  mm < cLV < 9.39  mm	cLV > 9.39  mm			
(Dn-line Figure 10)       GBW = Measured BPW + 2.33 × (40-PMA at MR))       (M total = (range 0-15)         ortical GM       BPW > 78.52 mm       74.6 mm < cBPW < 73.52	Volume reduction	Measure biparietal width at level of	the basilar turn of the cochlea an	id correct for PMA at MRI using	g equation:		
critical GM       CBPW > 78.52 mm < 74.6 mm < CBPW < 78.52 mm < CBPW < 74.6 mm	(On-line Figure 10)	cBPW = Measured BPW + 2.33 $\times$ (4	40-PMA at MRI)				
cortical GMmmSignal abnormalityNoneFocal unilateralFocal bilateralExtensive unilateralExtensive unilateralSignal abnormalityNoneFocal unilateralFocal unilateralExtensive unilateralExtensive unilateralGyral maturation34- to 36-wk PMA: marginal sulcus and paracentral gyrus present; secondary sulci in frontal lobes, superior and middle temporal and prerolandic, insula, and occipital gyri established; 40-weekFOAA: additional secondary gyri in transverse and inferior temporalMA: tertiary inferior temporal and inferior compital gyri and sulci (Inder et al, 2003*)Delay $< 2 \text{ wk}$ Delay $< 3 \text{ wk}$ Increased extracerebral space $2 \le \text{delay} < 4 \text{ wk}$ Delay $\geq 4 \text{ wk}$ Delay $< 2 \text{ wk}$ (On-line Fig I0)Correct for PMA at MRI using quartion: $2 \le \text{delay} < 4.69 \text{ mm}$ Corrical GM total $= (rar(Dn-line Fig 10)cHD < 3.98 \text{ mm} < cHD < 4.69 \text{ mm}cHD > 4.69 \text{ mm}Corrical GM total = (rar$		cBPW > 78.52 mm	74.6 mm $<$ cBPW $<$ 78.52	cBPW < 74.6 mm			WM total = (range 0–15)
DefinitionNoteFocal unilateralFocal bilateralExtensive unilateralExtensive bilateralSignal abnormalitySignal abnormalitySignal abnormalityExtensive unilateralExtensive bilateralSignal abnormality34 - to 36-wk PMA: marginal sulcus and paracentral gyrus present; secondary sulci in frontal lobes, superior and middle temporal and prerolandic,insulu, and occipital regions present; secondary sulci in frontal lobes, superior and middle temporal34 - to 36-wk PMA: marginal sulcus and paracentral gyrus present; secondary gyri in transverse and inferior temporalmodel temporal and prerolandic,PMA: tertiary inferior temporal and inferior compital gyri and sulci (Inder et al, 2003)Delay < 4 wk	Corticol CM		mm				
Signal abriorinalityNotePocal unitaterial coard unitaterialPocal unitaterial trong to 36 to 36 week PMA: additional suctors and paracental gyrus present; secondary suci in frontal lobes, superior and middle temporal and prerolandic, postrolandic, insula, and occipital regions present; 36- to 38 week PMA: additional secondary gyri in transverse and inferior temporal PMA: tertiary inferior temporal and prerolandic, postrolandic, insula, and occipital regions present; 36- to 38 week PMA: additional secondary gyri in transverse and inferior temporal PMA: tertiary inferior temporal and inferior cocipital gyri and sulci (Inder et al. 2003*)Postrolandic belay <2 wkConstrained postrolandicConstrained present; accondary gyri in transverse and inferior temporal core present; accondary gyri at same section as measurement for BPW; (On-line Fig 10)Contract for PMA at MRI using equation: cHD = Measured HD + 0.16 × (40-PMA at MRI) cHD = Measured HD + 0.16 × (40-PMA at MRI)Contract GM total = (ran contect for PMA at MRI using equation: cHD = Aesured HD + 0.16 × (40-PMA at MRI)Contract GM total = (ran contect for PMA at MRI)	CILICAL GIVI			r	امتحفه أنميت مينامم مفيرا	امتعفه أنط متنامع مفترا	
