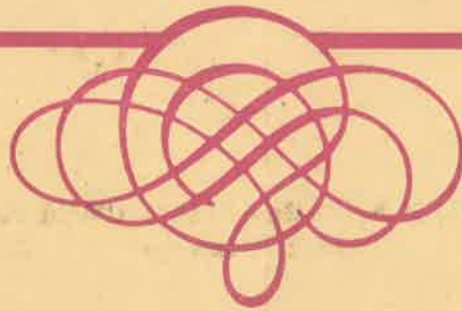




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THT INDIAN JOURNAL OF OCCUPATIONAL THERAPY

Vol XV

August 1987

Number 2

From Managing Editor Desk

Dear Friends,

In this issue we are presenting you with two articles which depict the innovative talents of our young Occupational Therapists.

Dr. Oberoi's article gives us an idea about newer methods of evaluation and importance of such methods in our therapy.

VOJTA's approach is not a very new thing to us. But Dr. Padyes approach of amalgamating it in the treatment of cerebral palsy is quite a practical method which some of us can definitely make use of.

In addition there is some important news about the forthcoming AIOTA conference at Jaipur.

Wishing you all Happy Diwali

DR. (MRS.) RAJNI JAGASIA
Managing Editor

CONFERENCE NEWS

Dear Colleagues,

We are looking forward to meet you in Jaipur for XXVI Annual Conference of AIOTA in December, 1987. We hope you will enjoy your stay in Jaipur-the city of unique synthesis of the traditional and the modern.

The Scientific sessions will be of great values to all the therapists who are engaged in treatment of the sick.

Date - December 21 - 23 1987.

Place - R. R. Centre

S. M. S. Hospital Campus, JAIPUR

Theme Occupational Therapy - 1987

" A Systems Approach To Health Care "

Abstract - Scientific papers should reach by 15th Oct. 1987

For further information :

G. C. Jain

Organising Secretary, XXVI Annual Conference AIOTA

R. R. Centre, S. M. S. Hospital Campus Jaipur (Rajasthan)

LATE NEWS

Australian Association of Occupational Therapists has informed that the 10th W.F.O.T. Congress will be held in Melbourne, Australia from 2 - 6 April 1990.

Those who are interested in attending the Conference may contact A.I.O.T.A. Office.

Dr. Mrs I. R. Kenkre
Hon. Secretary, AIOTA

Condolense

It grieves us to inform you of the sad demise of Dr. Rajrishi (34 years) an Occupational Therapist working at the Rehabilitation and Artificial Limb Centre, K.G.S. Medical College, Lucknow, passed away after a brief illness on 31st May 1987. He is survived by his wife and daughter.

We convey our sincere condolense to his bereaved family. May his soul rest in peace.

ERGOGRAF - ASSESSMENT OF MUSCLE FATIGUE IN LIVER DISEASES

★ DR. MRS. OBEROI S. A.

★ ★ Prof. MRS. SHAHANI M. M.

Introduction :

We are aware that liver has a dominant role in the synthesis of proteins, carbohydrates and fats which are the fuel for muscle contraction. In liver disease there is early fatiguability due to :

1. Non-availability of stores of energy.
2. Accumulation of lactic, pyruvic, citric and alpha-ketoglutaric acids in the serum.

Hence in the Department of Occupational Therapy of Seth G. S. Medical College and K.E.M. Hospital, Bombay, we did the Ergographic assessment of muscle fatigue in liver diseases. This was done with the help of the Department of Surgery.

The aim of our study was as to whether early fatiguability does occur in liver disease and secondly to correlate easily available parameters of liver function tests with muscle fatigue.

Material and Methods :

Our population of interest consisted of 25 male normals 20-30 years and 14 patients of proved cirrhosis of liver. There were 12 males and 2 females age ranging from 20 to 65 years. We also studied the following independent variables in these patients i.e.

1. Total proteins
2. Albumin
3. S.G.P.T.
4. Sodium
5. Potassium
6. Haemoglobin.

We used the Ergograph which is a very sensitive polish machine characterized by a high measuring accuracy due to automatic graphic and quantitative registration of the work of the hand muscles. This machine has recording calibration for the number of contractions and also for variation of tension. The following dependent variables were measured.

★ Lecture O.T. School & Centre Seth G S. Medical College & K.E.M. Hospital, Parel, Bombay 12.

★ ★ Professor & head of the Department, O.T. School & Centre, Seth G.S. Medical College & K.E.M. Hospital, Parel, Bombay 12.

1. No. of contractions before setting of fatigue.

2. Total No. of contractions.

Having known the number of contractions the time taken for the same is calculated.

