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CP Research News

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1: Qual Health Res. 2008 Nov;18(11):1501-10.

Variables influencing physiotherapy adherence among young adults with cerebral palsy.

Redmond R, Parrish M.

National Star College, Ullenwood, Cheltenham, United Kingdom.

The findings of this qualitative study provide insight into a range of developmental and personal variables that influence whether young adults with cerebral palsy adhere to physiotherapy programs and advice from physiotherapists, with the aim of improving the quality of services offered to such a population. The study participants included young adults with cerebral palsy between the ages of 16 and 25 years who were enrolled in a college devoted to training disabled young adults. They attended focus groups to discuss their experiences of physiotherapy. A constant comparative method was used within the grounded theory approach for the collection and analysis of data. The results demonstrate that the interaction between physiotherapist and young adult is the essential variable, with the relationship formed being built with trust, respect, and empowerment of the participant. This study offered a valuable opportunity for those often considered too vulnerable to participate in research.

PMID: 18849511 [PubMed - in process]

2: Br Dent J. 2008 Oct 11;205(7):359-71.

Access to special care dentistry, part 8. Special care dentistry services: seamless care for people in their middle years - part 2.

Lewis D, Fiske J, Dougall A.

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This article about special care dentistry in the middle years considers people who have Down's syndrome and cerebral palsy and those who have cardiac and respiratory disease. The increased life expectancy of people with Down's syndrome, currently 50-60 years, is reflected in the changing population profile and needs of these individuals. The preventive and dental treatment of most people with Down's syndrome and cerebral palsy can be met in general dental practice. However, those people with profound disability, anxiety or learning disability may require either a shared approach to care or referral for specialist care. Cardiac and respiratory disease occur commonly in the general population both in middle and older age groups and the dental team will meet increasing numbers of people with these conditions. The procedures and drugs used in dentistry can aggravate heart disease and it is important that the dental team are aware of the common cardiac conditions and their management, as well as how to best manage the oral care of this group. Also, they have a role to play in the provision of oral health advice, smoking cessation and dietary advice. This is particularly important as poor oral hygiene has been linked to respiratory pathogen colonisation and dental plaque may act as a reservoir for aspiration pneumonia in susceptible individuals.

PMID: 18849933 [PubMed - in process]

3: Early Hum Dev. 2008 Oct 11. [Epub ahead of print]

Serial brain MRI and ultrasound findings: Relation to gestational age, bilirubin level, neonatal neurologic status and neurodevelopmental outcome in infants at risk of kernicterus.

Gkoltsiou K, Tzoufi M, Counsell S, Rutherford M, Cowan F.

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AIMS: To describe cranial ultrasound (cUS) and magnetic resonance imaging (MRI) findings in neonates at risk of kernicterus, in relation to gestational age (GA), total serum bilirubin (TSB), age at imaging and neurodevelopmental outcome. PATIENTS AND METHODS: Neonates with peak TSB > 400 mumol/L and/or signs of bilirubin encephalopathy. Review of neonatal data, cUS, preterm, term and later MRI scans and neurodevelopmental outcome. RESULTS: 11 infants were studied, two < 31, four 34-36 and five 37-40 weeks GA. TSB levels: 235-583 mumol/L (preterms); 423-720 mumol/L (terms). Neonatal neurological examination was abnormal in 8/10. cUS showed increased basal ganglia (BG) in 4/9 infants and white matter (WM) echogenicity, lenticulostriate vasculopathy (LSV) and caudothalamic hyperechogencity/cysts (GLCs) in 5/9 infants. MRI showed abnormal signal intensity (SI) in the globus pallidum (GP) in 1/2 preterm, 8/9 term and 9/11 later scans. Abnormal WM SI occurred in 2 preterm, 7 term and 10/11 later scans. Seven infants developed athetoid/dystonic cerebral palsy (CP) and 6 hearing loss (HL). Adverse outcome was associated with abnormal BG on cUS (3/4 CP, 4/4 HL), with high SI in GP (7/9 CP, 6/9 HL) on late T2-weighted MRI (all GA) and on T1/T2-weighted term MRI, mainly in term-born infants. WM abnormalities, GLCs and LSV did not correlate with outcome. CONCLUSIONS: Severe CP occurred with relatively low TSB levels in preterms but only at high levels in full-terms; HL was difficult to predict. Early scans did not reliably predict motor deficits whilst all children with CP had abnormal central grey matter on later scans. Abnormal WM was seen early suggesting primary involvement rather than change secondary to grey matter damage. Why characteristic central grey matter MRI features of kernicterus are not seen early remains unexplained.

