Cerebral Palsy ALLIANCE

NEWS
Cerebral Palsy Research

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Interventions and Management

1. Eur J Paediatr Neurol. 2011 Sep 23. [Epub ahead of print]

The effect of different physiotherapy interventions in post-BTX-A treatment of children with cerebral palsy.

Desloovere K, De Cat J, Molenaers G, Franki I, Himpens E, Van Waelvelde H, Fagard K, Van den Broeck C.

Clinical Motion Analysis Laboratory, University Hospital Pellenberg, Weligerveld 1, 3212 Pellenberg, Belgium; Department of Rehabilitation Sciences, KU-Leuven, Tervuursevest 101, 3001 Leuven, Belgium.

AIM: To distinguish the effects of different physiotherapeutic programs in a post BTX-A regime for children with Cerebral Palsy (CP). DESIGN: Retrospective, controlled intervention study. PARTICIPANTS AND INTERVENTIONS: A group of 38 children ($\bar{X}$ = 7y7m, GMFCS I-III, 27 bilateral, 11 unilateral CP) receiving an individually defined Neurodevelopment Treatment (NDT) program, was matched and compared to a group of children with the same age, GMFCS and diagnosis, receiving more conventional physiotherapy treatment. All patients received selective tone-reduction by means of multilevel BTX-A injections and adequate follow-up treatment, including physiotherapy. OUTCOME MEASURES: Three-dimensional gait analyses and clinical examination was performed pre and two months post-injection. Treatment success was defined using the Goal Attainment Scale (GAS). RESULTS: Both groups' mean converted GAS scores were above 50. The average converted GAS score was higher in the group of children receiving NDT than in the group receiving conventional physiotherapy ($p < 0.05$). In the NDT group, overall treatment success was achieved in 76% of the goals, compared to 67% of the goals defined for the conventional physiotherapy group. Especially for the goals based on gait analyses ($p < 0.05$) and in the group of children with bilateral CP ($p < 0.05$), treatment success was higher in the NDT group. CONCLUSION: In a post-BTX-A regime, the short-term effects of an NDT approach are more pronouncedthan these from a conventional physiotherapy approach.

PMID: 21945796 [PubMed - as supplied by publisher]

2. Pain Med. 2011 Sep 29. doi: 10.1111/j.1526-4637.2011.01245.x. [Epub ahead of print]

Treatment of Refractory Pain with Botulinum Toxins-An Evidence-Based Review.

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Objectives. To provide updated information on the role of botulinum toxins in the treatment of refractory pain based on prospective, randomized, double-blind, placebo-controlled studies. Design of the Review. Class I and class II articles were searched online through PubMed (1966 to the end of January 2011) and OvidSP including ahead-of-print manuscripts. Results. Level A evidence (two or more class I studies-established efficacy): pain of cervical dystonia, chronic migraine, and chronic lateral epicondylitis. Level B evidence (one class I or two class II studies-probably effective and recommended): post-herpetic neuralgia, post-traumatic neuralgia, pain of plantar fasciitis, piriformis syndrome, and pain in total knee arthroplasty. Level C evidence (one class II study-possibly effective, may be used at discretion of clinician): allodynia of diabetic neuropathy, chronic low back pain, painful knee osteoarthritis, anterior knee pain with vastus lateralis imbalance, pelvic pain, post-operative pain in children with cerebral palsy after adductor hip release surgery, post-operative pain after mastectomy, and sphincter spasms and pain after hemorrhoidectomy. Level U evidence (efficacy not proven due to diverse class I and II results): myofascial pain syndrome and chronic daily headaches. Studies in episodic migraine and tension headaches have shown treatment failure (level A-negative). Conclusion. Evidence-based data indicate that administration of botulinum toxin in several human conditions can alleviate refractory pain. The problems with some study designs and toxin dosage are critically reviewed.

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PMID: 21958302 [PubMed - as supplied by publisher]

3. J Pediatr Rehabil Med. 2011 Jan 1;4(2):155-8.

Nebulized tobramycin: Prevention of pneumonias in patients with severe cerebral palsy.

