

Monday 2 August 2010

This free weekly bulletin lists the latest research on cerebral palsy (CP), as indexed in the NCBI, PubMed (Medline) and Entrez (GenBank) databases. These articles were identified by a search using the key term "cerebral palsy".

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Interventions

1. *Dev Med Child Neurol.* 2010 Jul 28. [Epub ahead of print]

Reference values for anaerobic performance and agility in ambulatory children and adolescents with cerebral palsy.

Verschuren O, Bloemen M, Kruitwagen C, Takken T.

Rehabilitation Center De Hoogstraat, Center of Excellence for Rehabilitation Medicine Utrecht, the Netherlands.

Aim: The aim of this study was to provide reference values of anaerobic performance and agility in a group of children and adolescents with spastic cerebral palsy (CP). **Method:** A total of 300 children (184 males, 116 females) with spastic CP were recruited from 26 rehabilitation centres in six different countries. Of these, 215 were classified at GMFCS level I (mean age 11y 2mo, SD 3y, range 6-18y) and 85 were classified at GMFCS level II (mean age 11y; SD 3y 1mo, range 6-18y). The children performed the Muscle Power Sprint Test (MPST) and the 10x5m sprint test in a standardized manner. To establish reference values, reference curves were created using generalized additive models for location, scale, and shape. **Results:** Height-related reference curves were created based on performance on the two tests. **Interpretation:** This study provides height-related reference values for anaerobic performance and agility for children and adolescents with CP classified at GMFCS levels I and II. These curves are clinically relevant and provide a user-friendly method in the interpretation of anaerobic performance and agility for children with spastic CP.

PMID: 20670284 [PubMed - as supplied by publisher]

2. *Urol Int.* 2010 Jul 27. [Epub ahead of print]

The Unusual History and the Urological Applications of Botulinum Neurotoxin.

Hanchanale VS, Rao AR, Martin FL, Matanhelia SS.

Lancashire Teaching Hospitals NHS Trust, Preston, UK.

Introduction: Botulinum neurotoxin (BoNT) is probably the most potent biological toxin that can affect humans. Since its discovery by Justinus Kerner, BoNT has seen use in a wide range of cosmetic and non-cosmetic conditions such as cervical dystonia, cerebral palsy, migraines and hyperhidrosis. We tried to trace its history from its inception to its recent urological applications. **Materials and Methods:** Historical articles about botulinum toxin were reviewed and a Medline search was performed for its urological utility. We hereby present a brief review of historical aspects of BoNT and its applications in urology. **Results:** In 1793, the first known outbreak of botulism occurred due to 'spoiled' sausage in Wildebad, Germany. The German physician and poet Justinus Kerner published the first accurate description of the clinical symptoms of botulism (sausage poison). He was also the first to mention its potential therapeutic applications. In urology, BoNT has been used in bladder and urethral lesions with varying

degree of success. Recently, BoNT applications were explained for prostatic disorders. BoNT applications in urology are in the treatment of detrusor external sphincter dyssynergia, detrusor overactivity, detrusor underactivity, spastic conditions of the urethral sphincter, chronic prostate pain, interstitial cystitis, non-fibrotic bladder outflow obstruction (including benign prostatic hyperplasia) and acute urinary retention in women. Conclusion: Justinus Kerner is the godfather of botulism research. The role of BoNT in urology has evolved exponentially and it is widely used as an adjuvant in voiding dysfunction. In the future, its utility will broaden and guide the urologist in managing various urological disorders. Copyright © 2010 S. Karger AG, Basel.

PMID: 20664247 [PubMed - as supplied by publisher]

3. J Intellect Disabil Res. 2010 Jul 20. [Epub ahead of print]

Different, difficult or distinct? Mothers' and fathers' perceptions of temperament in children with and without intellectual disabilities.

Boström P, Broberg M, Hwang CP.

Department of Psychology, University of Gothenburg, Gothenburg, Sweden.