PMID: 18851903 [PubMed - as supplied by publisher]

4: Arch Neurol. 2008 Oct;65(10):1291-5.

Progress in periventricular leukomalacia.

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USA.

Periventricular leukomalacia (PVL) is the predominant form of brain injury and the leading known cause of cerebral palsy and cognitive deficits in premature infants. The number of low-birth-weight infants who survive to demonstrate these neurologic deficits is increasing. Magnetic resonance imaging-based neuroimaging techniques provide greater diagnostic sensitivity for PVL than does head ultrasonography and often document the involvement of telencephalic gray matter and long tracts in addition to periventricular white matter. The neuropathologic hallmarks of PVL are microglial activation and focal and diffuse periventricular depletion of premyelinating oligodendroglia. Premyelinating oligodendroglia are highly vulnerable to death caused by glutamate, free radicals, and proinflammatory cytokines. Studies in animal models of PVL suggest that pharmacologic interventions that target these toxic molecules will be useful in diminishing the severity of PVL.

Publication Types:
Research Support, N.I.H., Extramural
Research Support, Non-U.S. Gov't

PMID: 18852342 [PubMed - in process]

5: Clinics. 2008 Oct;63(5):601-6.

Comparative study of skin folding of dominant and nondominant hemibodies in spastic hemiplegic cerebral palsy.

Macedo OG, Carazzato JG, Meirelles Ede S, Paula A, Santos CA, Bolliger Neto R, Mattar Júnior R.

Universidade Sant'Anna, São Paulo, SP, Brazil.

OBJECTIVE: To compare skin folds in the dominant and nondominant halves of the body in a group (A) of 20 individuals with cerebral palsy and spastic hemiplegia and a group (B) of 30 normal volunteers. METHOD: Body mass, height and skin folds were measured, and the percentage of body fat was estimated by adipose tissue measurement and densitometry. The mean age in group (A) was 24.6 +/- 5.6 years (ranging from 16.1 to 38.1 years). The mean age in group (B) was 25.3 +/- 3.8 years (ranging from 19.0 to 34.11 years). RESULTS: Statistically significant differences were observed between the dominant and nondominant halves of the body for biceps, triceps, thoracic, suprailiac, thigh and midcalf skin folds in group A; the biceps, subscapular, midaxillary, suprailiac, abdominal, thigh and midcalf skin folds in group B; and the percentage fat obtained by adipose tissue measurement in both groups. Statistically significant differences were observed for the triceps skin fold when the dominant halves of the body in groups A and B were compared. Statistically significant differences were also observed for the biceps, triceps, thigh and midcalf skin folds as well as the adipose tissue measurements between the dominant and nondominant halves of the body in the two groups. The percentage fat as estimated by densitometry was significantly correlated with the adipose tissue measurement. CONCLUSION: There were statistically significant differences between the skin folds in the dominant and nondominant halves of the body, both in group A and in group B (greater in group A). There was a statistically significant correlation in the percentage fat as estimated by densitometry and as measured by adipose tissue in groups A and B.

PMID: 18925318 [PubMed - in process]

6: J Pediatr. 2008 Oct;153(4):451-2.

The challenge of cerebral palsy classification: the ELGAN study.

Accardo PJ, Hoon AH Jr.

Publication Types:
Comment

Editorial

PMID: 18847614 [PubMed - in process]

7: J Pediatr. 2008 Oct;153(4):A3.

New concepts in cerebral palsy.

Welch TR.

PMID: 18847611 [PubMed - as supplied by publisher]

8: J Pediatr Surg. 2008 Oct;43(10):1853-7.

Cecostomy button for antegrade enemas: survey of 29 patients.

Becmeur F, Demarche M, Lacreuse I, Molinaro F, Kauffmann I, Moog R, Donnars F, Rebeuh J.

