

Table IV. Linear mixed models analyses at follow-up (24 weeks)

Linear mixed models analyses baseline – 24 week comparison	BoNT-A+CR Base	BoNT-A+CR 24 weeks	only-CR Base	only-CR 24 weeks	Estimated difference in effect ^b	95% CI	p-value	Number of observations ^c	
	Mean (SD)	Mean (SD)	Mean (SD)	mean (SD)				Baseline	24 weeks
<i>Pain</i>									
Current CP-related pain intensity assessed by child (5-point smiley faces VAS)	1.8 (1.1)	1.6 (0.8)	1.3 (0.6)	1.5 (1.0)	-0.44	[-0.95–0.07]	0.090	65	64
<i>Muscle strength</i>									
Functional muscle strength legs (maximum number of sit-to-stand in 30 s) ^a	12.9 (4.0)	14.6 (4.6)	13.1 (3.4)	14.1 (3.7)	-0.69	[-2.31–0.93]	0.397	65	65
<i>Passive range of motion (absolute degrees as measured)</i>									
Hip adduction ^a	15 (6)	14 (6)	14 (4)	14 (5)	0.1	[-3.2–3.5]	0.934	89	89
Hip abduction in flexion ^a	42 (9)	40 (9)	42 (10)	43 (10)	2.9	[-0.5–6.4]	0.097	89	88
Hip extension while prone ^a	19 (9)	17 (9)	13 (7)	13 (6)	2.3	[-4.7–9.3]	0.051	47	47
Knee extension ^a	-1 (12)	-2 (11)	-2 (8)	-2 (8)	1.3	[-2.8–5.5]	0.521	84	84
Knee popliteal angle	51 (15)	52 (15)	53 (21)	53 (20)	0.8	[-4.0–5.5]	0.748	113	113
Knee flexion while prone ^a	152 (20)	143 (20)	134 (19)	118 (18)	-6.4	[-25.3–12.4]	0.492	47	47
Ankle dorsal flexion knee 90° flexion ^a	11 (9)	14 (9)	16 (13)	15 (13)	-3.9	[-10.3–2.5]	0.232	76	76
Ankle dorsal flexion knee extended ^{a*}	5 (11)*	7 (9)	10 (11)*	9 (10)	-2.7	[-6.6–1.1]	0.164	113	113
<i>Angle of catch (AoC, number of degrees shortage of physiologically normal end of range)</i>									
Hip abduction in flexion (AoC mm adductors) (*, physiological end range: 70°)	35 (19)*	38 (20)	51 (14)*	52 (8)	1.3	[-8.8–11.5]	0.795	92	88
Knee popliteal angle (AoC mm hamstrings) (*, physiological end range: 0°)	38 (32)*	44 (32)	64 (22)*	58 (26)	12.0	[-5.4–29.4]	0.173	96	94
Knee flexion while prone (AoC m rectus femoris) (physiological end range: 160°)	15 (41)	21 (46)	13 (22)	18 (32)	0.9	[-15.6–17.3]	0.916	88	95
Ankle dorsal flexion knee 90 flexion (AoC m soleus) (physiological end range: 20°)	11 (18)	8 (14)	13 (19)	8 (16)	1.0	[-10.1–12.1]	0.857	35	38
Ankle dorsal flexion knee extended (AoC mm gastrocnemii) (physiological end range: 20°)	33 (19)	26 (19)	33 (14)	31 (13)	-4.9	[-11.4–1.6]	0.135	113	113
<i>Walking speed (m/s)</i>									
Walking speed barefoot ^a	0.85 (0.3)	0.93 (0.2)	0.83 (0.3)	0.90 (0.3)	-0.01	[-0.15–0.13]	0.887	64	65
Walking speed wearing (special) shoes and/or AFO(s) ^a	0.89 (0.3)	1.03 (0.3)	0.95 (0.3)	1.03 (0.3)	-0.05	[-0.20–0.10]	0.496	62	63
<i>Gait (absolute degrees as measured)</i>									
Ankle midstance – while walking barefoot ^a	-7 (12)	-5 (12)	-11 (11)	-10 (10)	-1.0	[-6.5–4.5]	0.726	76	75
Ankle midswing – while walking barefoot ^a	-19 (17)	-16 (18)	-23 (12)	-19 (10)	1.9	[-7.0–10.9]	0.667	76	70
Knee midstance – while walking barefoot	21 (20)	16 (18)	21 (17)	17 (14)	-0.4	[-6.3–5.5]	0.888	113	112
