

Increase or alleviate weight in individuals with SCA? Two lines of evidence for the physiotherapeutic approach


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Spinocerebellar ataxia (SCA) comprises a family of autosomal dominant inherited disorders that result from progressive degeneration of the cerebellum and its associated systems. Besides cerebellar deterioration, SCA is accompanied by degeneration of other nervous system sites. It leads to non-cerebellar signs such as pyramidal and extrapyramidal losses, uncommon in ataxia of other etiologies that can worsen the impairments of people with SCA. The most common motor deficiencies in SCA are related to gait and body balance, with increased risk of falls and predisposition to physical inactivity, followed by cardiorespiratory capacity limitation. Despite the huge recent advances in neurogenetic research, an effective pharmacological approach to face this condition is still unknown. In this context, rehabilitation strategies could represent an alternative to improve the physical condition and to reduce the impairments of these individuals. In this lecture I will present two lines of intervention. First, the results of a study in which

gait, cardiopulmonary capacity, and balance were challenged during gait using a partial body weight support (BWS) and a treadmill will be discussed. The effects of this training over functionality and quality of life will be also presented. In few words, gait training using partial BWS significantly increased gait performance, treadmill inclination, duration of exercise, and cardiopulmonary capacity in individuals with SCA. Balance improvements were also found. In the second part, I will show an opposite line of intervention: the effects of progressive addition of external loads over the performance in tests of postural stability and gait, and the comparison of load addition over different body parts (waist girdle, pelvic girdle and lower limbs). The evaluation instruments used in this part were a posturography examination, kinematic gait analysis, Scale for the Assessment and Rating of Ataxia, Modified Dynamic Gait Index, Berg balance scale, Inventory of Non-Ataxia Signs and SCA Functional Index.

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