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Background and methods: In patients with severe cerebral palsy, pneumonias are a frequent occurrence and can lead to excessive morbidity and mortality. Similar poor outcomes can occur in patients with cystic fibrosis. Nebulized tobramycin has been shown to be effective in preventing pneumonias, and in improving lung function in cystic fibrosis patients. This study reports results from three patients with severe cerebral palsy who were suffering from recurrent pneumonias. We compared the 12 months prior to starting nebulized tobramycin, to the first 12 months of intermittent therapy (28 days of nebulized antibiotic, followed by 28 days with no antibiotic, then repeated). We noted the number of pneumonias, the number of hospitalizations due to pneumonia, and length of hospitalizations for pneumonia. Results: Adding the results from the three patients together, the number of pneumonias went from 19 during the year prior to starting the nebulized tobramycin, to 11 during the year of treatment. The number of hospitalizations for pneumonia went from 11 to 0. The number of days in hospital for pneumonia went from 110 to 0.Conclusion: As in cystic fibrosis patients, patients with severe cerebral palsy may benefit from the intermittent use of nebulized tobramycin to prevent pneumonias and hospitalizations due to pneumonia. Further studies are warranted.

PMID: 21955974 [PubMed - in process]

4. Phys Occup Ther Pediatr. 2011 Sep 29. [Epub ahead of print]

Comparison of Family and Therapist Perceptions of Physical and Occupational Therapy Services Provided to Young Children with Cerebral Palsy.

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The purpose of this study was to determine whether parents and therapists have similar perceptions of therapy services provided to young children with cerebral palsy (CP), reflecting collaboration and provision of family-centered care. Forty-six parents of young children with CP and 40 therapists providing services for those children participated. Parents and therapists independently completed the same Services Questionnaire, indicating their perceptions of the focus and extent of the children's therapy services. For data analysis, answers to survey questions were combined into seven categories of items with a similar focus. The Spearman rho correlations and Wilcoxon signed-rank tests were used to explore relationships and differences between the ratings of parents and therapists. No significant correlations were found for the seven categories. Significant differences between ratings for five of the seven categories were identified, indicating parents and therapists differed in their ratings of the focus of therapy interventions. Based on the findings, suggestions for improvement in the provision of family-centered care are provided.

PMID: 21954908 [PubMed - as supplied by publisher]

5. Zh Nevrol Psikhiatr Im S S Korsakova. 2011;111(8):19-22.

Reflexotherapy combined with cortexin in the complex treatment of speech disorders in patients with cerebral palsy. [Article in Russian]

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Authors studied 78 outpatients with children cerebral palsy, aged from 2 to 7 years, in the children department of neurology and reflexotherapy. All children had speech disorders of different severity: from a severe mental-speech deficit to muscle asinergia of the speech apparatus. Combined microcurrent reflexotherapy (MCRT) in the author's technique and the neuroprotector cortexin were used for treatment. The main group included 40 patients who received the treatment of MCRT in the combination with cortexin, the comparison group consisted of 38 patients who received only MCRT. MCRT consisted of 15 sessions with one month interval after the first treatment and two months after the second one. The treatment with cortexin included sessions of 10 injections each after the end of the first and the third MCRT sessions. Patient state was measured at baseline and at the end of 6 month treatment program. An analysis of results of the complex treatment demonstrated its high efficacy in the recovery of speech functions in children with cerebral palsy compared to patients of the comparison group.

PMID: 21946134 [PubMed - as supplied by publisher]

Prevention and Cure

6. Arch Pediatr Adolesc Med. 2011 Aug;165(8):692-700. Epub 2011 Apr 4.

Whole-body hypothermia for term and near-term newborns with hypoxic-ischemic encephalopathy: a randomized controlled trial.

Jacobs SE, Morley CJ, Inder TE, Stewart MJ, Smith KR, McNamara PJ, Wright IM, Kirpalani HM, Darlow BA, Doyle LW; Infant Cooling Evaluation Collaboration.

