Treatment of serious neurological diseases of children showing two cases including video demonstration of cerebral palsy (CP)

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ACKNOWLEDGMENT

First, thanks are all to God for blessing this work.

I would like to address special thanks to my wife who gave me full support to my work along 21 years and still doing with patience and love. My thanks go to Mr. Brügemann who developed and introduced the BICOM 2000 for the humanity and to Mrs. Brügemann who kindly gave me this opportunity to present this study here. Also, I would like to thank Mr. Martin Keymer who gave me full scientific support along three years. I feel really grateful to all those four persons.

Also I would like to thank my staff Mrs. Kamel Magy, P.T., Msc., Mr. Hana Adel, P.T., and Mr. Saleeb Samuel who are working with me in St. Mary clinic in Egypt for physical medicine and rehabilitation. They generously provided a substantial effort to the accomplishment of this study.

Last but not least I should address my gratitude to Mrs. Shokry Nahed, P.T., and Mr. Labieb Remon, P.T., who are demonstrators in the pediatric department, faculty of physical therapy, Cairo University.

ABSTRACT

Cerebral palsy is the leading cause of childhood disability. These 2 case studies evaluated the effects of combined Bioresonance therapy (BRT) and rehabilitation programs in the treatment of CP. The evaluation was based on motor development. We found that the treatment combination between BRT and rehabilitation programs, achieved recognized and better results in the treatment of CP.

INTRODUCTION

Cerebral palsy is the most common neuromuscular problem in children. It is a non-progressive lesion of the brain that results in abnormal control of movement and posture (Roots, 1997), resulting from different etiologies in the pre-, peri- or post-natal period (Maurer, 2002).

Cerebral palsy is a disorder of movement and posture that results from a non-progressive lesion or injury of the immature brain. The definition includes a heterogeneous spectrum of clinical syndromes characterized by alteration in muscle tone, deep tendon reflexes, primitive reflexes, and postural reactions. These neurological abnormalities often produce characteristic abnormal patterns of movement that are recognized as the hallmarks of cerebral palsy (Matthews and Wilson, 1999).

EPIDEMIOLOGY

The reported incidences are varied but present approximately 2-3 per 1000 live births. A prevalence rate of 5.2 per 1000 neonatal survivors at 12 months of age but reported resolution in up to half of these children by age 7 years (Pharoah and Cooke, 1997).

The purpose of the study was to show the efficiency of combining both bioresonance therapy and rehabilitation in the treatment of CP.

LITERATURE REVIEW

Etiology

The underlying cause is always a damage of the first motor neuron (Maurer, 2002).
Cerebral palsy is caused by a static lesion to the cerebral motor cortex that is acquired before, at, or within 5 years of birth (Dabeny, et al., 1997). Multiple causes for the condition exist and include cerebral anoxia, cerebral hemorrhage, infection, and genetic syndromes (Dabeny, et al., 1997). Twins are more likely than singletons to have cerebral palsy. Some of the increased risk of cerebral palsy among twins probably results from their gestational age and intrauterine growth retardation (Grether, et al., 1992).

Classification

Cerebral palsy is classified according to the extremities involved (monoplegia, hemiplegia, diplegia, and quadriplegia) and the characteristics of the neurological dysfunction (spastic, hypotonic, dystonic, athetotic, ataxic, or a combination). The clinical manifestations often differ according to the gestational age at birth, the chronological age, the distribution of the lesions, and the underlying disease (Mutch et al., 1992).

Clinical picture

Clinical signs of cerebral palsy:

1. Feeding difficulties, inability to suck or swallow, lack of interest and very slow feeding.
2. Abnormalities of gaze, failure to fix when feeding and delayed smiling.
3. Abnormalities of tone decreased or increased.
4. Abnormalities of behavior – irritability, anxiety, lack of interest in sounds, visual cues, and sleep disturbance.
5. Delayed postural development, lying ability, persistent head asymmetry, and trunk balance reactions.
6. Development of asymmetry of movement or tone.
7. Delayed motor development.

Associated neurological disorders in CP:

1. Vision problems
2. Mental retardation
3. Communication disorders.
4. Dysphagia: The dysphagic problems in CP may lead to inadequate fluid and caloric intake, which results in protein-calorie malnutrition and associated problems.
5. Drooling.

