Cerebral palsy

Cerebral palsy (CP) is a non-progressive motor-impairment disorder related to brain injury early in development.

Children with cerebral palsy (CP) can present with severe secondary dystonia with or without associated spasticity of their extremities.

Cerebral palsy is the most common cause of physical disability in children worldwide. However, little is reported on this condition in the African context. Doctors from 22 countries in Africa, and representatives from a further 5 countries outside Africa, met to discuss the challenges in the evaluation and management of children with cerebral palsy in Africa and to propose service needs and further research. Basic care is limited by the poor availability of diagnostic facilities or medical personnel with experience and expertise in managing cerebral palsy, exacerbated by lack of available interventions such as medications, surgical procedures, or even regular therapy input. Relevant guidelines are lacking. In order to guide services for children with existing disabilities, to effectively target the main etiologies and to develop preventive strategies for the continent, research priorities must include multicenter collaborative studies looking at the prevalence, risk factors, and treatment of cerebral palsy [1)].

Types

Dyskinetic cerebral palsy.

Spastic diplegia

Evaluation

Three-dimensional gait analysis (3DGA) is commonly used to assess the effect of orthopedic single-event multilevel surgery (SEMLS) in children with spastic cerebral palsy (CP).

Treatment

Cerebral palsy treatment.

Complications

see Cerebral palsy complications.

Systematic reviews

A comprehensive literature search within six databases revealed 648 records, from which 89 articles

were selected for the full-text review and 24 articles (50 studies) included for systematic review. The Oxford Centre for Evidence-Based Medicine Scale and the Methodological Index for Non-Randomized Studies (MINORS) were used to appraise and determine the quality of the studies.

Except for one level II study, all studies were graded as level III according to the Oxford Centre for Evidence-Based Medicine Scale. The MINORS score for comparative studies (n = 6) was on average 15.7/24, while non-comparative studies (n = 18) scored on average 9.8/16. Nineteen kinematic and temporal-distance gait parameters were selected, and a majority of studies reported improvements after SEMLS interventions. The largest improvements were seen in knee range of motion, knee flexion at initial contact and minimal knee flexion in stance phase, ankle dorsiflexion at initial contact, maximum dorsiflexion in stance and in swing phase, hip rotation and foot progression angles. However, changes in 3DGA parameters varied based on the focus of the SEMLS intervention.

This article provides a novel overview of a variety of single-event multilevel surgery (SEMLS) interventions within different SEMLS focus areas and the post-operative changes in 3DGA parameters. This overview will assist clinicians and researchers as a potential theoretical framework to further improve SEMLS techniques within different SEMLS focus groups. In addition, it can also be used as a tool to enhance communication with parents, although the results of the studies can't be generalised and a holistic approach is needed when considering SEMLS in a child with spastic CP [2)].

Case series

Cerebral palsy case series.

1)
Donald KA, Kakooza AM, Wammanda RD, Mallewa M, Samia P, Babakir H, Bearden D, Majnemer A, Fehlings D, Shevell M, Chugani H, Wilmshurst JM. Pediatric Cerebral Palsy in Africa: Where Are We? J Child Neurol. 2014 Oct 7. pii: 0883073814549245. [Epub ahead of print] PubMed PMID: 25296926.
2)
Lamberts RP, Burger M, du Toit J, Langerak NG. A Systematic Review of the Effects of Single-Event Multilevel Surgery on Gait Parameters in Children with Spastic Cerebral Palsy. PLoS One. 2016 Oct 18;11(10):e0164686. doi: 10.1371/journal.pone.0164686. PubMed PMID: 27755599.