Background: Can ratings of temperament be a way of identifying young children with intellectual disabilities (ID) who are at risk for being experienced as difficult? We aimed to explore parents' reports of temperament in their young children with or without ID, as well as positive and negative impact of the child on parents. Method: Mothers and fathers of 55 children recently diagnosed with ID and 183 age-matched typically developing (TD) children completed the EASI Temperamental Survey and two scales of the Family Impact Questionnaire measuring positive and negative impact of the child on parents. Results: Parents rated children with mixed ID/DD (developmental delay) as shyer and more impulsive, and less active and sociable when compared with TD children. Children with mixed ID/DD were also reported to have more negative and less positive impact on the family compared with the TD group. In subgroup analyses, children with Down syndrome and cerebral palsy/motor impairment were described as having less negative impact on parents and were described as low in negative emotionality. Children with autism spectrum disorder (ASD), ID/DD nos and other less common diagnoses had a similar pattern of temperament with high emotionality, shyness and impulsivity, and low activity and sociability. Parents of children with ASD and ID/DD reported the highest level of negative impact. Conclusions: Temperamental characteristics such as high negative emotionality and impulsivity, which can be identified earlier than behavioural problems, could be indicators of negative impact on parents of young children with ID. Despite great variability in temperament among children with mixed ID/DD, results indicated common temperamental characteristics among children with ASD, ID/DD and other diagnosis.

PMID: 20663013 [PubMed - as supplied by publisher]

4. Gait Posture. 2010 Jul 21. [Epub ahead of print]

Torsional profile versus gait analysis: Consistency between the anatomic torsion and the resulting gait pattern in patients with rotational malalignment of the lower extremity.

Radler C, Kranzl A, Manner HM, Höglinger M, Ganger R, Grill F.

Department for Pediatric Orthopaedics, Orthopaedic Hospital Speising, Speisingerstrasse 109, 1130 Vienna, Austria.

Measurements of femoral and tibial torsion obtained from radiographs or computed tomographic scans have been used to describe rotational malalignment of the lower extremities and to clarify indications for surgery. A weak relationship between anatomic torsion deformity and the resulting transverse plane gait pattern in patients with cerebral palsy has been described, but the observations have not yet been tested in an able-bodied patient population. We conducted a prospective study to investigate the correlation of femoral torsion and tibial torsion as measured by using computed tomography with transverse plane gait data for patients with rotational malalignment. Twenty-six lower limbs from 26 patients selected for surgery based on gait analysis were evaluated. Calculation of Pearson correlations showed that increase of femoral anteversion resulted in increase of pelvic range of motion. A very weak correlation between femoral torsion and hip rotation (determination coefficient, $R(2)=0.22$) was found in a lin-

ear regression model, whereas tibial torsion and knee rotation showed a strong correlation (determination coefficient, $R(2)=0.71$). The correlation between the foot progression angle and tibial torsion was higher than between the foot progression angle and femoral torsion. We conclude that there is a considerable dynamic influence of mechanisms of compensation, especially in the hip, that should be considered when evaluating the torsional profile. We therefore recommend conducting three-dimensional instrumented gait analysis for patients undergoing surgical correction of rotational malalignment. Copyright © 2010 Elsevier B.V. All rights reserved.

PMID: 20655226 [PubMed - as supplied by publisher]

5. J Hand Surg Am. 2010 Jul 21. [Epub ahead of print]

Correlation of Motor Function and Stereognosis Impairment in Upper Limb Cerebral Palsy.

Kinnucan E, Van Heest A, Tomhave W.

Department of Orthopaedic Surgery, University of Minnesota, Minneapolis, MN; Shriners Hospital for Children-Twin Cities, Minneapolis, MN.

