

## **GAIT PATTERNS IN DRAVET SYNDROME: PRELIMINARY DATA OF A MULTICENTRIC LONGITUDINAL PROSPECTIVE STUDY**

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**INTRODUCTION:** Dravet syndrome is a severe epileptic encephalopathy with intellectual retardation and progressive gait impairment. Little attention has been devoted to this symptom, described as "crouch gait".

**PURPOSE:** to report preliminary data of a multicentric, longitudinal prospective study aiming at: identifying gait patterns; b) determine natural history over a 5-years period; c) correlate data with genetic, pharmacological and seizure data from the Dravet Italian National Registry for the Italian subsample.

**METHODS:** Participants with a clinical and genetic diagnosis were recruited. Gait analysis for the Italian sample was conducted at the Movement-Analysis Lab, University of Padova. Clinical evaluation and WeeFIM were obtained. Instrumental analysis was conducted with a stereophotogrammetry optoelectronic system with 10 infrared video recorders (Smart-D 500, BTS S.p.A, Garbagnate Milanese, Italia) with Davis protocol. Observational Gait Scale (OGS), joint angle correlation and Statistical Parametric Mapping (SPM) were used for analysis.

**RESULTS:** Thirty-eight subjects were enrolled; 28 (17 F, mean age 15.4 years) could be included due to collaboration. Adults (>14years) and children were analysed separately. OGS identified 3 groups based on knee flexion, confirmed by statistical correlation. SPM identified an adult pattern with moderate knee flexion, trunk anteversion and reduced pendularism; and two patterns in the pediatric population, with a simil-adult and poliflexed –non-crouch- one.

**CONCLUSION:** We provide evidence of different gait patterns in Dravet syndrome: a) a pseudo-crouch gait with flexed knee associated with possible alterations of ankle kinematics in younger children; b) a gait pattern characterized by almost normal knee kinematics but altered ankle and trunk in kinematics Psw in adolescents and young adults; and c) a subgroup of children with adult-like gait. These results are partially in contrast with the few previously published data. The age-related distribution suggests a different natural history. On these basis ad hoc rehabilitative protocols are being tested.