

# **DYSPRAXIA AND CONDUCTIVE EDUCATION ACROSS THE AGE RANGE**

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Dyspraxia is an umbrella term for disorders in which one or several areas of development may be affected. Specific areas of difficulty may include; lack of concentration, lack of confidence, language difficulties, lack of strength and stamina, lax joints, hasty movements, co-ordination and balance difficulties, lateralisation problems, social relationships and/or sensory problems.

The National Institute of Conductive Education has been running regular sessions for children with dyspraxia from age 3-13 years old. Although the difficulties mentioned above can manifest at any age, the institute's experience reflects a typical pattern depicting that certain difficulties are more prominent in a specific age range. In response to this, sessions are structured to focus mainly on those dominant difficulties. The children who have taken part in the sessions have progressed well and the feedback given from parents and professionals involved with the children has been positive.

In this paper, the 'typical' age related difficulties observed in the sessions will be discussed and the structure of the different sessions held will be talked about.

## **REFERENCES**

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2. Boon, M. (2001) *Helping Children With Dyspraxia*. Jessica Kingsley Publishers Ltd.

# **INCLUSION THROUGH THE INTERACTION OF CONDUCTIVE EDUCATION**

*by Mária Hári*

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Inclusion has become alarmingly crucial during the past decades, but the realisation of this goal is not yet a really good solution. Services for children with disabilities are provided by professionals and „helpers” in the output phase of the programme. The helper gets the drowning person out of the water, but does not prevent the person from getting in.

The reasoning about problems has led to the statement that some agenda may be given priority.

The pupil's learning has to be helped - prepared by the teacher - not in the output phase. Teachers trained in the different directions must construct the necessary complexity of the plans of the programme in the planning phase.

One has to be centred in the perceptual process of the pupil.

The teacher has to care for the differences and to refer to every individual. The teacher has to individualise in-group at the same time group leading and management is essential.

The classroom-teacher should be trained instead the helpers. It is the conductor-teacher who can realise inclusion.

# **INCLUSIVE EDUCATION IN THE 21<sup>ST</sup> CENTURY**

*by Seamus Hegarty*

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Educational provision for students who have difficulty in learning at school has changed dramatically over the last half century. There has been a movement from segregated - or no - provision, through integration which flourished in the 1970s-and 1980s, to inclusive education which flourishes in our own day. This movement represents real progress but there are difficulties with the concept of inclusion, which need to be addressed if students' educational interests are to be best, served.

As to the future, educational provision for the target group must be examined within a number of overlapping contexts. These include school improvement initiatives, greater differentiation of school types, information and communication technology, and the growing role of evidence-based practice.

# **CONDUCTIVE EDUCATION NETWORK AT ITI (INTERNATIONAL THERAPEUTIC INITIATIVE) REHABILITATION CENTRE FOR ADULTS IN SOUTHEAST ENGLAND**

*by Maria Heine*

International Therapeutic Initiative Rehabilitation Centre,  
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1. Introducing the Rehabilitation Centre.
2. Conductive Education for adults with different neurological problems.
  - a. Regular classes for individuals and groups.
  - b. Regular residential courses.
  - c. Introductory talks for different branches.
  - d. Introductory weeks abroad.
  - e. Training courses for carers, family members, social workers and voluntary workers, teach how to cope with clients.
  - f. Training courses for professionals and assistants in other rehabilitation centres.
  - g. Clients' and carers' responses.
3. The role of the diet in prevention and rehabilitation for adults taking part in Conductive Education.
  - a. The right fat diet (essential fats for brain and nerve function).
  - b. Acid and alkaline balance.
  - c. Clients' responses.

# **OH YES I CAN!**

*by Toby Hewson, Elizabeth and Anthony Hewson*  
Walberton, United Kingdom

Toby Hewson is 20 years old. He is severely athetoid and in July 2002 will embark on his career.

The presentation will be led by Toby and will describe events from Toby's first school – Scope's 'Ingfield Manor' at Billingshurst, West Sussex, and England. A story will be told by Toby and the family of how they all became involved in Conductive Education when Toby was only eighteen months old, how he progressed through Primary, Secondary and College Education programmes and how Conductive Education provided a focal point for all members of the family to build exciting challenges and opportunities which now underpin Toby's career plans.

They will describe the huge frustrations and benefits of working in the "Goldfish bowl" of Conductive Education at that time and how the experiences have influenced and shaped their lives.