PURPOSE: To correlate motor function, as measured by the Jebsen-Taylor test, and sensory function, as measured by the 12-object stereognosis testing, in the hands of children with spastic hemiplegia due to cerebral palsy. **METHODS:** A chart review identified children with hemiplegic and triplegic cerebral palsy with stereognosis and Jebsen-Taylor testing between 1997 and 2008. Forty-one children were included in the study, including 22 girls and 19 boys, with an average age of 8.7 years (range, 6-16 years). The right side is affected in 23 children; 34 children have hemiplegic cerebral palsy, and 7 have triplegic cerebral palsy. The initial Jebsen-Taylor and stereognosis test results were recorded for each subject, as well as age, diagnosis, affected side, and prior treatment with hand therapy, botulinum toxin injection, or surgery. Descriptive statistics, chi-square analysis, paired t-tests, and correlation measurements were used for analysis of the data. **RESULTS:** Statistically significant inverse correlations exist between the cards, small objects, checkers, light objects, and heavy objects on the Jebsen-Taylor subtests, as correlated with the stereognosis scores in the affected hand ($p \leq 0.04$). The stereognosis scores for the patients who were not able to complete the Jebsen-Taylor test with the affected hand were significantly lower than those who were able to complete the Jebsen-Taylor test with the affected hand ($p = .04$). The stereognosis scores were significantly lower for the affected side as compared with the contralateral side. The Jebsen-Taylor total test times were significantly longer for the affected side as compared with the contralateral side ($p < .001$). **CONCLUSIONS:** In children with hemiplegic and triplegic cerebral palsy, the impairment of stereognosis is correlated with impairment in motor function, and the inability to complete the Jebsen-Taylor test with the affected hand is associated with impaired stereognosis function. **TYPE OF STUDY/LEVEL OF EVIDENCE:** Prognostic IV. Copyright © 2010 American Society for Surgery of the Hand. Published by Elsevier Inc. All rights reserved.

PMID: 20655151 [PubMed - as supplied by publisher]

6. Braz J Otorhinolaryngol. 2010 Jun;76(3):406.

Balloon sinuplasty in patient with cerebral palsy: result and follow-up. [Article in Portuguese]

Nogueira Júnior JF, Silva ML, Stamm AC.

Centro de Otorrinolaringologia de São Paulo, Hospital Prof. Edmundo Vasconcelos.

PMID: 20658026 [PubMed - in process]Free Article

7. J Health Psychol. 2010 Jul 23. [Epub ahead of print]**Coping using positive reinterpretation in parents of children with cerebral palsy.**

Cheshire A, Barlow J, Powell L.

University of Westminster, UK.

Use of the coping strategy positive reinterpretation was examined among parents of children with cerebral palsy (CP). Survey data (n = 66) were used to gain a general picture of positive reinterpretation use, which was then explored in greater depth using semistructured interviews (n = 13). Positive reinterpretation was positively correlated with self-efficacy and negatively correlated with depression and stress. Interviews identified two types of positive reinterpretation: focusing on the positive aspects of the situation and finding meaning (in caring for a child with CP). Positive reinterpretation appeared to be an adaptive coping strategy used to deal with emotional stresses experienced by parents.

PMID: 20656770 [PubMed - as supplied by publisher]

8. Clin Biomech (Bristol, Avon). 2010 Jul 22. [Epub ahead of print]**Ankle range of motion is key to gait efficiency in adolescents with cerebral palsy.**

Ballaz L, Plamondon S, Lemay M.

Centre de réadaptation Marie-Enfant (CHU Sainte-Justine), Montréal, Québec, Canada; Université du Québec à Montréal, Montréal, Québec, Canada.