Evaluation

It is difficult to assess objectively the effectiveness of treating children with cerebral palsy during the first year of life (Aebi, 1976).

The continuing maturation of the CNS and growth of the child undoubtedly need to be taken into account in any outcome measure (Patrik et al., 2001). Evaluation of CP child often includes:

1. Medical assessment
2. Physical assessment regarding the following:
   A. Assessment of postural tone
   B. Reflex testing
   C. Musculoskeletal assessment
   D. Fine motor and adaptive skills

Screening tests: Many clinicians use formal screening tests to detect developmental and or behavioral problems. The most common test used in pediatrics is Denver developmental screening test (DDST). It is developed by Frankenberg and Doods (1973). It is widely used to screen for developmental delay. The 105 items in DDST were specifically chosen from pre-existing developmental tests for their ease of administration and interpretation. This test measures the development in four areas:

1. Personal-social: the child’s ability to get along with people and to take care of him/herself.
2. Fine-motor-adaptive: the child’s ability to see and use his or her hands to pick up objects and to draw.
3. Language: the child’s ability to hear, to follow directions and to speak.
4. Gross motor: the child’s ability to sit, to walk and to jump. The age range covered 1 month to 6 years.

TREATMENT

In view of the fact that brain damage cannot be reversed in cerebral palsy, it seems unlikely that there will be recovery other than maturation and compensatory movement (Bower, 1993).

A variety of treatments have been developed in recent years; in addition to conventional orthopedic surgery and physiotherapy (usually based on Bobath techniques in this country, Egypt), multi-level surgery (Patrick, 1996), intramuscular botulinum injections (Corry, 1999), selective dorsal rhizotomy (SDR) (Vaughan, et al., 1998), intra-
The role of physical therapy in defining disability, assessing function, undertaking biomechanical assessment and providing mobility aids/casting/orthoses and motor training/stretching exercises is critical for the success of medical and surgical interventions (Flett, 2003).

Physical and occupational therapists play an important role in the evaluation, goal setting and management of patients with spasticity. Regular stretching is important to prevent contractures and to maintain the range of movement. Therapists should provide spastic patients with a regular, individualized stretching program (Satkunam, 2003).

The physical therapy is mainly based on Neuro-Developmental Therapy. The theory of Neuro Developmental Therapy is based on the understanding of normal child development and why some of our children’s development is disrupted, which perhaps help us in our continuing search for improving ways of helping these children. Many difficulties experienced by children are developmental in origin, and it is considered often the effects of a developmental delay. The brain controls normal development, so if there is a developmental delay in any area, it is probable that the delay is in fact a delay in the development of the brain i.e., neurodevelopmental delay (N.D.D.). This N.D.D. causing motor or academic or emotional developmental delay. The results of this neurodevelopmental delay are many and varied from reading, writing, and maths, difficulties to balance, coordination, movement difficulties, concentration, attention, memory difficulties or emotional difficulties. We believe that an attempt should be made to deal with it first, and then deal with the resultant effects.

In the UK in the 1960s-1980s, Bertha Bobath – a physiotherapist and Karl Bobath – a neuropsychiatrist, were working with brain injured children. The Bobath’s theory was that the central problem for children with Cerebral Palsy is the lack of inhibition of primitive reflexes: the primitive reflexes contributing to, if not actually causing, abnormal muscle tone. We know that if primitive reflexes are present, postural reactions cannot develop fully. The Bobath’s therefore initially worked on inhibiting primitive tonic reflexes: i.e. the cause – and later they concentrated on facilitating postural reactions to develop, in order to achieve normal tone.

Bobath therapy is effective for children with all types of cerebral palsy, regardless of their associated problems or age. Early diagnosis and treatment is crucial to the management and treatment of these children. Each child’s problems are individually assessed by team work, who develops a treatment plan. Continual reassessment ensures that treatment meets the child’s changing needs (Bobath, 1981).

The aim of the Bobath approach is, through specialized techniques of handling, to give children with cerebral palsy the experience of a greater variety of coordinated movement patterns. Bobath technique reply usually concerns the use of techniques of inhibition of abnormal tone and movement patterns, facilitation of more normal movement, and possibly stimulation in cases of hypotonia or muscle inactivity (Bobath, 1981).