The presentation will conclude with important learning experiences and summarize why the experience of Conductive Education remains so central to Tobys success and the whole family's ability to cope with the pressures of the Educational, Social Services and Health systems that envelope families supporting a young person with a disability.

# **OBSERVATION OF MOTOR DISABLED CHILDREN'S SCRIBBLING**

*by Júlia Horváth*

International Pető Institute, Budapest, Hungary

The graphomotor development of cerebral paretic children is a central issue in the methodology of conductive education (CE). Motor disabled children's drawing development is hindered by some reasons.

Earlier research examined the special characteristic of drawing development in the case of hemiplegia and asymmetric double hemiplegia (Balogh, Horváth 1996) points out current realities and suggests future possibilities for investigations in this field. Despite the various forms of their disabilities, children have to learn to write. The study treats the disintegration of sensory motor co-ordination, which is caused by the organic damage of the cortex of the brain and is the primary reason of dysfunctioning. The paper describes the symptom specific features of drawing in kindergarten age, and describes alternative strategies and methods used in developing drawing skills.

It is noted that the activity of writing is not considered isolated but part of complex movements and cognitive capacities in which the motor, perceptive and speech functions of the child can be developed in accordance with one another. Case studies of 3-year-old kindergarten group children were introduced (healthy and motor disabled). Investigation was done about the way of holding pencils, concentration, hedonistic values and the quality of the drawing.

The objectives were: (1) to look for qualitative changes in this age, (2) to relate whatever changes were found to qualitative changes in other tasks during the same period and, (3) to test whether a positive relationship exists between these qualitative changes in attention span, activity and holding the pencil. 39 children drew pictures were administered in kindergarten age. Over a period of one school year qualitative data (field notes, interviews, photos, drawings, drawing samples and documents) were collected.

- Are there symptom specific strategies and significant differences in scribbling stage amongst healthy groups and motor disabled groups?
- How CE developmental programme helps to develop drawing skills?

Findings: the relatively restricted sample does not show any significant difference in children's drawing development. A slower development can be shown in case of motor disabled children with certain types of CP (tetraparesis and athetosis). The comparative study of individual cases demonstrates age related characteristics (identical elements in scribbles).

With the help of specific cases the disturbance in drawing is demonstrated caused by the damage of the brain and the improvements that are due the methods used at the very beginning the experiment planned for one school year involved the chance of following further developmental procedures up to school age.

## **I CAN DRAW, TOO.**

*by Júlia Horváth & István Örkényi*

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Drawing, just like speech is a special form of self-expression for children. The situation is the same with motor disabled children. The injury of the central nervous system is manifested in adaptation difficulties in several areas, primarily in the disturbances of different levels of sensomotor co-ordination due to the organic injury of the brain cortex. We have experienced and observed (Zsabokorszky et al., 1994) that the most frequent symptom specific disturbances are visual-motor co-ordination problems, the disorders of Gestalt-sight and perception that have an effect on the drawing activity from the beginning. In case of kindergarten age motor disabled children the injury is so arborescent that its effect cannot merely be developed by methods of any kind usually applied in kindergarten age. Increased pedagogical consciousness, algorithm, activities planned and directed in a playful way are required for skill and partial skill development. In early age, the effectiveness of learning depends on the experience gained by activity. Due to motor difficulties the experience of motor disabled children is limited. The film demonstrates visual education in a conductive kindergarten session how it influences more sensory organs. Group kindergarten development is shown in the age where individual or small group development is carried out all over the world.

# IN ORDER TO GAIN AN ACTIVE ROLE

*by Toru Imai*

Warashibe Institute, Osaka, Japan

Our institute has adults with severe cerebral palsy. They have had rehabilitation at several places since they were young. However, that rehabilitation is mostly conducted by instructors; therefore, it cannot be said that their motivation level are high. Moreover, while the rehabilitation is conducted for a long time, they often become accustomed to their passive life that support and rehabilitation are given one-sidedly. We have been faced with the problem of difficulty in improving motivation in ordinary programs at our institute. What had played an important role for getting over such problems is their participation in a work that supports therapeutic riding at our institute.