BACKGROUND: Gait in young people with cerebral palsy is inefficient and there is a lack of relevant indicators for monitoring the problem. In particular, the impact of gait kinematics on gait efficiency is not well documented. The aim of this study is to examine the relationship between gait efficiency, gait kinematics, lower limb muscle strength, and muscular spasticity in adolescents with cerebral palsy. **METHODS:** Ten ambulatory adolescents with spastic cerebral palsy were recruited. The energy expenditure index during gait, gait kinematics, flexion and extension knee isometric muscle strength, and quadriceps spasticity were assessed. **FINDINGS:** Energy expenditure index (1.5 (0.7) beats/m) was strongly correlated with the ankle and knee flexion/extension ranges of motion ($r = -0.82$, $P < 0.01$ and $r = -0.70$, $P < 0.02$, respectively) and also with maximal plantar flexion ($r = 0.74$, $P < 0.05$) during gait. Knee flexion strength was the only strength measurement correlated with energy expenditure index ($r = -0.85$; $P < 0.01$). **INTERPRETATION:** This study suggests that ankle and knee flexion/extension ranges of motion during gait are key kinematics factors in gait efficiency in adolescents with cerebral palsy. Copyright © 2010 Elsevier Ltd. All rights reserved.

PMID: 20655641 [PubMed - as supplied by publisher]

9. J Bone Joint Surg Br. 2010 Jul;92(7):1006-12.**Removal of deep extremity implants in children.**

Davids JR, Hydorn C, Dillingham C, Hardin JW, Pugh LI.

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We have reviewed our experience of the removal of deep extremity orthopaedic implants in children to establish the nature, rate and risk of complications associated with this procedure. A retrospective review was performed of 801 children who had 1223 implants inserted and subsequently removed over a period of 17 years. Bivariate analysis of possible predictors including clinical factors, complications associated with implant insertion and indications for removal and the complications encountered at removal was performed. A logistical regression model was then constructed using those predictors which were significantly associated with surgical complications from the bivariate analyses. Odds ratios estimated in the logistical regression models were converted to risk ratios. The overall rate of complications after removal of the implant was 12.5% (100 complications in 801 patients), with 48 (6.0%) major and

52 (6.5%) minor. Children with a complication after insertion of the initial implant or with a non-elective indication for removal, a neuromuscular disease associated with a seizure disorder or a neuromuscular disease in those unable to walk, had a significantly greater chance of having a major complication after removal of the implant. Children with all four of these predictors were 14.6 times more likely to have a major complication.

PMID: 20595123 [PubMed - indexed for MEDLINE]

10. BMC Med. 2010 Jul 28;8(1):49. [Epub ahead of print]

Correction: Development of lower limb range of motion from early childhood to adolescence in cerebral palsy: a population-based study.

Nordmark E, Hagglund G, Lauge-Pedersen H, Wagner P, Westbom L.

Correction to Nordmark E, Hagglund G, Lauge-Pedersen H, Wagner P, Westbom L. Development of lower limb range of motion from early childhood to adolescence in cerebral palsy: a population-based study. BMC Medicine 2009, 7:65.

PMID: 20667102 [PubMed - as supplied by publisher]

Epidemiology / Aetiology / Diagnosis & Early Treatment

Please note: This is not yet a comprehensive outline of cerebral palsy prevention literature. It is expected that more research will be included when the search terms are expanded to include key terms other than "cerebral palsy". It is a work-in-progress and it will be expanded in coming months.

11. J Obstet Gynaecol Res. 2010 Aug;36(4):717-25.

Analysis of birth-related medical malpractice litigation cases in Japan: Review and discussion towards implementation of a no-fault compensation system.

Uesugi N, Yamanaka M, Suzuki T, Hirahara F.

Department of Obstetrics, Gynecology and Molecular Reproductive Science, Yokohama City University Graduate School of Medicine, Kanazawa-ku, Yokohama.