Gyral maturation34- to 36-wk PMA: marginal sulcus and paracentral gyrus present; secondary sulci in frontal lobes, superior and middle temporal postrolandic, insula, and occipital regions present; 36- to 38-week PMA: additional secondary gyri in transverse and inferior temporal postrolandic, insula, and occipital regions present; 36- to 38-week PMA: additional secondary gyri in transverse and inferior temporal PMA: tertiary inferior temporal and occipital gyri and sulci (Inder et al, 2003 <sup>6</sup> )34- to 38-week PMA: additional secondary gyri in transverse and inferior temporal postrolandic, insula, and occipital gyri and sulci (Inder et al, 2003 <sup>6</sup> )Secondary gyri in transverse and inferior temporal moralSecondary gyri in transverse and inferior temporalSecondary gyri in transverse and inferior temporal moralSecondary gyri in transverse and inferior temporal moralSecondary gyri in transverse and inferior temporalSecondary gyri in transve		None		FOCAL DILALERAL		EXTENSIVE DITALETAL	
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	Gyral maturation	34- to 36-wk PMA: marginal sulcus a postrolandic, insula, and occipital regions: anterior and posterior or	Ind paracentral gyrus present; sec I regions present; 36- to 38-week I bital evri established; 40-week	ondary sulci in frontal lobes, suj PMA: additional secondary gyri	perior and middle tempo in transverse and inferior	al and prerolandic, temporal	
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$		PMA: tertiary inferior temporal ar	nd inférior occipital gyri and sulci	(Inder et al, 2003 <sup>8</sup> )			
Increased extracerebral space Measure interhemispheric distance between crowns of superior frontal gyri at same section as measurement for BPW; (On-line Fig 10) correct for PMA at MRI using equation: $CHD = Measured IHD + 0.16 \times (40-PMA at MRI)$ CIHD < 3.98 mm < 3.98 mm < cIHD > 4.69 mm CIHD > 4.69 mm CIHD > 4.69 mm CIHD > 4.69 mm Correct for BPW;		Delay <2 wk	$2 \leq delay < 4 wk$	Delay ≥4 wk			
Content of two values equation. $CHD = Measured HD + 0.16 \times (40-PMA at MR)$ CHD < 3.98 mm $CHD < 3.98 mm < cHD < 4.69 mm$ $cHD > 4.69 mm$ $cHD > 4.69 mm$ $0-8)$	Increased extracerebral space	Measure interhemispheric distance l	between crowns of superior from	tal gyri at same section as meas	urement for BPW;		
clHD < 3.98  mm $3.98  mm < clHD < 4.69  mm$ $clHD > 4.69  mm$ $0.48  mm$ $0.80  mm$ $0.80  mm$ $0.80  mm$		CONTECTION I AND ALLING USING Equation of the contection of the	Jaulon. PMAD at MRI)				
0-3		clHD < 3.98 mm	3.98  mm < clHD < 4.69  mm	cIHD > 4.69 mm			Cortical GM total = (range
							08)