As is known well, at our institute we have an activity of horseback riding for the disabled, and we offer this activity for the disabled children on Saturday and Sunday. Since places where the disabled people and children can enjoy the horseback riding is quite limited in Japan, this activity is popular. We have offered 250 rides two years ago and 350 rides last year. The fact that those supporting the activity of horseback riding are disabled is highly evaluated in public and their remarkable activity is often introduced through television. They come to realize their social role and to learn how to live in an active way. I would like to list what we have found in our activity as follows:

1. In an ordinary life they used to fix their role on a passive way, however they were able to get the opposite kind of role through their experiences to take care of horses and to feel affection for horses. This change of the role has great meaning, and it can be said that it led a big motivation to their life.
2. Moreover, it has also brought about a big social role to the severely disabled people. They are appreciated for their work and they attracted

the attention of people in the society. Therefore, they realized the great value in their work that is totally different from just rehabilitative work. The effect that was brought to their life through their experiences of realizing the importance of their role and of having responsibility is beyond our measure.

3. On the other hand, it is not an easy job to manage and to take care of big animals like horses. It is hard work and we had many difficulties because of their handicap. However, those ideas and facilitation given by staff and their positive attitude made it possible to overcome such problems. They proved that difficulties would provide great achievement and confidence if they had own ideas and high motivations in order to overcome the problems.
4. The motivation that was built in the severely disabled members was not temporary but permanent. It can be said that it is because their communication level with horses got higher with time. It would have a great meaning on education in general not only on the subject of disabled people and children. It is because that to keep the level of motivation is most important in education but also a very difficult subject.

# **'SANDY'**

*by Lillemor Jernqvist*

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This presentation describes how the Craighalbert Centre (The Scottish Centre for Children with Motor Impairments) seeks to deliver a national service in Scotland, including to the many remote areas, e.g. the highlands and islands.

The paper presents background factors and the requirements for success. It illustrates a high level of social and educational inclusion in place on the small island of Islay on the west coast of Scotland.

# **CHANGES IN MOTOR, PERCEPTION AND COGNITIVE COMPONENTS DURING INTERVAL CONDUCTIVE EDUCATION**

*by Gabriella Kapcsándy*

International Pető Institute, Budapest, Hungary

Between 1997 and 1999 the Pető Institute and the *Institut für Soziale Pädiatrie und Jugendmedizin der Ludwig-Maximilians-Universität München / Kinderzentrum München* pursued a joint research project; the German institution with the purpose to define the indication and short term efficiency of conductive education, the Pető Institute to carry out standard interval conductive education. Through her permanent participation in the project the author had the opportunity to test the efficiency of interval conductive education on the basis of partly standardized observation criteria. There is no instrument to appropriately measure the influence of education and the relatively permanent changes of behaviour in motor disabilities.

The author's investigation covered 62 children involved in the project. Changes were verified using the obligatory criteria of conductors' written reports for statistical calculation. As yet no survey adopting statistical methods to assess the efficiency of conductive education has been pursued. The criteria comprised motor, cognitive, perceptive and self help skills and social behaviour. Single functions were evaluated on a scale of 1 to 10. The lowest level was always 'No action, no willingness to act', the second one 'Seems willing but is unable to initiate the series of movements unaided'. The next scores stood for performance with assistance: the less the assistance the higher the score. The criteria used by the author were based on a test series applied by Kozma, Horváth and Salga in 1990.

Children involved in the project had three four-week blocks of conductive education at three-monthly intervals in Taufkirchen, Bavaria, with conductors from the Pető Institute. The conductors accurately documented each child's progress. The subjective reports they had prepared by given observation

criteria served as a basis for employing the test series to measure children's condition at admission and at discharge. In contrast to the research team of the *Kinderzentrum*, changes brought about by breaks were not an issue of the present survey which attempted a comparison of the output condition with the input condition within the full period of conductive education.