Aim: We examined birth-related malpractice civil litigation cases in Japan to clarify the actual status related to the implementation of an obstetrical no-fault compensation system in 2009. **Material & Methods:** In this retrospective review, we analyzed legal and medical information from 64 cases with a delivery date after 1987 and a judgment date between April 1997 and March 2007. **Results:** The malpractice claim was accepted in 44 cases and rejected in 20 cases. The period from the delivery to the judgment date was lengthy (90.1 months overall). The average amount of damages awarded was yen97 810 000 for cases of cerebral palsy (CP). Preterm births and less than 2500 g infants represented a higher incidence rate in the rejected cases. There were 32 cases (50.0%) with CP, 18 (28.1%) with infant death, 10 (15.6%) with neonatal death, and 4 (6.3%) with fetal death. Twenty-three of 44 accepted cases (52.3%) and 11/20 rejected cases (55.0%) had a gestational age of more than 33 weeks at birth and weighed more than 2000 g. Forced deliveries were performed in 45/64 cases (70.3%), and augmentation/induction of labor was performed in 28/64 cases (43.8%). There were 13/16 (81.3%) accepted cases that underwent vacuum and/or forceps extraction after labor augmentation/induction. **Conclusions:** More than half of our cases could be sufficient for a no-fault compensation system in Japan. Though the system is considered to have some problems that need to be solved, this finding suggests that many children and their families may benefit from the new system without having to file.

PMID: 20666935 [PubMed - in process]

12. No To Hattatsu. 2010 Jul;42(4):291-5.**Clinical aspects of epilepsy in children with periventricular leukomalacia [Article in Japanese]**

Fukuda K, Kirino T, Fujiwara Y, Nagai S, Endo S.

Department of Neurology, Kagawa National Children's Hospital, Zentsuji, Kagawa.

We investigated the frequency and characteristics of epilepsy in 63 children (39 males and 24 females) with cerebral palsy caused by periventricular leukomalacia, who were born preterm at <34 weeks' gestation and followed for more than five years (duration: 5-18 years, mean: 9.6 years). While seven (11%) of the 63 patients had febrile convulsions (FC), 11 (17%) were associated with symptomatic localization-related epilepsy (SLRE) and 8 (13%) with West syndrome (WS). The gestational ages of the WS group were significantly ($p<0.05$) longer than in FC group. The DQ of the SLRE and WS groups were significantly ($p<0.01$) lower than in the N-S group. The frequency of spastic quadriplegia was 19%, 29%, 36%, 50% in the N-S, FC, SLRE, WS groups, respectively. Among the 11 SLER patients, 5 had one seizure type, while 3 had two and 3 had three seizure types. The seizure patterns included complex partial seizures (CPS) in 8, secondarily generalized partial epileptic seizures in 8, and simple partial seizures in 4. One patients in the WS group developed CPS, and another patient developed epilepsy undetermined after infancy. Regarding the main localizing symptoms of SLRE, oculogyric seizures were observed in 7 patients and hemi-facial seizures were observed in 8 patients. In all WS patients, the location of the epileptiform discharges was in the parieto-occipital area, while 8 of 11 patients with SLES had it in the central area. In conclusion: 30% of all patients with PVL were associated with epilepsy. WS developed in 13% during early infancy and SLRE developed in 17% after infancy. The most common epileptic seizure in the patients with PVL was complex partial seizure.

PMID: 20666136 [PubMed - in process]

13. Obstet Gynecol. 2010 Aug;116(2 Pt 1):387-92.**Chorioamnionitis and cerebral palsy: a meta-analysis.**

Shatrov JG, Birch SC, Lam LT, Quinlivan JA, McIntyre S, Mendz GL.

From School of Medicine, Sydney, The University of Notre Dame Australia; and Cerebral Palsy Institute, Darlinghurst, New South Wales, Australia.