Results :

The correlation between dependant and independant and independant variables of fourteen patients as follows :

TABLE 1

Dependant variables	Time taken before fatigue	Total time taken
Mean	23.3	41.3
Standard Deviation	19.0952	41.8036

TABLE 2

Independant variables	Total Pro- teins	Albumin	SGPT	Na+	K+	Hb
Mean	5.9	2.8	36.5	139.9	4.2	8.9
Standard Deviation	58.7039	0.3674	27.90	6.9119	0.8285	3.2015
P	NS	<0.05	NS	NS	NS	NS

It was found that of all the tests albumin was found to be significantly responsible for early fatiguability.

We also studied 25 male normals and 4 cirrhotics within the age group of 20-30 years and studied the time taken before fatigue and total time taken

TABLE 3

In Normals	Before fatigue	Total time
Mean	49.5 secs.	54.5 secs.
S.D.	5.2 secs.	5.28 secs.
In Cirrhotics		
Mean	33.8 secs.	47.3 secs.
S.D.	27.24 secs.	28.35 secs.

Using the Students 't' test we found the following :

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Thus in patients with cirrhosis there was significant decrease in both the time taken before fatigue and the total time taken. The 'p' value was also found to be highly significant.

Discussion :

From the study we draw our conclusions that —

1. There is early muscle fatigue in patients with cirrhosis.
2. Albumin is a significant indication of muscle fatigue. This may be because protein synthesis especially albumin is decreased in cirrhosis of liver. This has an adverse effect on the oxidative activity of the liver which results in an inadequate supply of energy due to failure of ATP synthesis and as a consequence a failure of urea synthesis which can result in the accumulation of NH_3 , extremely toxic substance associated with neurological deterioration.

Having assessed the patients on the ergograph, we now aim to study :

1. The blood lactic acid studies - pre and post exercise and
2. Subject patient to scientifically based studies of O_2 consumption using standardized equipment like the Ergometer, Treadmill, Double Masters, to calculate his work capacity and thus advise him regarding work placement and activities within his aerobic limits.

Acknowledgement :

I am very thankful to Mrs. M.M. Shahani, Professor and Head of Occupational Therapy Department, Seth G.S Medical College and K.E.M. Hospital, Bombay; and Mr. G.H. Purohit, Assistant Professor of Occupational Therapy in the same institute, for their guidance and encouragement given throughout this study.

I am also grateful to Dr. G.B. Parulkar the Dean of Seth G.S. Medical College and K.E.M. Hospital, Bombay, for allowing me to carry out this study.

Lastly I thank Dr. R.A. Bhalerao and Dr. H.M. Nazareth, Department of Surgery. Seth G.S. Medical College and K.E.M. Hospital, Parel, Bombay 12.

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1. Constituents of human muscle in isometric fatigue. *J.Appl.Physiol.* 38:208-211, 1975.
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This paper was presented at the Silver Jubilee Conference of AIOTA held at Bombay On Sept. 20—22, 1987.

AMALGAMATION OF VOJTA'S APPROACH IN THE TREATMENT OF CEREBRAL PALSY

MRS. MEDINI PADHYE
Deputy Head Therapist &
Lecturer
The Spastics Society of India

The advances in health, care and science during the last few decades, allow more and more babies with brain damage to live. As we all know, when the brain is damaged, abnormal patterns of posture and movement develop which are incompatible with the performance of normal everyday activities. This leaves the child with this neurological insult helplessly dependent in functional independence and social competency amongst many other areas.

During these decades, several scientists and researchers have also brought to us studies to present various approaches in the treatment of children with brain damage which are based on a sound rationale of Neurophysiology and Motor development.

Cerebral Palsy and other related Neurodevelopmental delays resulting from early brain damage are prevalent in every part of the world and not uncommon in India. So the forthcoming decade of 1990's is the time of challenge for us to advance in our study and to eclectically choose procedures from these approaches to find a theoretical frame-work to benefit individual children, and their sensory motor problems

This article brings to you a report of a similar study, conducted at the Spastics Society of India on 6 children with Spastic Diplegia, for a six month period.

The 2 approaches used were :

- (1) Bobath (2) Vojta

As the so well known, Bobath approach of treatment to cerebral palsy is facilitation of better posture and movement thru 'basic motor patterns'. These are achieved by inhibiting abnormal patterns of posture and movement for facilitation of more normal functional skills. This is done by developing postural control in righting, equilibrium and protective reactions.

Now Dr. Vojta's approach, though divergent in principle, has a Neurophysiological and Kinesiological, uprighting and phasic movement patterns which are necessary for normal motor skills. These are achieved by providing proprioceptive stimulus to get good summation of contraction in a global response.