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OBJECTIVE: To determine the effectiveness and safety of moderate whole-body hypothermia in newborns with hypoxic-ischemic encephalopathy born in hospitals with and without newborn intensive care facilities or complicated hypothermia equipment. DESIGN: Multicenter, international, randomized controlled trial. SETTING: Neonatal intensive care units in Australia, New Zealand, Canada, and the United States (N = 28) from February 2001 through July 2007. PARTICIPANTS: Newborns of 35 weeks' gestation or more, with indicators of peripartum hypoxia-ischemia and moderate to severe clinical encephalopathy, randomly allocated to hypothermia (n = 110) or standard care (n = 111). INTERVENTION: Whole-body hypothermia to 33.5°C for 72 hours or standard care (37°C). Infants who received hypothermia were treated at ambient environmental temperature by turning off the radiant warmer and then applying refrigerated gel packs to maintain rectal temperature at 33°C to 34°C. MAIN OUTCOME MEASURES: Death or major sensorineural disability at 2 years of age. RESULTS: Therapeutic hypothermia reduced the risk of death or major sensorineural disability at 2 years of age: 55 of 107 infants (51.4%) in the hypothermia group and 67 of 101 infants (66.3%) in the control group died or had a major sensorineural disability at 2 years (risk ratio, 0.77 [95% confidence interval, 0.62-0.98]; P = .03). The mortality rate decreased, and the survival rate free of any sensorineural disability increased. Adverse effects of hypothermia were minimal. CONCLUSIONS: Whole-body hypothermia is effective and appears to be safe when commenced within 6 hours of birth at the hospital of birth in term and near-term newborns with hypoxic-ischemic encephalopathy. This simple method of hypothermia could be used within strict protocols with appropriate training on correct diagnosis and application of hypothermia in nontertiary neonatal settings while awaiting retrieval and transport to the regional neonatal intensive care unit. TRIAL REGISTRATION: anzctr.org.au Identifier: ACTRN12606000036516.

PMID: 21464374 [PubMed - indexed for MEDLINE]

7. Front Mol Neurosci. 2011;4:21. Epub 2011 Sep 16.

Early TBI-Induced Cytokine Alterations are Similarly Detected by Two Distinct Methods of Multiplex Assay.

Mukherjee S, Katki K, Arisi GM, Foresti ML, Shapiro LA.

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Annually, more than a million persons experience traumatic brain injury (TBI) in the US and a substantial proportion of this population develop debilitating neurological disorders, such as, paralysis, cognitive deficits, and epilepsy. Despite the long-standing knowledge of the risks associated with TBI, no effective biomarkers or interventions exist. Recent evidence suggests a role for inflammatory modulators in TBI-induced neurological impairments. Current technological advances allow for the simultaneous analysis of the precise spatial and temporal expression patterns of numerous proteins in single samples which ultimately can lead to the development of novel treatments. Thus, the present study examined 23 different cytokines, including chemokines, in the ipsi and contralateral cerebral cortex of rats at 24 h after a fluid percussion injury (FPI). Furthermore, the estimation of cytokines were performed in a newly developed multiplex assay instrument, MAGPIX (Luminex Corp), and compared with an established instrument, Bio-Plex (Bio-Rad), in order to validate the newly developed instrument. The results show numerous inflammatory changes in the ipsi and contralateral side after FPI that were consistently reported by both technologies.

PMID: 21954376 [PubMed - in process] PMCID: PMC3174383

8. Tunis Med. 2011 Sep;89(9):682-5.

Outcome at 2 years of very premature infants. A Tunisian series.

Ben Hamida Nouaili E, Chaouachi S, Bouziri A, Ben Jaballah N, Marrakchi Z.

Background: Neurodevelopmental outcome of very premature infant can be associated with a high rate of cerebral palsy. Aim: To assess the impact of very preterm birth on neurological outcome at the age of two years. Methods: Retrospective study of all cases of very premature infants born at less than 33 weeks of gestational age, during the years 2005 to 2007. Neurodevelopmental outcome is reported. Results: During the study period, the very premature infant rate was 1.5 %. Acomplete information about neurological outcome at the ageof two years, was obtained in 60 cases.Eight infants (13.4%) showed major handicap (cerebral palsy) and four others infants developped neurosensoriel difficulties. Conclusion: The incidence of neurosensoriel handicap in our population seems relatively high. A strong effort must be made for identification of risk factors of neurodevelopmental disability.

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