OBJECTIVE:: To examine the relationships between clinical or histological chorioamnionitis and cerebral palsy using a meta-analysis approach. **DATA SOURCES::** A systematic review of the literature appeared in PubMed between 2000 and 2009 was conducted using the search terms "cerebral palsy" and "infection," with broad-scope variations in terminology of "white matter damage," "periventricular leukomalacia," "cystic periventricular leukomalacia," "chorioamnionitis," "intrauterine infection," "intraventricular hemorrhage," "funisitis," "fetal inflammatory response," "early neonatal sepsis," "neurological impairment," "virus," "bacteria," "fungi," and "protozoa," with variations of suffixes (eg, "viral," "bacterial," "fungal," "protozoan," etc), and "urinary tract infection," "bacterial vaginosis," "bacteriuria," and "cytokines." The related key words "gestational age," "small for gestational age," "preterm," and "low birth weight" also were added to the search terms. Only studies published in English were included. **METHODS::** Three hundred eight articles were retrieved and systematically reviewed independently by two authors. Application of four inclusion criteria led to 15 studies being considered for data abstraction. An exposure was considered relevant if it met the established criteria for clinical or histological chorioamnionitis. The outcome was a diagnosis of cerebral palsy in accordance with established criteria. **RESULTS::** The data were abstracted onto standard forms, correlated according to eight characteristics, and tabulated. Twelve of the 15 studies contained information on the association between clinical chorioamnionitis and cerebral palsy, and eight studies included information on the association between histological chorioamnionitis and cerebral palsy. The results indicated that there were significant associations between clinical chorioamnionitis or histological chorioamnionitis and cerebral palsy, for clinical chorioamnionitis ($\chi^2=13.91$; $P<.001$) with a pooled odds ratio of 2.42 (95% confidence interval 1.52-3.84), and for histological chorioamnionitis ($\chi^2=6.86$; $P=.009$) with a pooled odds ratio of 1.83 (95% confidence interval, 1.17-2.89). The data suggested increased risks of 140% and 80% for neonates exposed to clinical chorioamnionitis or histological chorioamnionitis, respectively. **CONCLUSION::** The significant association of clinical or histological chorioamnionitis with cerebral palsy suggested that clinical strategies to prevent or reduce chorioamnionitis would lead to a reduction in cerebral palsy. The culture techniques currently used to diagnose the presence of pathogenic microorganisms during pregnancy need to improve, both in their methodology and in the length of time they require.

PMID: 20664400 [PubMed - in process]

14. *Obstet Gynecol.* 2010 Aug;116(2 Pt 1):261-8.

A Proposed Evidence-Based Neonatal Work-up to Confirm or Refute Allegations of Intrapartum Asphyxia.

Muraskas JK, Morrison JC.

From the Division of Neonatal-Perinatal Medicine, Loyola University Medical Center, Maywood, Illinois; and the Department of Obstetrics and Gynecology, University of Mississippi Medical Center, Jackson, Mississippi.

OBJECTIVE: To propose a clinical work-up in term and near-term newborns to address the nine American College of Obstetricians and Gynecologists (the College) and American Academy of Pediatrics criteria to define an acute intrapartum event sufficient to cause cerebral palsy. **METHODS:** We examined our experience as neonatal expert witnesses in 103 closed claims of alleged intrapartum asphyxia with poor newborn outcome over a 21-year period from 1987 to 2008. We estimated how often the clinical components of this proposed work-up were not obtained or recorded in the medical record. **RESULTS:** Cord arterial blood gases and placental pathology were not obtained or sent in 38% and 32% of the 103 cases, respectively. Routine neonatal laboratory tests, including a complete blood count with differential, nucleated red blood cells, electrolytes, calcium, coagulation profile, and renal and liver function tests, were frequently absent. Cranial imaging in ultrasonograms, computed tomography, and magnetic resonance imaging were absent in more than 50% of the cases reviewed and were often not scheduled at optimal times. **CONCLUSION:** The medical record of newborns with poor outcomes frequently has a paucity of objective, evidence-based data. This leads to speculation and unethical expert testimony. The protocol will assist in confirming or refuting allegations of intrapartum asphyxia. **LEVEL OF EVIDENCE:** III.

PMID: 20664384 [PubMed - in process]

15. *Neuroepidemiology.* 2010 Jul 24;35(3):185-190. [Epub ahead of print]

Door-to-Door Survey of Major Neurological Disorders in Al Kharga District, New Valley, Egypt: Methodological Aspects.

