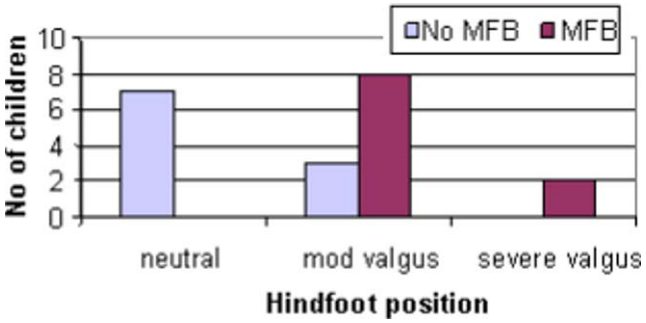
	Feet without MFB		Feet with MFB	
	Mean	SD	Mean	SD
Knee flex at IC (º)	30.32	7.77	31.47	10.05
Knee flex CL toe-off (º)	31.01	9.38	32.29	11.84
Max knee ext (º)*	11.89	10.49	16.58	12.3
Max ankle moment (Nm/kg)*	1.151	0.213	0.979	0.151
Max ankle power (W/kg)*	2.15	0.78	1.81	0.55

*Significant, $p < 0.05$.



O019

Gait and function in Dravet syndrome

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Summary: This is the first study to document the development of crouch gait and compromised mobility in subjects with Dravet Syndrome (Severe Myoclonic Epilepsy of Infancy).

Conclusions: Subjects with Dravet Syndrome, with age and growth, develop crouch gait with skeletal malalignment (increased femoral neck anteversion, external tibial torsion, pes valgus) which affect mobility in the community setting.

Introduction: Dravet Syndrome develops in the first year of life with seizures that are severe and refractory. There is a sodium channel subunit gene mutation (SCN1A) in 70% of cases [1]. Early development is normal but development slows after one year of age. Intellectual outcome is poor. Gait and mobility deteriorate in adolescence. This study aimed to characterise gait and function with increasing age in Dravet syndrome.

Patients/Materials and Methods: This was a cross-sectional cohort study. Patients with Dravet Syndrome in a tertiary paediatric hospital, attended for rating of gait classification and mobility status (Functional Mobility Scale), two dimensional (2D) gait analysis, physical examination, and radiology (AP pelvis and standing AP and lateral of the feet). Subjects were divided into three age groups for statistical analysis: 0–5 years, 6–12 years and 13 years and over. To compare mean outcomes for the different age groups, linear regression models or odds ratios calculated from ordered logistic regression, both with robust standard errors were used.

Results: Twenty-six subjects, mean age of 11 years 6 months (2 years 6 months – 34 years 5 months) participated. Children aged 0–5 years had a normal gait. This differed significantly to 5/10 subjects (6–12 years) ($p = 0.002$), and 8/9 adolescent subjects ($p = 0.000$), who all walked in crouch gait. Physical examination showed that with increasing age passive knee ($p = 0.008$) and hip extension decreased ($p = 0.003$); external tibial torsion ($p = 0.007$) and pes planovalgus feet ($p = 0.05$) increased, and hip internal rotation was increased consistently across all age groups ($p = 0.27$). Spasticity and ligamentous laxity were not features. The Functional Mobility Scale showed that the cohort walked independently over 5 and 50 metres, but over community distances (500 m) adolescent subjects often became dependent by leaning on another person or using a wheelchair ($p = 0.022$).

Discussion: This study has shown that with increasing age, subjects with Dravet Syndrome develop crouch. The rotational profiles of the hip, tibia and foot reveal increasing lever arm dysfunction that contributes to the development of crouch gait. Mobility is compromised at the community level upon subjects reaching adolescence. How a sodium channel mutation results in this gradual musculoskeletal deterioration requires elucidation.

References

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Oral Session 4: Muscle – Muscle & EMG

O020

Gait and functional analysis versus quality of life analysis in cerebral palsy children

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Summary: The purpose of the study was to explore the feasibility of a multidimensional outcome assessment including quality of life (QL) analysis. The results showed good concordance between the technical and clinical functional outcome measurements, and their lack of correlation with measurements of QL.

Conclusions: The outcome evaluation instrument set tested may help to adopt common tools, to compare health status between countries, specifically in different linguistic environments. European multicenter studies to analyse QL in CP children have to be initiated. A questionnaire covering activity and participation domains would be useful [1].

Introduction: Outcome assessment including validated functional instruments and gait analysis is now international standard according to the requirements of the International Classification of Functioning, Disability and Health (ICF). Spurred by the need to examine the efficacy and relevance of paediatric orthopaedic practice in our country, a homogeneous, multicenter outcome assessment was undertaken with government funding.

Patients/Materials and Methods: A 3-year prospective, governmental funded, multicenter study was conducted, recruiting patients during a 9 months period classified using the Gross