These 2 approaches like several others, are more similar than divergent because each has the goal of improved motor function thru proprioception either by movement or by position and because each is based on information about the same C.N.S. and motor development. *Therefore an attempt was made to amalgamate these 2 approaches. The responses elicited _____ were found to be much more effective than when used in isolation.

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The aim during this study was to make use of upper limbs and shoulder girdles to facilitate more normal patterns of postural control in the trunk and the lower limbs.

Principle :

To use inhibiting patterns of posture (1) in prone-lying (2) in straddle sitting to provide proprioceptive stimuli thru trigger zone for facilitation of global feedback. 6 subjects were selected on the basis that their upper limbs were better in function than the lower limbs though not completely normal. The age range of these children was from 3 years to 13 years. These children had the following basic problems, which are generally agreed to hinder normal motor function :

1. Inadequate shoulder girdle stability
2. Lack of proper head control resulting into hyper extension in the neck.
3. Compensatory (postural) kyphosis in dorsal region.
4. Inadequate hip flexion and pelvic mobility resulting in lumber lordosis.
5. Adduction - internal rotation pattern in the hips resulting in incorrect weight bearing pattern.

The positions and the techniques used :**Prone Position :**

1. Prone lying over a small roll, arms elevated and in external rotation with elbow extension. Both lower limbs in extension and abduction.

Technique :

Lateral border of the distal 1/3 of the radius is used as a trigger zone to provide proprioceptive stimulus by giving pressure laterally and proximally into the direction of elbows. Child has the goal of pushing against this pressure.

Response :

Stabilisation of scapulae against posterior chest wall with correction of hyper-extension in the neck, trunk alignment with correction in lumber curvature and external rotation dorsiflexion in both limbs (lower).

Straddle sitting :

2. Sitting over a roll in riding position. The size of the roll should allow good 90° flexion at the knees.

Technique :

Position of the lower limbs is maintained by giving pressure on the lateral border of calcaneus on both sides. Trigger zone used is the medical border where proprioceptive stimulus is combined with muscle stretch on Trapezius and Rhomboids. Pressure is given laterally and ventrally towards the elbows. Child has the goal of pushing against this pressure with extended arms.

Response :

Stabilisation of scapulae with correction of hyper extension in the neck, reduction in dorsal khyhosis with pelvic mobility, better hip flexion with external rotation and dorsiflexion in the feet.

Results :

Out of six children, four showed good improvement. The other two had associated behaviour problems and therefore it was difficult to get good cooperation. The four children who showed good improvement gave the following results :

1. Improvement in shoulder girdle stability.
2. Reduction in the amount of hyper extension at the neck.
3. Reduction in kyyhosis
4. Reduction in the adduction and internal rotation pattern in the hips and planter flexion in the ankles.
5. improvement in pelvic mobility and adequacy in hip flexion.
6. Improvement in standing pattern.

At the beginning of the programme in February, this child had hyper extension in the neck, dorsal kyphosis, lumber lordosis, adduction-int -rotation pattern in the lower limbs. This showed remarkable improvement in September. Improvement was also obvious during exercise as response shown in September was much better than the response in February.

The same child in position like others also showed improvement. In February in addition to above mentioned problems he showed severe lack of pelvic mobility leading to inadequate hip flexion and heel weight bearing in straddle sitting.

This showed improvement in September which resulted in better balance and control in sitting.

The difference in the response was quite obvious between February exercise & September exercise.

This is another child who showed good improvement. Initially, in addition to cervical hyper extension and dorsal kyphosis, she had severe assymetry in the trunk.

In February, she gave a fairly good response during exercises where you can see the cervical and dorsal region of the trunk showing correction towards symmetry.

This was obviously better during the month of September.

Meastremnts :

To measure the trunk posture following methods could be used :

1) Moulding an aluminium strip along the vertebral column beginning at the base of skull and ending at the coccyx.

2) The other method of assessment could be a comparison of slides. This method was adopted by us and a number of of slides were taken at the beginning of the study and at the end of it.

Conclusions :

Though the cervical hyper extension, dorsal kyphosis and lumber lordosis were not directly dealt with they were found to have improved with the improvement in shoulder girdle stability and pelvic mobility

Acknowledgements :

My sincere thanks to Mrs. Mithu Alur, Chairman, The Spastics Society of India for permitting me to present this paper. My thanks are also due to Miss Pamela Stretch, Miss Sujitha George and my other colleagues at the Spastics Society of India, for their kind help and cooperation



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The 3rd European Congress of Occupational Therapy

Place : Lisbon, Portugal.

Date : September, the 26,27 and 28 1988.

Theme : Now and the Future.

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