El Tallawy HN, Farghaly WM, Metwaly NA, Rageh TA, Shehata GA, Elfetoh NA, Hegazy AM, El-Moselhy EA, Rayan I, Al-Fawal BM, Abd Elhamed MA.

Neurology Department of Assiut University, Assiut, Egypt.

Epidemiology of neurological disorders is still lacking in Egypt. The door-to-door method is the most suitable one to screen neurological disorders in our country. Over a 4-year period (June 1, 2005 to May 31, 2009), screening and examination had been carried out to ascertain the incidence and prevalence rate of epilepsy, stroke, cerebral palsy and Bell's palsy, as well as the prevalence of dementia, extrapyramidal syndromes, muscle and neuromuscular disorders, cerebellar ataxia and primary nocturnal enuresis among the urban and rural population of Al Kharga District, New Valley, Egypt. A total of 62,583 people were screened by 3 neurologists in a door-to-door manner, including every door, using a standardized Arabic questionnaire to detect any patient with a neurological disorder. This was a project study of neurological disorders including 3 stages: first stage (June 1, 2005 to May 31, 2006) for data collection, designing a standardized questionnaire and screening; second stage (June 1, 2006 to May 31, 2008) for case ascertainment, classification of neurological disorders and investigations, and third stage (June 1, 2007 to May 31, 2009) for data entry and statistical analysis. The results of this study revealed that the total prevalence rate of neurological disorders in Al Kharga District, New Valley was 2.4/100 with no significant difference among both sexes. The highest prevalence rate was recorded among elderly people (60+ years; 9.25%) and among children (<=18 years; 2.9%). Copyright © 2010 S. Karger AG, Basel.

PMID: 20664292 [PubMed - as supplied by publisher]

16. Int J Paediatr Dent. 2010 Jul 23. [Epub ahead of print]**Prevalence and distribution of developmental enamel defects in children with cerebral palsy in Beijing, China.**

Lin X, Wu W, Zhang C, Lo EC, Chu CH, Dissanayaka WL.

Beijing Boai Hospital, China Rehabilitation Research Center, Beijing.

International Journal of Paediatric Dentistry 2010 Aim. To investigate the prevalence and distribution of developmental enamel defects in children with cerebral palsy (CP) in Beijing, China. Design. A total of 135 children aged 1.5-6 years with moderate or severe congenital CP diagnosed in Beijing Boai Hospital from year 2005 to 2009 were recruited. The children underwent dental examination at the hospital dental clinic. Results. Enamel defects (opacity and/or hypoplasia) were found in 44 (32.6%) out of 135 CP children. Enamel hypoplasia was found in 35 (25.9%) of the CP children, opacity alone was found in 5 (3.7%) of the CP children, and mixed defects (opacity and hypoplasia) was found in 4 (3.0%) of the CP children. Most of the enamel defects were located symmetrically in the primary incisors and first molars. 42.4% of children with enamel defects were born prematurely (<37 weeks) where as only 23.2% of them were born at normal gestational age. No statistically significant difference in the prevalence of enamel defects was found in relation to birth weight ($P > 0.05$). Conclusions. A high prevalence of developmental enamel defects was found among the children with CP. The prevalence of defects varied with the tooth type and was associated with gestational age of the children.

PMID: 20659182 [PubMed - as supplied by publisher]

17. Brain Dev. 2010 Jul 22. [Epub ahead of print]**A longitudinal study of epilepsy and other central nervous system diseases in individuals with and without a history of infantile autism.**

Mouridsen SE, Rich B, Isager T.

Centre for Child and Adolescent Psychiatry, Bispebjerg University Hospital, Copenhagen, Denmark.