Bobath concept is not a method or technique, not limiting, but fluid; was not rigid but changing, and still changing. Bobath concept is that each person with a neurological lesion has the potential for improved functional performance (Bobath, 1981). The concept can be summarized as follows: It is primarily a way of observing, analyzing and interpreting task performance. This also includes the assessment of the client’s potential, which was considered to be that task or those activities which could be performed by the person with a little help, and therefore possible for that person to achieve independently where possible (Bobath, 1981).

The child with cerebral palsy (CP) often lacks adequate stability for ambulation because of impaired postural control and abnormal muscle tone (Greiner et al., 1993). Postural control is defined as the ability to maintain static & dynamic balance postures (Sellers, 1988). Both static & dynamic postural controls are thought to be important & necessary motor abilities (Shumway–Cook & Woollcott 1995). In static balance, the base of support (BOS) remains stationary & only the body center of mass (COM) moves. On the other hand, in dynamic balance both BOS & COM are moving (Woollcott & Tang, 1997).

Postural stability is defined as the ability to maintain or control the center of mass in relation to the base of support to prevent falls and complete desired movement (Horak, 1987). Balance in standing is frequently used as an indicator of postural control (Horak, 1997).

To develop posture control, we need to develop the antigravity mechanism or the mechanism,
which helps to support the weight of the body against gravity.

To develop “stability”, we need to develop the postural fixation of parts of the body, including head on trunk, trunk on pelvis and fixation of the shoulder girdles and pelvic girdles and the lower jaw, pharynx and tongue i. e., postural fixation of the body as a whole.

Also we need to develop “dynamic posture control”, “balance during motion” or “weight shifts”. They require adjustments of the trunk and other parts of the body so that a movement can be made whilst the person maintains posture of equilibrium by applying “balance exercises”.

Reactions to falling or saving from falling are essential to be developed in CP patients. These are various reactions in the limbs, which prevent the person from falling over. For example, the arms may be thrown out to save the person from falling forward, sideways, backwards and in more complicated patterns. These reactions can be stimulated within Developmental Training (Levitt, 1982).

Another technique is commonly used in treatment of CP is Root’s approach (Sensory approach) (Levitt, 1982):

Margaret Root was both an occupational and a physical therapist. She defined this approach as “The activation, facilitation and inhibition or muscle action, voluntary and involuntary through the reflex.”

The main features of Root’s approach are:

1. Techniques of cutaneous stimulation, as stroking, brushing (tactile) – icing, heating (temperature) are used to promote reciprocal inhibition between agonist and antagonist and to stimulate the development of vital functions, e. g. respiration, sucking, swallowing, etc.
2. Reflexes are used in therapy, e. g. tonic labyrinthine reflexes, tonic neck vestibular reflexes, withdrawal patterns.
3. Stretch of muscles, tendons and particular structures, manual pressure on bony prominence aroused to activate, facilitate or inhibit motor response through proprioceptive sensation.
4. She suggests that there is a reciprocal relaxation of shortened muscles when there is activation of their antagonists.

**MATERIAL AND METHODS**

Two different cases of CP received BRT treatment using the BICOM 2000 device from Regumed in Germany and a suitable rehabilitation program. Our concept was to develop a specific rehabilitation program suitable for every case.

**Case 1**

Mohamed Tarek, 11 years old, boy, has cerebral palsy due to unknown cause. His treatment with only physical therapy was not enough and so was not effective as his spasticity increased with time, and he became totally separated from the surrounding community. He was only bed ridden with no movements or reactions. He was suffering severe spasticity with very aggressive upper and lower limbs deformities, especially in flexion and maintaining his hip in adduction like a scissor. Release of Asymmetrical Tonic Neck (ATN), no trunk balance control, unable to communicate, and there were no active movements at all.

The treatment protocol included a combination between preset programs of the BICOM device and Cross-linked Test Technique using the 5-element ampoules.