At first conductive education's influence on the progress of children with different diagnoses was analysed within the given sample. In order to have a statistically appropriate quantity of data, groups did not carry out analysis; a projection to the whole number of children was necessary. It still happened that certain symptom complexes were represented by such a low number of individuals that the related results had to be ignored. The samples were too small for generalisation in terms of the possible progress within the given diagnoses. (Only two cases of athetosis, one of hypotension and one of spastic spinal paralysis were involved in the project.) Prevailing diagnoses within the assessed sample were spastic tetraparesis (56%) and diplegia (25%). At a proportion of 6% each, ataxia and hemiplegia could be taken into account. It came to light that relatively low values usually entailed more considerable changes while higher starting values altered less. All children with ataxia and hemiplegia had been able to walk before they joined the project. They changed place and position without difficulty so those functions had high starting scores. Our presumption that the areas where these children would make greatest progress were perception, self help and cognitive functions proved true. The related values showed changes over 40%. In children with spastic tetraparesis data representing progress in perception (53%) came before the data regarding standing and walking (40%). The area where diplegic children had the greatest benefit was standing and walking. Their progress in manipulation skills was relatively little (6%). That was no surprise considering the high starting scores. It was interesting to see that the improvement of social behaviour was over 35% in all symptom complexes. Most research projects emphasise the considerable effect of conductive education on manipulation skills. Not in every case could that be confirmed by the present investigation. In tetraparesis and hemiplegia changes were at 22%, in ataxia and diplegia at 6%. Nevertheless the latter achieved high values at the beginning. The author's ascertainment that low

starting scores go with relatively great progress can be proved if division by severity is examined. The related descriptions apply Perlstein's classification. (Balogh, Kozma, 2000) The author's research revealed that slightly disabled children had the lowest development index (16.5%). The rate of progress was 25% in moderate and 47% in severe cases. In the present research material 6 tetraparetic and 1 athetoid children made up the set of the severely disabled. The majority of the 36 moderate cases had spastic tetraparesis while diplegia prevailed among the 19 slightly afflicted children.

The present research included data analysis concerning all 8 groups. To sum up the matter it can be stated that all children involved in the project made progress in every assessed area, no relapse and no stagnation was observed. In some cases improvement was a result of natural development but great changes certainly reflected intensive education work.

## **References**

1. Observation criteria
2. Chapter on CP
3. Thesis of G. Kapcsándy

# **TOOLS TO DEVELOP CE, TODAY'S CHALLENGES**

*by Ildikó Kozma*

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The equalisation of opportunities urges states, authorities and stakeholders to ensure that education of persons with disabilities is an integral part of the mainstream education system. Although the majority of those with special (conductive educational?) needs are still unreached the effort to provide education for people with special needs mostly within the mainstream system, is very strong. This trend has an impact on CE provision also. The natural development of CE traditional character is in a phase of change, sometimes accompanied with mutations. Given this current state, the very varying range and level of services in CE, it seems to be most helpful to summarise the key issues, describe important elements and approaches to maintain the identity, integrity and future of CE provision.

## **Key Issues:**

1. EDUCATIONAL AND (/OR?) REHABILITATIVE NATURE of Conductive Education (everlasting sowing without harvest, grammar without language)
2. THE INFLUENCE OF THE UNWANTED, "DEMAND LED ELEMENTS" of the market on the basic principles: construction, delivery of the programme, training AND THE PREVENTION OF THE EFFECTS CAUSING MUTATION
3. "GOLDEN ROLES":
  - Improvement of the identification and documentation
  - Imaginative, innovative programme construction
  - Advancement of programme execution
  - Optimising CE process: time, space, personnel and budget economy, "cost-effective CE"

#### 4. PRIORITY AREAS OF THE CE SYSTEM

- Real-policy or idealism? Parallel, sub-, or support CE system: identity, perspective, boundaries, personnel, budget and authority
- Early, full integration: early childhood and kindergarten CE
- Varied CE forms for later ages, preparation for adult life
- Parental involvement
- Family support

#### 5. FUTURE POSSIBILITIES OF CE

- National resource centres
- Training improvement: preparation, training and licensure of conductive education professionals. Curriculum and structure development
- Relevant PhD research studies
- Advantages of the new computer and communication technology, distance learning and video communication opportunity
- Activity in publications, Conductive Education Occasional Papers, CD edition, new CE student textbooks
- International network of CE provides a stabile background for the profession, a wider knowledge and experience base, quality assurance, quality audit, TCC and an advisory system

# THE APPLICATION OF SENSORY-MOTOR TRAINING IN TAIWAN

*by Lin Kuel Mel*

National Taipei Teachers' College, Taiwan

This paper aims to present situation of sensory-motor training courses in special education in Taiwan and to compare these courses with those of Conductive Education, thus to find out their similarities and differences. The advantages found in conductive education from the comparison can probably be introduced into Taiwan.