Objective: To compare the prevalence and types of epilepsy and other central nervous system (CNS) diseases in a clinical sample of 118 individuals diagnosed as children with infantile autism (IA) with 336 matched controls from the general population. Methods: All participants were screened through the nationwide Danish National Hospital Register (DNHR). The average observation time was 30.3years (range 27-30years), and mean age at follow-up was 42.7years (range 27-57years). Results: Of the 118 individuals with IA, 29 (24.6%) were registered with at least one epilepsy diagnosis against 5 (1.5%) in the comparison group ($p < 0.0001$; OR=21.6; 95% CI 8.1-57.3). Other CNS diseases occurred with low frequency in both groups and only cerebral palsy, unspecified ($p = 0.02$) was significantly more frequent among participants with a history of IA. Conclusions: Our study lends further support to the notion that epilepsy, but not other CNS diseases, is a common comorbid condition in IA. Low intelligence, but not gender, was a risk factor for epilepsy in IA. Copyright © 2010 Elsevier B.V. All rights reserved.

PMID: 20655678 [PubMed - as supplied by publisher]

18. Zhonghua Er Ke Za Zhi. 2010 May;48(5):351-4.**Comorbidities in patients with cerebral palsy and their relationship with neurologic subtypes and Gross Motor Function Classification System levels. [Article in Chinese]**

Hou M, Sun DR, Shan RB, Wang K, Yu R, Zhao JH, Jiang YP.

Department of Neurology & Rehabilitation, Qingdao Children's Hospital, Qingdao 266011, China.

OBJECTIVE: To analyze the comorbidities in patients with cerebral palsy (CP) from two perspectives as neurologic subtype and gross motor functions, and find their correlations. METHODS: Children with cerebral palsy treated in the rehabilitation center from January 2007 to June 2009 received the following examinations: intelligence capacity

test, ophthalmologic consultation, language-speech test, brainstem auditory evoked potential and electroencephalogram. They were stratified according to both neurologic subtype and gross motor functions to detect the occurrence of comorbidities. RESULTS: Of all the 354 cases, 166 (46.89%) had mental retardation, 15 (4.24%) auditory limitations, 138 (38.98%) visual disorder, 216 (61.02%) language-speech disorder and 82 (23.16%) epilepsy. The frequency of individual comorbidities were distributed disproportionately between the different neurologic subtypes. Correlation analysis showed that there was a significant correlation between the spastic diplegia and the visual disorder (correlation coefficient = 0.26), between spastic hemiplegia and epilepsy (correlation coefficient = 0.17), between spastic quadriplegia and epilepsy and mental retardation (the correlation coefficient was 0.38 and 0.11, respectively) and between both dyskinetic and mixed children and language-speech disorder (the correlation coefficient was 0.24 and 0.27, respectively). The frequency of individual comorbidities was distributed disproportionately between the different neurologic subtypes and between the different GMFCS levels ($P < 0.05$), except for the frequency of visual disorders ($\chi^2 = 1.90$, $P > 0.05$); and with the increase of the GMFCS levels, the burden of the comorbidities were more heavy and the incidence of the comorbidities was higher. Multi-comorbidities were relatively infrequently encountered in those with spastic hemiplegic or spastic diplegic children or patients whose GMFCS levels were I-III, while these entities occurred at a frequent level for those with spastic quadriplegic, dyskinetic, or mixed or children whose GMFCS levels were IV and V, and the differences were significant ($P < 0.05$). The mean GMFCS levels of children with spastic quadriplegic, dyskinetic or mixed CP were higher than level III, most of them had no ability of ambulation; while the mean GMFCS levels of spastic hemiplegic or spastic diplegic children were below level III, most of them could walk independently. CONCLUSIONS: There are correlations between the occurrence of the comorbidities such as mental retardation, auditory or visual impairments, language-speech disorders, epilepsy and the cerebral palsy subtype and the gross motor function levels. Clinicians should have a full recognition of these comorbidities, and we should have a cooperation between the different subjects to have an overall evaluation and rehabilitation and to improve the prognosis.

PMID: 20654035 [PubMed - in process]