

The Influence of Early Therapeutic Intervention on Outcome of Cerebral Palsy

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Abstract

The aim of the study was to determine the effectiveness of early therapeutic intervention in children with cerebral palsy, as long-term study on effectiveness of therapeutic intervention, has not yet performed. While estimating functional independence of patients at the age of five years and severity of cerebral palsy in cases of early (before 1 year of age - Group I) and late (after 1 year of age - Group II) intervention revealed, that: the early and adequate management of cerebral palsy does not change the severity of cerebral palsy, but statistically significantly improves the functional independence of a patient and thus favours the necessity of early intervention and adequacy of management with multidisciplinary team approach. The mean value of Functional Independence Measurement (FIM) in Group I was 4,2, while in Group II - 3,6. Patients with cerebral palsy have disability of any type, which creates social and economic problems. By reducing the level of disability, it is possible to improve quality of life and social activity of patients, to recreate the psycho-emotional climate of a child with disability itself and his/her family, and to reduce economic wastes.

Keywords: *cerebral Palsy, rehabilitation, physical therapy, neurodevelopment, static encephalopathy*

Introduction

Cerebral palsy is the most common Physical disability in childhood with prevalence rates ranging from 2 to 2,6 per 1000 live births in industrialized countries [7].

The cerebral palsies are a group of disorders of movement and posture due to a non progressive lesion of the developing brain [3].

During the past decades several reviews of therapeutic interventions for children with or at risk for cerebral palsy have been published. The majority of results from most of the studies could not be interpreted from a scientific point of view and did not provide sufficient evidence for the effectiveness of the interventions [1,2,4,5,6].

The purpose of the study was to evaluate the efficacy of early therapeutic intervention program for children with cerebral palsy

Material and Methods

137 patients with cerebral palsy participated in the study. 37 of them (I group) received therapeutic intervention program from the age of 4 months, while 130 (II group) - after the age of 12 months.

All patients were assessed on the basis of motor and mental development, functional independence, and EEG.

All of them were managed by multidisciplinary team including child neurologist, psychologist, physical therapist, and speech therapist.

Results

In our study spastic diplegia was the most common clinical type and occurred in 66,5% of the cerebral palsy cases, hemiplegia was present in 4,8% of the patients, quadriplegia - 13,8%, and dyskinetic type - 10,2%. Ataxic and atonic types comprised only 4,8% of the

cases. The highest percentage of severe forms was in group of spastic quadriplegia - 69,6%.

In I group severe forms of cerebral palsy was 32,4%, in II group - 23,8% (Fig.1). There were no statistically significant differences between groups.

The results of functional independence measurement (FIM) in I group was much higher, then in II group, $p < 0,01$ (Tab.1), which indicates the importance of early therapeutic intervention.

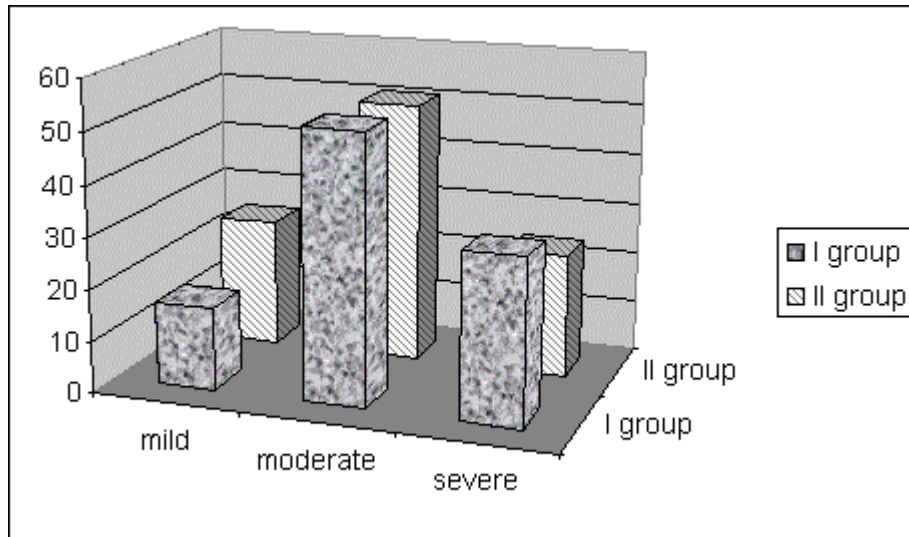


Fig.1 Severity of Cerebral Palsy.

I GROUP	N	Valid	37
		Missing	0
	Mean	4,2378	
	Std. Error of Mean	0,2428	
	Std. Deviation	1,4769	
	Minimum	1,20	
	Maximum	6,50	
II GROUP	N	Valid	130
		Missing	0
	Mean	3,6338	
	Std. Error of Mean	0,1412	
	Std. Deviation	1,6099	
	Minimum	1,00	
	Maximum	6,40	

Tab.1 FIM in group.

Conclusions

Despite the fact, that in case of appropriate early therapeutic intervention severe forms of cerebral palsy did not decrease in number, the level of functional

independence of children from the I group was statistically highly reliable.

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Влияние ранней терапии на исход церебрального паралича

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РЕЗЮМЕ

Целью данного исследования являлось определение эффективности раннего терапевтического вмешательства у детей с церебральным параличом, так как до настоящего времени лонгитудинальные исследования об эффективности терапевтического вмешательства не проводились. При установлении уровня функциональной независимости у детей в возрасте 5 лет с различной тяжестью церебрального паралича в случаях ранней (младше 1 года - I группа) и поздней интервенции (старше 1 года - II группа) выяснилось, что ранний и адекватный менеджмент не влияет на тяжесть церебрального паралича, но статистически достоверно улучшает функциональную независимость пациента, и таким образом, подчеркивает необходимость ранней интервенции и адекватность менеджмента мультидисциплинарной группой профессионалов. Показатель функциональной независимости составлял в I группе в среднем 4,2, в то время, как во II группе - 3,6. Больные с церебральным параличом имеют множественные ограничения различного типа, что создает им немало социальных и экономических проблем. Со снижением уровня ограничения возможно улучшение качества жизни и социальной активности больных, оздоровление психо-эмоционального климата как непосредственно ребенка с ограничениями, так его семьи и уменьшение экономических расходов.

Ключевые слова: *церебральный паралич, реабилитация, физическая терапия, нейроразвитие, статическая энцефалопатия*