The first part of this paper deal with the background of Taiwan's special education. The second part is divided into ten segments as follows to explain the application of sensory-motor training and its compare with conductive education

1. characteristics of course (nature of Curriculum),
2. objects of education,
3. scope of application ,
4. contents of course,
5. abilities developed and expect,
6. diagnostics and assessments,
7. individualized educational program,
8. teaching activities (with VCD),
9. quality of Instructions
10. professional training courses etc.

The third part reviews the performances and effect of sensory-motor training courses and in the last part of this paper, the conclusion will be related to whether conductive education merits to be included in teacher's colleges and universities whether the future conductors be trained in Taiwan to inform and highlight the benefit to families of a school for parents within a national network.

# **TO INFORM AND HIGHLIGHT THE BENEFIT TO FAMILIES OF A SCHOOL FOR PARENTS WITHIN A NATIONAL NETWORK**

*by Tracie Linehan, Carole Oviatt-Ham,  
Chris Jay & Margaret Braker*

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The inception of the School for Parents was parent led. The need for help could not be denied families and it was at the 1984 International Conference for Conductive Education<sup>1</sup> that the concept of School for Parents was first heard. In 1966 Dorothy Seglow<sup>2</sup> began a parent and child group in Watford which fuelled the discussions of the importance to develop, nurture and support families through working in partnership within the essence of early intervention<sup>3</sup>.

Today a School for Parents is an all-encompassing provision to enable each child and their family to realise their entitlement, rights and potential. Conductive Education<sup>4</sup> provides the vehicle through which a partnership can grow and families will become knowledgeable and empowered within an environment of inclusion<sup>5</sup>.

Nationally, across England and Wales, the School for Parents Network's success can be determined by the extensive partnerships across statutory bodies, the vast number of families reached via some 40 Schools for Parents and the continued support and outreach into post 5 education settings.

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1 Conference papers

2 Seglow D. 1966, Various Journals.

3 Karoly Akos & Magda Akos. (1991) DINA. A Mother Practices Conductive Education

4 "Hari & Akos (1986) Conductive Education

5 SEN Code of Practice 2001

# **YOUNG PEOPLE NEED TO BE CONNECTED**

*by Aviva Lion*

Tsad Kadima, Jerusalem, Israel

In the summer of 2000 Tsad Kadima led a summer camp in which young motor disabled youngsters met each other from the different parts of Israel and the Palestinian authority and together they met young volunteers who felt richer spiritually as a result of the common experience.

## **33 YEARS ON ...**

*by Anita Loring*

International Cerebral Palsy Society, London, United Kingdom

This very short paper will be a personal account of a journey through the world of Conductive Education, which began when I first visited the Institute of Conductive Education in Budapest in 1968.

I will deal briefly with my first impressions and experiences, what happened next, and go on to describe briefly various projects with which I have had dealing in the development of Conductive Education around the world.

# DATA OF CONDUCTOR-TEACHER TRAINING

*by Erzsébet Lukovics*

International Pető Institute, Budapest, Hungary

In Hungary, the training of professionals for conductive education has been run for four decades at the International Pető Institute as it is called now. During the period from 1964 to 1990, 523 qualified conductors had been trained. The college level training of conductor-teachers between 1987 and 2001 covers 612 persons. At the moment there are 56 new students every year participating in the state financed training. The number of candidates is the triple that. The selection of students is carried out in three phases:

- Aptitude test
- Admission examination
- Evaluation of the skills for the profession

Subject blocks of the training: teaching (1162 classes), conductive and medical biology (1050 classes), common blocks of the two areas (1120 classes). The ratio of practical and theoretical subjects is 50:50. Candidates obtaining a teachers' diploma fulfil the requirements of the conductor-teacher diploma in a special, two-year programme.

The International Pető Institute has approx. 200 to 210 conductors and there are about another 150 conductors working in the national network.

The postgraduate training of qualified conductor-teachers is carried out in university level PhD training and accredited further training in five areas.

The poster shows the history of training in figures, pointing out some moments considered important by the presenter. It outlines the ratios of content in conductor-teacher training, covers the composition of students and lecturers and the data of information and thematic courses and further training.

# **ORTHOPAEDIC SURVEY AND CONDUCTIVE EDUCATION IN CEREBRAL PALSY**

*by H. Maravi & R. Larumbe*  
ASPACE Navarra, Cizur Menor, Navarra, Spain

Rehabilitation in Cerebral Palsy (CP) based on Conductive Education (CE) is a global approach to the different clinical aspects of this disabling entity. Orthopaedic consequences in Cerebral Palsy are well known and one of the main goals to be achieved is to minimize or release possible and future osteoarticular deformities.