Knee maximum swing – while walking barefoot	16 (21)	10 (22)	15 (15)	14 (15)	-5.6	[-10.8–-0.4]	0.034**	113	112
Ankle midstance – while walking with footwear/AFO ^a	4 (5)	4 (8)	1 (7)	0 (6)	-0.7	[-5.9–4.6]	0.801	74	71
Ankle midswing – while walking with footwear/AFO ^a	-1 (7)	-1 (8)	-5 (11)	-6 (8)	-0.7	[-5.8–4.3]	0.770	72	68
Knee midstance – while walking with footwear/AFO	19 (17)	17 (18)	19 (12)	16 (13)	0.9	[-3.4–5.3]	0.669	111	108
Knee maximum swing – while walking with footwear/AFO	14 (18)	12 (19)	14 (11)	13 (13)	-1.1	[-5.2–3.0]	0.587	111	108
<i>Gait (absolute number of degrees deviation from physiologically normal gait pattern joint-angle-range)</i>									
Ankle midstance – barefoot (norm range: 2° plantar flexion – 10° dorsal flexion)	8 (9)	6 (9)	11 (9)	9 (9)	-0.4	[-5.0–4.2]	0.865	76	75
Ankle midswing – barefoot (norm range: 5° plantar flexion – 5° dorsal flexion)	15 (15)	13 (15)	19 (12)	15 (10)	2.5	[-4.7–9.7]	0.490	76	70
Knee midstance – barefoot (norm range: 15° flexion – 0° flexion)	11 (16)	8 (14)	11 (10)	8 (9)	-0.3	[-4.2–3.5]	0.864	113	112
Knee maximum swing – barefoot (norm range: 10° flexion – 5° hyperextension)	11 (17)	9 (16)	10 (9)	9 (11)	-1.4	[-5.7–2.8]	0.510	113	112
Ankle midstance – footwear/AFO (norm range: 2° plantar flexion – 10° dorsal flexion)	1 (2)	1 (6)	2 (5)	2 (3)	0.1	[-3.4–3.5]	0.960	74	71
Ankle midswing – footwear/AFO (norm range: 5° plantar flexion – 5° dorsal flexion)	1 (4)	2 (6)	4 (8)	4 (6)	1.2	[-2.1–4.6]	0.466	72	68
Knee midstance – footwear/AFO (norm range: 15° flexion – 0° flexion)	9 (13)	8 (14)	8 (7)	6 (8)	0.6	[-2.8–4.0]	0.719	111	108
Knee maximum swing – footwear/AFO (norm range: 10° flexion – 5° hyperextension)	9 (15)	8 (15)	7 (6)	7 (9)	-0.3	[-3.7–3.1]	0.865	111	108
<i>General functioning</i>									
Satisfaction primary caregivers about general functioning child (10-point VAS score) ^a	7.3 (1.6)	7.6 (1.2)	7.1 (1.1)	7.9 (1.0)	0.46	[-0.50–1.43]	0.341	65	64
Satisfaction child about own functioning (proxy assessed 10-point VAS score) ^a	7.3 (1.2)	7.5 (1.2)	7.7 (1.1)	8.0 (1.2)	0.11	[-0.73–0.96]	0.790	65	64

^aHigher score indicates better functioning. ^{*}Presence of a significant difference between mean group scores at baseline (corresponding p-values are provided in Table III). Please note that the mean model estimated baseline scores may differ to some extent between Table III and IV.

^bNegative estimated differences in effect are in favour of BoNT-A+CR treatment and positive estimated differences in effect are in favour of only-CR treatment (**p ≤ 0.05). Mixed models were adjusted for age, number of previous BoNT-A treatments, CP-severity GMFCS levels, strength of the preference, and relevant interactions. Bilaterally assessed outcome measures were additionally adjusted for left-right legs in the models. ^cA total of 65 children participated, including 14 with unilateral CP type, hence the maximum is 116 observations for bilaterally measured outcome measures. CI: confidence interval; AFO: ankle-foot orthoses.