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C:2 Botulinum toxin A (BTX-A) combined with hip bracing delays the need for surgery in children with bilateral cerebral palsy: a randomized clinical trial and survivorship analysis

ROSLYN BOYD MSc PT^{A, B}, H KERR GRAHAM MD^{A, B}, GARY NATTRASS MD^{A, B}, DINAH REDDIHOUGH MD^B, PAM THOMASON PT^{A, B}, FIONA DOBSON PT^{A, B}, JENNY PARROTT PT^{A, B}, KEVIN LOWE MD^C, ANN LANCASTER PT^C, ALFILD LARSEN, MD^D, JENINE OATES PT^D, JANE VALENTINE MD^E, SARAH LOVE PT^E, JOHN CARLIN PHD^B AND MEMBERS OF THE MULTICENTRE HIP STUDY TEAM

^AHugh Williamson Gait Laboratory; ^BMurdoch Children's Research Institute, Melbourne; ^CSydney Children's Hospital; ^DRoyal Hobart Hospital, Rehabilitation Tasmania; ^EPrincess Margaret Hospital, Perth, Australia

Objectives: To determine whether intra-muscular injections of BTX-A combined with a variable hip abduction orthosis, delay or reduce spastic hip displacement and progression to soft tissue surgery for children with spastic hip displacement.

Design: A 3-year, randomized multicentre trial with concealed allocation to either BTX-A and bracing or observation. **Method:** Ninety children with bilateral spastic cerebral palsy with hips at risk (migration percentage MP>15<40% at entry) were entered. After randomization children were allocated to receive either intramuscular BTX-A every six months of 16Ukg/bodyweight (Botox, Allergan) to both adductors and both hamstrings with the addition of 6 to 8 hours use per day of the variable hip abduction orthosis (SWASH, CAMP Ltd) or observation. BTX-A was given under mask anaesthesia. In the observation group no concomitant hip bracing was undertaken, though physiotherapy and specialized seating were monitored. Children were followed up six monthly for 3 years and when their MP>40% and/or the Acetabular index (AI) exceeded 27° they were presented by the research physiotherapist for independent analysis by a surgeon who was blinded to group allocation to determine progression to surgery (censored). Data from all sites for admission to the study and progression to surgery was reviewed in the lead center. Data for progression to surgery was analysed independently using Kaplan Meier survivorship analysis.

Results: Using the log rank test for comparing progression to surgery between the groups there was a statistically signifi-

cant treatment effect ($p=0.02$) for the BTX-A and brace treated group. At 3-year follow up 73% of the BTX-A treated group had not progressed to surgery (95% CI 0.55, 0.84) while in the comparison group only 53% had not progressed to surgery (95% CI 0.37, 0.67).

Conclusion(s): Injections of BTX-A combined with SWASH bracing reduces hip displacement and delays or prevents the need for orthopaedic surgery.

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C:3 A single blind randomized trial of Botulinum toxin A (BTX-A) and upper limb training in congenital hemiplegia – activity, participation, and health-related quality of life

ROSLYN BOYD MSc PT^{A, C}, TIM BACH PHD^D, MEG MORRIS PHD^E, H KERR GRAHAM MD^{A, C}, CHRISTINE IMMS OT^{B, F}, LINDY JOHNSON OT^B, ARI SYNGENIOTIS MIT^G, DAVID ABBOTT PHD^G, GRAEME D JACKSON MD^G
^AHugh Williamson Gait Laboratory; ^BOccupational Therapy Dept., Royal Children's Hospital, Melbourne; ^CMurdoch Children's Research Institute; ^DSchool of Human Biosciences; ^EPhysiotherapy & Occupational Therapy at LaTrobe University, Melbourne; ^FBrain Research Institute, Melbourne, Australia

Objectives: To determine whether training with or without intramuscular BTX-A enhances function, participation, and health-related quality of life.

Design: A single-blind matched randomized trial of upper limb training with or without BTX-A.

Setting: A tertiary referral center

Participants: Thirty children with congenital hemiplegia matched for age (5–15 years), sex, and side of hemiplegia.

Method: Baseline assessments were made in the following domains of the International classifications of Functioning, Disability and Health (ICF): Impairment – Resonant Frequency (RF); Activity – Melbourne Upper limb assessment; Participation – Paediatric Motor Activity log (PMAL); Canadian Occupational Performance Measure (COPM) and societal change – Goal Attainment scale (GAS); Child Health

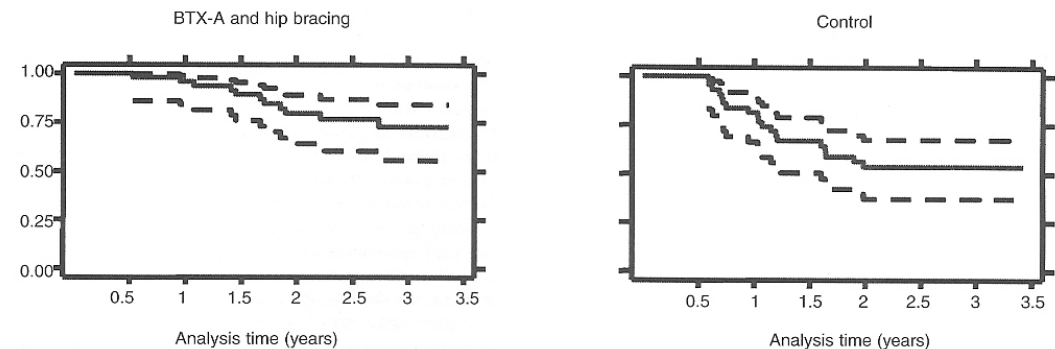


Figure C:2