As part of our treatment protocol, we include in the initial clinical evaluation a hip X-ray exam. We measure the femoral head position and their excentration degree by the Reimers index. Depending on these findings we determine in each case the better position in the different postural situations across the program. Modifications adopted are:

- Degree of leg abduction in sitting position, according to the excentration degree
- Prevention in the walking task series (time, distance ...)
- Correct hip position in changing positions and transfers.

All these measures are directed to improve the orthopaedic conditions of children enrolled in Conductive Education. We hope this contribution to improve the quality of our work.

# **CONVULSIVE DISORDERS IN CHILDREN WITH CEREBRAL PARESIS**

*by Erika L. Medveczky & Júlia Horváth*  
International Pető Institute, Budapest, Hungary

Epilepsy in CP children is mostly a developmental and not a static secondary disorder. We know little about how the maturation of central mechanism affects integrativity sensory information for motor improvement. We examined a selective population of cerebral paretic (CP) children in a conductive kindergarten group. 31 children (age 3-6), 19 boys and 12 girls with convulsive history were assessed. 16 (51.61%) of them have simple seizure, 8 (25.80%) have febrile convulsion, 11 (35.48%) of them are on anti-epileptic drug (AED) treatment (3 children because of their complicated febrile convulsion).

We wish to find answers to the following questions:

1. onset and type of seizure and the classification of CP
2. seizure frequency, cognitive development and motor performance
3. localisation of EEG focus and handedness
4. AED treatment (mono/or polytherapy) and final motor function

The first seizure appeared at the age of 1 (45.4%), both of them have tetraplegia.

The majority of patients with CP and epilepsy (85.7%) belonged to the spastic CP group. Generalised tonic-clonic seizure (54.5%), West syndrome (36.3%) were seen at majority tetraparetic children. Partial types of epilepsy were detected in 72.7% of CP children.

With right-handed patients EEG focus was seen in the right side 6/11 (54.5%). Epilepsy (EEG focus localisation) is not determining handedness of CP children. Children on monotherapy 8/11 (72.7%) had better fine motor function than those on polytherapy.

17 (54.8%) of children are mentally affected, 11 (35.4%) of them are on AED treatment, their seizure frequency is 3-4 times yearly 54.4%. 14 (45.1%) children are mental retarded, only 21.4% of them have epilepsy.

Sensory and motor function should be carefully investigated in the context of a comprehensive rehabilitation programme like conductive education for children with epilepsy although further study is necessary.

# **CONVULSIVE DISORDERS IN CHILDHOOD AND ADOLESCENT HEMIPARESIS**

*by Erika L. Medveczky*

International Pető Institute, Budapest, Hungary

Treatment of epilepsy in cerebral palsy (CP) presents many unique challenges. 473 hemiparetic children were assessed in our neuropaediatrics department from 1987 to 1998. 137 of them (1-21 years old) were followed up (76 girls, 61 boys) for minimum 3 years.

Results: 78 (56.93%) of them had right sided hemiparesis, 59 (43.06%) were epileptic and 10 (16.95%) had febrile convulsion. 21 (81.35%) of them responded well to monotherapy. 11 (18.64%) of them were controlled with polytherapy. None of them had status epilepticus. In case of 5 hemiplegics, due to the rare occurrence of seizures (1-3), occasional rectal diazepam was applied. 10 (16.95%) had febrile convulsion. 6 children (3-5 years old) received antiepileptic drug (AED) for complicated febrile convulsion. The onset of seizure in 43% of children is under the age of 2. 45% hemiplegic CP children received mainstream or special education. Epilepsy onset in the first 5 years of life and epilepsy duration of more than 5 years were the outstanding parameter for significant sensory and motor deficit. After 4-5 years free of seizures AED might be ceased.

Patients with CP and epilepsy had abnormal MRIs. Early prenatal lesions (dysplasia) were present and associated with both generalised and focal seizures. Cortical involvement is to be significantly related to low IQ and seizures. Cerebral maldevelopments such as schizencephaly and pachygyria correlated with seizures. Epilepsy might influence the maturation of sensory integration. Their seizures frequency associated with impaired motor performance.