On-line Table 2: Structural MRI scoring system for use from 29- to 46-weeks PMA in preterm infants: score sheet<sup>a</sup>

# Date: Patient ID:

	Score 0	Score 1	Score 2	Score 3	Score 4	Total Score
Deep GM						
Signal abnormality	None	Focal unilateral	Focal bilateral	Extensive unilateral	Extensive bilateral	
		(On-line Fig 11)	(On-line Fig 12)	(On-line Fig 13)	(On-line Fig 14)	
Volume reduction (On-line Fig 15)	Measure DGMA on a single axial se using equation:	sction where caudate heads, lentifo	orm nuclei, and thalami are ma	kimally visible; correct for I	PMA at MRI	
	cDGMA = Measured DGMA + 0.4	I5 $ imes$ (40-PMA at MRI)				
	cDGMA > 11.1 mm	$10.51 \mathrm{mm} < \mathrm{cDGMA} < 11.1 \mathrm{mm}$	cDGMA < 10.51 mm			Deep GM total = (range 0-6)
Cerebellum						
Signal abnormality	None	Punctate unilateral	Punctate bilateral	Extensive unilateral	Extensive bilateral	
		(On-line Fig 16)	(On-line Fig 17)	(On-line Fig 18)		
Volume reduction (On-line Fig 9)	Measure transcerebellar diameter cTCD = Measured TCD + 1.78 $\times$ (	at level of atria, maximal horizonta 40-PMA at MRI)	Il distance; correct for PMA at	MRI using equation:		
	cTCD > 50.02 mm	48.04  mm < cTCD < 50.02	cTCD < 48.04 mm			Cerebellum total = (range
		mm				00
						Global total = (range $0-35$ )
<b>Jote:</b> —BPW indicates biparietal width;	c-, corrected; IHD, interhemispheric distar	nce; RV, right ventricle; LV, left ventricle:	; TCD, transcerebellar diameter; DG	MA, deep gray matter area; PL	IC, posterior limb of the	internal capsule.

# <sup>a</sup> Global total range 0–35, global score category (0–3 normal; 4–7 mild; 8–11 moderate; 12+ severe).

On-line Table 2: Continued

### On-line Table 3: Relationship between PMA at MRI and each regional measurement<sup>a</sup>

	Preterm Sam (n = 71 Early MRI, I	ple (n = 135) n = 64 Term MRI	1	Term Reference	Sample ( <i>n</i> = 38)	
	<b>Regression Coefficient</b>	95% CI	Р	<b>Regression Coefficient</b>	95% CI	Р
Corpus callosum genu	0.03	0.01-0.05	.01 <sup>b</sup>	0.28	0.02-0.53	.03 <sup>b</sup>
Corpus callosum body	0.01	-0.01-0.02	.33	-0.03	-0.19-0.12	.64
Corpus callosum splenium	0.03	0.01-0.04	<.01 <sup>b</sup>	0.04	-0.15-0.23	.67
Ventricular diameter right	0.15	0.11-0.18	<.01 <sup>b</sup>	0.35	-0.06-0.76	.09
Ventricular diameter left	0.13	0.1-0.16	<.01 <sup>b</sup>	0.10	-0.22-0.43	.51
Biparietal width	2.33	2.19-2.48	<.01 <sup>b</sup>	0.00	-1.32-1.33	.99
Interhemispheric distance	0.16	0.12-0.2	<.01 <sup>b</sup>	0.03	-0.21-0.27	.78
Deep gray matter area	0.45	0.42-0.47	<.01 <sup>b</sup>	0.11	-0.09-0.3	.27
Transcerebellar diameter	1.78	1.72–1.84	<.01 <sup>b</sup>	0.99	0.33–1.66	.01 <sup>b</sup>

<sup>a</sup> Early MRI, 29 to 35 weeks PMA; term MRI, 40 to 42 weeks PMA. Preterm sample cases with focal brain lesions were removed to ensure that any linear relationship found was the result of age and not confounded by brain injury. Regression analyses were conducted separately for the preterm and term samples.

<sup>b</sup> Significant.

## On-line Table 4: Corrected means and SDs of the regional measurements for early and term MRI for the preterm group and the term reference sample<sup>a</sup>

	Early MRI ( <i>n</i> = 83)	Term MRI ( <i>n</i> = 77)	Term Reference Sample ( <i>n</i> = 38)
Corpus callosum genu	1.96 (0.43)	1.91 (0.67)	2.63 (0.75)
Corpus callosum body	1.33 (0.28) <sup>b</sup>	1.40 (0.43) <sup>b</sup>	1.60 (0.45) <sup>b</sup>
Corpus callosum splenium	2.71 (0.51)	2.61 (0.62)	2.98 (0.57) <sup>b</sup>
Ventricular diameter right	7.43 (3.29)	7.49 (3.58)	6.48 (0.97) <sup>b</sup>
Ventricular diameter left	7.51 (3.20)	7.70 (4)	6.58 (1.3) <sup>b</sup>
Biparietal width	77.40 (4.47)	77.40 (5.44)	86.38 (3.93) <sup>b</sup>
Interhemispheric distance	3.27 (0.79)	3.50 (1.33)	2.56 (0.71) <sup>b</sup>
Deep gray matter area	11.48 (0.82)	11.44 (1.01)	12.28 (0.59) <sup>b</sup>
Transcerebellar diameter	51.55 (2.53)	51.34 (2.73)	53.98 (1.98)