Department of Paediatric Surgery, Hautepierre Hospital, 67098 Strasbourg, France.

OBJECTIVE: This study evaluated the Trap-door button use (Cook Medical, Bloomington, IL) for antegrade enemas in children. METHODS: Since 2002, patients with fecal incontinence or encopresis and constipation underwent percutaneous cecostomy under laparoscopy using a button. Technical details are described. Age at surgery, operative time, hospital stay, diagnosis, indications for cecostomy, and duration of follow-up were recorded. A survey was proposed via a questionnaire that was sent to the patients. Patients wearing the button for less than 1 month were excluded from this evaluation. The survey concerned volume and frequency of enemas, difficulties encountered, benefits and disadvantages of this method, and assessment of the antegrade enemas in continence. RESULTS: Twenty-nine patients, 18 males and 11 females, aged 3 to 21 years (mean, 8.5 years) underwent laparoscopic Trap-door button placement. The indications for all the patients were intractable fecal incontinence in 24 cases and constipation with encopresis in 5 cases. Incontinence was because of myelomeningocele (n = 10), anorectal malformations (n = 11), caudal regression syndrome (n = 1), 22q11 syndrome (n= 1), and Hirschsprung disease with encephalopathy with convulsions (n = 1). Constipation with encopresis was because of sacrococcygeal teratoma (n = 1), cerebral palsy (n = 1), and acquired megarectum with psychiatric and social disorders (n = 3). A total of 26 cecostomy button placements and 3 sigmoidostomy button placements were successful with no intraoperative complication. The mean operative time was 25 minutes (10-40 minutes), and the hospital stay was 2.5 days (1-4 days). Twenty-two parents or patients answered the questionnaire. At the time of this survey, 2 patients had improved their fecal continence and had had the button removed. A mean of 4 weekly enemas was enough to improve fecal continence troubles (range, 1 daily to 1 for 2 weeks). The volume for enemas was 250 to 1000 mL (mean, 700 mL). The time required for the irrigation of the bowel by gravity took from 5 to 60 minutes (mean, 25 minutes) for 20 patients. Before surgery, 14 patients needed a diaper, day and night, and 6 needed sanitary protection. Soiling was a very significant inconvenience for all the patients. After surgery, only 5 patients needed a diaper (cerebral palsy, 22q11, cloacal malformation, myelomeningocele, bladder exstrophy) because of moderate results or urinary incontinence and continued soiling. Patients were asked to give an assessment (null = 0, bad = 1, fair = 2, good = 3, very good = 4). None of the patients felt there had been no changes or a bad result. There were 5 patients who felt they had an average result, 5 a good result, and 12 a very good result. The mean grade was 3.44 (17.2/20). A total of 3 patients had hypertrophic granulation tissue formation around the cecostomy button, and 12 had tiny leakage. CONCLUSION: Percutaneous placement of a cecostomy button under laparoscopic control is an easy and major complication-free procedure. The use of the Trap-door device by the patients or with the help of the parents for antegrade enemas is effective and satisfactory. It improves the quality of life and is reversible.

PMID: 18926220 [PubMed - in process]

9: Epilepsy Curr. 2008 Sep-Oct;8(5):118-9.

You've Come a Long Way, Baby: Or Have You?

Vining EP.

