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Prechtl's diagnostics as a valuable research tool applied before implementation of NDT Bobath therapy

**Monika Stecko^[1], Agata Wawryków^[1], Katarzyna Topczewska^[1], Anna Stangret^[1],
Agnieszka Kordek^[2], Katarzyna Weber Nowakowska^[3], Katarzyna Korabiusz^[1]**

- 1. Pomeranian University of Medical Science, Doctoral Study of the Faculty of Health Sciences, Żołnierska 54, 71-210 Szczecin**
- 2. Pomeranian University of Medical Science Neonatal Pathology Clinic, Aleja Powstańców Wielkopolskich 72, 70-111 Szczecin**
- 3. Pomeranian University of Medical Science, Department of Musculoskeletal System Rehabilitation. Unii Lubelskiej 1, 71-252 Szczecin**
mjstecko@gmail.com

ABSTRACT

Early Prechtl's diagnostics applied before implementation of NDT Bobath therapy was described in this article. Prechtl's diagnostics allows therapist to determine whether child development will be disturbed at psychomotor level and whether rehabilitation with the use of NDT Bobath method should be implemented. Quick implementation of the therapy allows to suppress improper motor patterns and develop proper distribution of muscle tone and change

the repertoire of the movements in children.

Key words: NDT-Bobath, Prechtl's diagnostics, neurodevelopmental therapy.

INTRODUCTION

Noticing abnormalities in child development and implementation of therapy are very difficult especially in the first month of child's life^[6]. Accurate diagnostics should precede decision about implementation of the therapy in children. Prechtl's diagnostics deserves special attention. It allows to quickly take actions aiming at initiation of developmental potential of a infant.

PRECHTL 'S DIAGNOSTICS

Prechtl's diagnostics is used to assess nervous system in infant. Prechtl's method allows to diagnose immaturity of nervous system thanks to global movements (GMs), which are present since fetal period (8th-9th week of pregnancy) until the end of the second month of life, when they are transformed into „fidgety” movements^[7,8,9,9/10]. Global movements are complex and occur in the whole body. They have changeable sequence of the movements of the shoulders, legs, trunk and neck. Their characteristic feature is growing and reducing intensity, and their complement is rotations and minor changes of direction of movement^[1,8].

Fidgety movements occurring after 2nd month of life between 6th and 9th week of child's life, are minor movements with average frequency and low speed ^[8,9].

Incorrect global motor patterns include: chaotic, of poor repertoire of movement and cramped and synchronized ^[8].

Appropriate assessment of global motor patterns in children shows the direction of their development ^[8]. On the basis of occurrence of two global motor patterns, the occurrence of cerebral palsy can be determined in a reliable way ^[8,9]. They include the following movements: cramped and synchronized and absence of the movements of fidgety character, which should occur in children who are about 3 months old. Prechtl's assessment of global motor patterns is a non-invasive method because diagnosis is made while recording a infant. Child should wear nappy or body without sleeves and lies on the back during the assessment. Time of recording depends on the week, in which the child was born. The younger child, the longer recording time. However, the presence of a recording person is not required.

The accuracy of diagnosis with the use of Prechtl's scale is about 94% ^[8]. Therefore, the assessment of a child is a valuable complement of neurological examination, which allows to determine the disorders of central nervous system. Thorough diagnosis suggest what further child development will be ^[3,5,11].

NDT BOBATH METHOD

NDT Bobath concept was developed in the 1940s by a physiotherapist, Berta Otilia Bobath and her husband, a paediatrician and surgeon, Karl Bobath ^[2,3]. It is one of neurodevelopmental methods applied in paediatric therapy. The concept was developed, above all, on the basis of Bobaths' own research and observations of adult patients having various dysfunctions of central nervous system and thorough study of motor behaviours of children suffering from cerebral palsy ^[3,4]. The goal of the Bobaths was to find effective way

improving health of children having movement disorders of central origin. In the next few years, the idea of the Bobaths has been developed thanks to progress of knowledge about clinical and developmental bases of cerebral palsy ^[3].

Nowadays, NDT Bobath therapy is recognized and one of the most popular therapeutic methods ^[4,5].

IMPLEMENTATION OF NDT BOBATH METHODS IN CHILDREN

Implementation of NDT Bobath therapy in premature babies or children from a risk group (children that need special care due to their state after birth and disturbed course of neonatal period) is very important element ^[12]. Early intervention allows to suppress improper motor patterns and initiate (release) activity of appropriate reactions through, among others, change of the location of some segments of the body (the so-called key points) ^[13,14]. In this way, we may affect the state and distribution of muscle tone in various positions ^[13,14]. Therapeutic plan should be adjusted individually to every child having psychomotor problems. Motor care is also an important element, which is a complementation of the therapy, that is, constant („round-the-clock”) provision of appropriate posture and motor experiences to the child ^[11]. It can be easily applied during everyday care, among others, while: putting the child to bed, bathing, changing nappies, dressing and feeding, play with infants ^[1,2].

Many factors affect effectiveness of improving child's health with the use of NDT Bobath method, among others: clinical state of a child, extent of brain damage, time of commencement of rehabilitation, regularity of rehabilitation, education of a therapist and cooperation of a patient and parents in the process of rehabilitation ^[12,13]. There is some sort of hierarchy of goals in the therapy with the use of NDT Bobath method. The lower order goals (temporary) are subordinated to higher order goals, although they are sometimes distant in time ^[7,15]. Implementation of NDT Bobath therapy in children at the early stage helps to prevent the development of pathological motor activity and make it more probable for a child to become self-sufficient in all spheres of life ^[3,12,15].

SUMMARY

Prechtl's diagnostics allows to determine whether child development will be disturbed at

psychomotor level and whether rehabilitation with the use of NDT Bobath method should be implemented. Prechtl's diagnostics also suggests the implementation of early intervention, in which time is the most important factor. Quick implementation of therapy allows to suppress improper motor patterns and develop proper distribution of muscle tone and change the repertoire of the movements in children.

Appropriate and complex improvement at the early stage in children from a risk group increases the chance to develop correct mobility of a patient in the future^[6].

Prechtl's diagnostics should be applied at the wards of Neonatal Pathology to exclude or confirm the necessity of implementation of NDT Bobath therapy. NDT Bobath therapy may be applied regardless of child's age as a therapeutic method^[6].

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