<sup>a</sup> For each measure that demonstrated a linear relationship with PMA at MRI in On-line Table 3, the regression coefficient (slope) was used to generate an equation for correction, written as: Corrected Value = Measured Value + Regression Coefficient × (40-PMA at MRI). A single equation was used to correct early and term MRI regional measures for the preterm group. The term reference sample data were corrected separately.

<sup>b</sup> Uncorrected values—that is, for regional measures in which no linear relationship was found and no correction was performed.

### On-line Table 5: Inter- and intrarater reproducibility of early and term MRI scores<sup>a</sup>

	Interrater (n	= 20)	Intrarater (n	= 20)
	Reliability ICC (95% CI)	% Agreement	Reliability ICC (95% CI)	% Agreement
Early MRI scores				
WM	0.79 (0.47–0.92)	70	0.97 (0.93–0.99)	95
CGM	0.08 (0.00–0.63)	95	0.92 (0.80–0.97)	100
DGM	0.86 (0.64–0.94)	85	0.92 (0.81–0.97)	90
Cerebellum	0.76 (0.40–0.91)	95	0.82 (0.51–0.93)	95
Global	0.89 (0.72–0.96)	80	0.97 (0.91–0.99)	95
Term MRI scores				
WM	0.93 (0.82–0.97)	90	0.96 (0.89–0.98)	90
CGM	0.66 (0.15–0.87)	90	0.75 (0.32–0.91)	95
DGM	0.86 (0.66–0.95)	90	0.96 (0.89–0.98)	100
Cerebellum	0.91 (0.78–0.97)	100	0.91 (0.77–0.97)	100
Global	0.93 (0.82–0.97)	80	0.97 (0.92–0.99)	95

<sup>a</sup> "% Agreement" is defined as an exact agreement  $\pm 1$  point for subscale scores and exact agreement  $\pm 2$  points for global scores.