LONG-TERM PROGNOSIS IN CHILDREN WITH NEONATAL SEIZURES: A POPULATION-BASED STUDY Ronen GM, Buckley D, Penney S, Streiner DL. Neurology20076919:1816-182217984448. OBJECTIVE: To examine outcome and explore for prognostic markers in a cohort <10 years following neonatal seizures. METHODS: We prospectively diagnosed clinical neonatal seizures with high specificity for true epileptic seizures in a population-based setting of all live newborns in the province of Newfoundland, Canada, between 1990 and 1995. Children with neonatal seizures were followed by specialized provincial health services. Follow-up data were collected on epilepsy, physical and cognitive impairments, and other heath issues. RESULTS: Data were available on 82 out of 90 subjects. We added information on six others whose outcome was clearly predictable from earlier information. Prognosis was better for term than for preterm infants (p = 0.003): term: 28 (45%) normal, 10 (16%) deaths, and 24 (39%) with impairments; preterm: 3 (12%) normal, 11 (42%) deaths, and 12 (46%) with impairments. Of survivors, 17 (27%) developed epilepsy, 16 (25%) had cerebral palsy, 13 (20%) had mental retardation, and 17 (27%) had learning disorders. Variables associated with poor prognosis were Sarnat stage III or equivalent severe encephalopathy, cerebral dysgenesis, complicated intraventricular hemorrhage, infections in the preterm infants, abnormal neonatal EEGs, and the need for multiple drugs to treat the neonatal seizures. Pure clonic seizures without facial involvement in term infants suggested favorable outcome, whereas generalized myoclonic seizures in preterm infants were associated with mortality. CONCLUSIONS: Poor prognosis for premature infants with seizures is reflected in high rates of subsequent long-term disability and mortality. The severity and timing of the pathologic process continue to be the major determinants for outcome. GESTATIONAL AGE, BIRTH WEIGHT, INTRAUTERINE GROWTH, AND THE RISK OF EPILEPSY: Sun Y, Vestergaard M, Pedersen CB, Christensen J, Basso O, Olsen J. Am J Epidemiol20081673:262-27018042672 The authors evaluated the association between gestational age, birth weight, intrauterine growth, and epilepsy in a population-based cohort of 1.4 million singletons born in Denmark (1979-2002). A total of 14,334 inpatients (1979-2002) and outpatients (1995-2002) with epilepsy were registered in the Danish National Hospital Register. Children who were potentially growth restricted were identified through two methods: 1) sex-, birth-order-, and gestational-age-specific z score of birth weight; and 2) deviation from the expected birth weight estimated based on the birth weight of an older sibling. The incidence rates of epilepsy increased consistently with decreasing gestational age and birth weight. The incidence rate ratios of epilepsy in the first year of life were more than fivefold among children born at 22-32 weeks compared with 39-41 weeks and among children whose birth weight was <2,000 g compared with 3,000-3,999 g. The association was modified by age but remained into early adulthood. Incidence rate ratios of epilepsy were increased among children identified as growth restricted according to either of the two methods. In conclusion, short gestational age, low birth weight, and intrauterine growth restriction are associated with an increased risk of epilepsy.

PMID: 18852830 [PubMed - in process]
PMCID: PMC2566608

10: Chir Main. 2008 Aug 21. [Epub ahead of print]

The upper limb of children with cerebral palsy: Surgical aspects. [Article in French]

Salazard B, Medina J.

Pôle Parents-Enfants, fondation hôpital Saint-Joseph, 26, boulevard de Louvain, 13008 Marseille, France; Institut de la main et du membre supérieur, clinique Monticelli, 88, rue du Commandant-Rolland, 13008 Marseille, France.

Cerebral palsy has a complex and multifactorial etiology. The management of the upper limb aims to improve function, hygiene and cosmesis in many patients. Surgical treatment need a good and repeated clinical examination before. The functional surgery has a lot of procedures on the elbow, the wrist, the

fingers and the thumb. These procedures include the release or lengthening of spastic muscles, tendon transfers and joint stabilizations. The surgeon must know the indications and contraindications of functional surgery.

PMID: 18848490 [PubMed - as supplied by publisher]

11: Br J Nurs. 2008 Jul 10-23;17(13):836-41.Neurogenic continence. Part 1: pathophysiology and quality of ilfe.

Pellat GC.

Faculty of Health and Social Sciences, University of Bedfordshire, AVEC, Stoke Mandeville Hospital, Aylesbury, Buckinghamshire.

There are a number of neurological conditions that cause bladder and bowel problems in the form of neurogenic bladder and bowel dysfunction. Both have a considerable impact on a person's quality of life. Nurses have an important role to play in supporting patients when considering the options available to manage their neurogenic bladder and bowel problems. This article is the first of a series of three. Part 1 outlines the physiology of micturition and defecation. It discusses the pathophysiological changes in neurogenic bladder and bowel in spinal cord injury, spina bifida, multiple sclerosis, stroke and acquired brain injury, cerebral palsy, Parkinson's disease and diabetes mellitus. The psychosocial impact of this neurogenic dysfunction is addressed. Part 2 discusses the physical and psychosocial issues related to the management of neurogenic bowel dysfunction, and part 3 goes on to discuss the physical and psychosocial management of neurogenic bladder dysfunction.