**Preset BICOM programs**

<table>
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<tr>
<th>Program</th>
<th>Description</th>
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<tr>
<td>910</td>
<td>scar block</td>
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<tr>
<td>846</td>
<td>ATP stimulation</td>
</tr>
<tr>
<td>802, 710</td>
<td>oxygen uptake</td>
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<tr>
<td>530</td>
<td>metabolism</td>
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<tr>
<td>571, 125</td>
<td>activation of the right side of the brain</td>
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<tr>
<td>572</td>
<td>activation of the left side of the brain</td>
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<tr>
<td>839, 402</td>
<td>cell stimulation</td>
</tr>
<tr>
<td>984</td>
<td>allergy due to unknown causes</td>
</tr>
<tr>
<td>970</td>
<td>detoxication</td>
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</tbody>
</table>

He was not epileptic and tested negative to geoopathy (prog. 700).

**Ampoules from the 5-element test set.**

**Ampoules that tested positive:**

- His miasm was luesinum and tuberculinum, both were treated with his basic allergy ampoule and program 197
- BCG vaccine
- Milk and wheat allergy, both were treated with his basic allergy ampoule and program 997
- Treating the tested chakras
- All nervous system subset ampoules
- Pituitary, thyroid and thymus glands, chronic strain
- Catalysts of the central control, because the nervous system tested positive KP1 & 7
- Treating the tested Yin-Yang ampoules
Treating the acute stage of muscles with the joint ampoules, with very good results for his central spasticity.

The treatment protocol began by treating the blocks, miasm, allergies and chakras. Then we alternated between the preset programs of the BICOM 2000 device and the subset ampoules.

Treatment time needed for this boy were 8 month on weekly basis, after that all the frequencies tested negative.

He was also receiving very professional physical therapy programs, mainly with Bobath technique and Root’s technique, twice per week.

Results

After 4 months, he can assume sitting with crossed knees and back support and decreased flexion of elbow deformity. Later he assumes sitting position for a few minutes.

After 6 months, decrease in flexion of knee deformity. He gained head control. He can sit on a chair with back support. He responds to audible and visual stimuli.

After 8 months, he can sit on a ball maintaining balance while supporting his thighs. He rotates his head and became able to maintain balance while moving the ball.

He also responds to songs and rotates his head looking for the source of music.

With increasing intelligence, he became able to recognize his parents. He became able to interpret that his mother will go out when she puts on her clothes and he starts crying because of it. Also he became able to recognize the children singing on television and asks to see them expressing it by crying until his parents put him in front of the TV.

He was just lying neglected in his own world, but now he is sitting in front of the TV to enjoy the children’s songs.

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Case 2

Hala Fahd, 2 years old, Saudi girl, C/O cerebral palsy due to a huge brain cyst developed during gestation period. She was complaining from 7 to 9 grand epileptic fits every day and very short fits almost every minute. She had severe spasticity with very aggressive upper and lower limbs deformities, no head control in either supine or prone position, no trunk balance control, no active movements at all, and sluggish communication.

According to the evaluation of motor development, she has no postural fixation of head. I. e., when she is lying in prone position, she is not able to raise her head. She can not roll herself at all. She had release of primitive spinal reflexes, including extension withdrawal reflex and positive supporting reaction, which interfere with walking.

The treatment protocol with BRT included a combination between preset programs of the BICOM 2000 and the 5-element ampoules.

Preset BICOM programs

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<td>600</td>
<td>zinc point</td>
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<td>522</td>
<td>chronic hearing impairment</td>
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<td>271</td>
<td>TW</td>
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<tr>
<td>230</td>
<td>nervous system meridian attenuation, and</td>
</tr>
<tr>
<td>529</td>
<td>epilepsy, which is still positive after 1 year</td>
</tr>
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Ampoules from the 5-element test set.
Ampoules that tested positive:

- Her miasm was luesinum, treated with her basic allergy ampoule and prog. 197
- Treating the tested geopathic stresses
- BCG and polio vaccines
- Milk allergy which was treated with her basic allergy ampoule and program 997
- Treating the tested chakras
- All nervous system subset ampoules
- All connective tissue ampoules, chronic strain
- Pituitary and thymus glands, chronic strain
- Treating the Yin-Yang ampoules
- Treating the acute stage of the muscles with the joint ampoules.

The treatment protocol began by treating the blocks, miasm, geopathy, and allergies and then treatment was alternating between the preset programs and the subset ampoules.

This girl has been treated for 1 year. She went to her country for 3 month where she received a physical therapy program after which her spasticity and crying habit had deteriorated. It took us 3 months to return back to our end point.