	Normal (	Score 0-3)	Mild (Sco	Global Brain	Abnormality Moderate (	Score 8–11)	Severe (Sc	ore >17)	P Va	a
				(				010, 514		
	Early MRI	Term MRI	Early MRI	Term MRI	Early MRI	Term MRI	Early MRI	Term MRI	Early	Term
Variables	(n = 28)	( <i>n</i> = 49)	(n = 41)	(n = 20)	(n = 10)	(n = 5)	(n = 4)	(n = 3)	MRI	MRI
Gestational age at birth (wk)	28 <sup>+6</sup> (1 <sup>+5</sup> )	28 <sup>+3</sup> (1 <sup>+6</sup> )	$27^{+6} (1^{+6})$	$28^{+2} (1^{+3})$	$27^{+3}(2^{+0})$	$25^{+3}$ (1 <sup>+0</sup> )	$27^{+0}(2^{+4})$	$27^{+3}(2^{+6})$	.04 <sup>b</sup>	.03 <sup>b</sup>
Birth weight (g)	1213 (266)	1145 (318)	1018 (305)	1001 (280)	913 (306)	820 (94)	974 (427)	878 (587)	<.01 <sup>b</sup>	.04 <sup>b</sup>
Male sex	17 (61%)	30 (61%)	24 (59%)	12 (60%)	5 (50%)	3 (60%)	3 (75%)	1 (33%)	.85	.64
Multiple births	8 (29%)	12 (25%)	12 (29%)	7 (35%)	4 (40%)	2 (40%)	0 (%0) 0	0 (0%)	.95	.58
Maternal PROM	10 (36%)	14 (29%)	7 (17%)	2 (10%)	1 (10%)	1 (20%)	1 (25%)	1 (33%)	.07	.23
Chorioamnionitis	8 (29%)	9 (18%)	5 (12%)	3 (15%)	0 (0%)	0 (0%)	1 (25%)	1 (33%)	.05	99.
Antenatal steroids	23 (82%)	36 (74%)	29 (71%)	17 (85%)	8 (80%)	1 (20%)	2 (50%)	3 (100%)	.30	88.
Higher social risk	11 (41%)	16 (33%)	19 (46%)	12 (60%)	7 (70%)	4 (80%)	2 (50%)	2 (67%)	.21	<.01 <sup>b</sup>
PDA	7 (25%)	21 (43%)	24 (59%)	8 (40%)	5 (50%)	5 (100%)	3 (75%)	2 (67%)	-01 <sup>b</sup>	91.
Maternal MgSO <sub>4</sub>	16 (64%)	26 (59%)	20 (63%)	12 (75%)	6 (86%)	2 (100%)	1 (50%)	1 (100%)	.67	II.
Cesarean delivery	20 (71%)	34 (69%)	30 (73%)	15 (75%)	7 (70%)	4 (80%)	3 (75%)	3 (100%)	.95	.32
ROP	7 (25%)	14 (29%)	20 (49%)	13 (65%)	8 (80%)	4 (80%)	3 (75%)	2 (67%)	<.01 <sup>b</sup>	<.01 <sup>b</sup>
NEC	1 (4%)	1 (2%)	0 (%0) 0	0 (%0) 0	0 (0%)	0 (%0) 0	2 (50%)	1 (33%)	.22	.50
Confirmed sepsis	2 (7%)	2 (4%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	0 (%0) 0	0 (0%)	.26	.41
TPN (days)	10 [6–13]	11 [8–14]	12 [8–15]	11 [7–14]	13 [8–14]	14 [14–19]	18 [6–28]	[UN] II	.12	71.
Postnatal corticosteroids	1 (4%)	7 (14%)	7 (17%)	3 (15%)	3 (30%)	2 (40%)	3 (75%)	2 (67%)	<.01	II.
Ventilation (days)	2 [0–3]	2 [0—8]	3 [2–18]	3 [0–7]	3 [2–34]	30 [11-42]	31 [8–35]	20 [ND]	.02 <sup>b</sup>	.04 <sup>b</sup>
CPAP (days)	12 [4–21]	18 [6–46]	17 [8–32]	33 [9–52]	15 [10–27]	50 [37–55]	7 [3–23]	32 [ND]	.14	.12
Oxygen therapy (hr)	5 [1-42]	46 [2–386]	51 [5–253]	6 [1–62]	1 [1–774]	512 [ND]	665 [114–1358]	1958 [ND]	-01 <sup>b</sup>	.57
BPD	NA	11 (22%)	NA	6 (30%)	NA	4 (80%)	NA	2 (67%)	٨A	.02 <sup>b</sup>
Home oxygen	NA	5 (100%)	NA	4 (20%)	NA	3 (60%)	NA	1 (33%)	NA	.02 <sup>b</sup>
Note:	eriosus; PROM, prema	ature rupture of memb	ranes; ROP retinopathy	of prematurity; TPN, t	otal parenteral nutriti	on; MgSO <sub>4,</sub> magnesium	ı sulfate; NA, not applicab	ole; ND, not determinat	ole due to small	sample size;
BPD, bronchopulmonary dysplasia (oxyg	en requirement at 36	weeks PMA); NEC, neo	crotizing enterocolitis; (	CPAP, continuous posi	tive airway pressure.		-			
<sup>a</sup> Continuous measures reported as mea	n (SD) or median [IQI	R]. Categoric measures	are reported as freque	ency (percentage). P va	alue < .05 indicates a	significant association	between the perinatal va	ariable and increasing :	severity of MRI	global brain

abnormality category score. <sup>b</sup> Significant.

On-line Table 6: Perinatal variables and grade of global brain abnormality in infants born <31-week gestational age<sup>a</sup>