PMID: 18856146 [PubMed - in process]

12: Nervenarzt. 2008 Jun;79 Suppl 1:3-8.

Botulinum toxin. Development for therapeutic purposes [Article in German]

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This article comprises a historic description of botulinum toxin (BTX) as a therapeutic substance. The first therapeutic application of BTX injections in humans took place in 1979. It was hoped that surgery for strabismus could be avoided with injections to outer ocular muscles. It was however the positive results in the 1990s against focal dystoniae such as blepharospasm, spasmodic torticollis, and hemifacial spasm that led to broader acceptance of the substance beyond the scope of neurology. Since then BTX has been suggested for therapy of more than 50 indications. Approved mass indications were found in neurology for spasticity and cerebral palsy, in dermatology for focal hyperhidrosis, and in cosmetic medicine for treatment of skin wrinkles. The groundwork has been proceeding for some time pertaining to its approval for further uses in pain therapy and urology.

Publication Types:
English Abstract

PMID: 18927957 [PubMed - in process]

13: Phys Occup Ther Pediatr. 2008 May;28(2):155-69.

Determinants of participation in leisure activities in children and youth with cerebral palsy: systematic review.

Shikako-Thomas K, Majnemer A, Law M, Lach L.

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Children and youth with cerebral palsy (CP) experience difficulties in their ability to move, problem solve, socialize, and communicate, associated with limitations in activities in all environments. They are at risk for lower participation in social and leisure activities critical in fostering friendships, developing interests, and promoting well-being. Little is known about involvement in leisure activities and their determinants. This systematic review aims to describe participation in leisure activities by children with CP and identify personal and environmental factors that influence participation. The following databases were reviewed--CINAHL, Medline, Cochrane, Web of Science, OT-seeker, and REHABDATA--using the keywords participation, cerebral palsy, leisure, and recreation. The literature to date suggests that children with physical disabilities are less involved in leisure activities than their peers; activities are more passive, home based, and lack variety. Several factors influence participation in leisure activities, including age, gender, activity limitations, family preferences and coping, motivation, and environmental resources and supports.

Publication Types:
Research Support, Non-U.S. Gov't

PMID: 18846895 [PubMed - in process]

14: Disabil Rehabil. 2008;30(18):1358-66.

Reliability of hand-held dynamometry and functional strength tests for the lower extremity in children with Cerebral Palsy.

Verschuren O, Ketelaar M, Takken T, van Brussel M, Helders PJ, Gorter JW.

Centre of Excellence, Rehabilitation Centre 'De Hoogstraat', Utrecht.

Purpose. To evaluate the intertester reliability of two methods for measuring lower-limb strength in children with cerebral palsy (CP). Method. Twenty-five subjects with CP (7 - 17 years of age) participated in this study. Lower-limb muscle strength was measured on 2 occasions using a Hand-held Dynamometer (HHD; break-method and make-method) and a 30-sec Repetition Maximum (RM) during three functional strength tests for the lower extremities. Reliability was measured using the intraclass correlation coefficients (ICCs), the standard error of measurement (SEM) and the coefficient of variation (CV). Results. The intertester reliability of strength measurement using a HHD was questionable with ICC values ranging from 0.42 - 0.73 for the break-method, and from 0.49 - 0.82 for the make-method. The SEM and CV (%) values ranged from 27.9 - 58.9 and 22.2 - 35.3% for the break-method, and from 30.6 - 52.7 and 16.2 - 56.2% for make-method. The intertester reliability of strength measurement using the 30-sec RM was acceptable with ICC values ranging from 0.91 - 0.96, and SEM and CV (%) values ranging from 1.1 - 2.6 and 10.9 - 39.9% for the functional exercises. Conclusion. The intertester reliability of measuring muscle strength of the lower extremities using a hand-held dynamometer is questionable. The intertester reliability of the 30-sec RM for the lower extremity is acceptable.

PMID: 18850351 [PubMed - in process]