Her physical therapy program consists mainly of Bobath’s and Root’s technique on a 4 times per week basis.

Results

After 16 weeks, according to neurodevelopment evaluation, she has a good postural fixation of the head. I.e., when she assumed prone lying position, she can raise her head and support herself on her forearm, later also on her hands with closed fists. In this position she is able to move her head to both sides and she can do rolling independently. She can sit keeping her balance when her back is supported.

After 24 weeks she has a good postural control of her head in supine position. I.e. in this position she tries to raise her head. She is also able to walk with assistance.

She gained better head control. When she is lying in prone position on a ball and gets tapped under the chin, she raises her head.

After 44 weeks she sits on a ball with support and assumes balancing exercises. She stands in a corner where she can support herself.

Less release of primitive reflexes is present now with maturation of righting reactions.

She can understand simple orders and responds to verbal orders as to give a kiss, roll herself in bed, straighten her legs when standing, raise her head, etc.
DISCUSSION

Since Dr. med. Elisabeth Scherwitz-Josenhans stated (RTI volume 25, 2001, International Congress of bioresonance in Fulda, p. 18-22) that there are masked allergic disorders involving a variety of symptoms are occurring. She also stated that the foods allergy is a disease with many clinical pictures. She also mentioned that child growth and development might be retarded due to food allergy. So treatment of allergy using BRT is essential in these cases.

Since seizures have a particularly poor prognosis. Seizure activity usually implies an underlying neurological disorder (Hill and Volpe, 1994). Treatment using BRT, preset program no. 529 for epilepsy, improves these seizures.

Other ideas about the cause of CP emphasize neurochemically-mediated injury to white matter. One hypothesis is that infections that prompt delivery at the beginning of the third trimester result in the release of cytokines (such as tumor necrosis factor alpha) that damage developing white matter (Leviton, 1993). According to another theory, based on recent in vitro studies and studies in animals, free radicals and released neurotransmitters (such as glutamate) promote necrosis (Oka, 1993). So, it is necessary to eliminate these infections by inverting the ampoules of bacteria, virus, parasites, and also free radicals.

Since MRI scans of 11 patients with CP, who had been born prematurely revealed findings of periventricular white matter damage, indicative of hypoxic-ischemic brain injury. Their results support a growing consensus that cerebral palsy in term infants is often the result of prenatal factors, and less commonly related to the perinatal period (Truwit, et al., 1992). And since that condition could be exist due to genetic syndromes (Dabeny, et al., 1997), here comes the role of BRT using the miasm ampoules and basic allergy ampoules.

Since twins are more likely than singletons to have cerebral palsy. Some of the increased risk of cerebral palsy among twins probably results from their gestational age and intrauterine growth retardation (Grether, et al., 1992), here comes the role of BRT to apply chakras opining and using preset programs to stimulate left and right sides of the brain and the nervous system ampoules.

It is known that favorable development of fetus is connected with the sufficient oxygen requirement. The brain of the fetus is extraordinarily sensitive to the disorders of oxygen supply. Ischemic brain injury connected with perinatal asphyxia is a frequent cause of hypoxic encephalopathy. An increased tolerance of the brain could be achieved by using peptide grows factors, inhibition of nitric oxide or modifying the glutamate receptors activity. Cerebral hypoxia evolves mainly in the case interruption of the feto-placental circulation failure in the neonate (Valkounova, et al., 2001). So, using the preset programs in the BICOM device as 839 & 402 for cell stimulation & the programs 802 & 710 to improve oxygen uptake by the cells can improve neurological conditions.

Also, since recent studies showed that the mitochondrial DNA (mtDNA) deletion affecting 4977 base pairs (mtDNA4977) and this deletion could be generated by perinatal hypoxia or temporary oxygen over saturation during the intensive care of the neonates, the mtDNA is sensitive to oxidative damage (Nadasi, et al., 2003), ATP program number 846, cell stimulation program number 839 & 402 and oxygen uptake programs number 802, 710 will be of benefit for patients with CP.

CONCLUSION

Bioresonance therapy device is strongly recommended with every physical therapy and rehabilitation program in treatment of CP.

RECOMMENDATIONS

Further researches should be conducted to use combined bioresonance and rehabilitation programs in treatment of different neurological conditions.

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