

Monday 22 March 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 Neurorehabil.* 2010 Oct;**13(1):19-30.**

Upper limb function and brain reorganization after constraint-induced movement therapy in children with hemiplegia.

Cope SM, Liu XC, Verber MD, Cayo C, Rao S, Tassone JC.

Concordia University Wisconsin, Rehabilitation Science, Mequon, WI 53097, USA. steven.cope@cuw.edu

OBJECTIVE: The aims of this study were to (1) investigate the effectiveness of CIMT for children with hemiplegia, (2) determine the feasibility of using fMRI for describing brain activity patterns before and after CIMT and (3) describe changes in brain reorganization after CIMT in children with hemiplegia using fMRI. **DESIGN:** Before and after study with one group. **METHODS:** Ten children aged 7-14 years ($M = 11.0$, $SD = 2.5$) with hemiplegia received CIMT over a 2-week period using a before and after design. Clinical measures included the Melbourne Assessment of Unilateral Upper Limb Function, upper limb kinematics and parent questionnaire. Children were measured with fMRI before and after CIMT. **RESULTS:** Findings showed that CIMT may be effective at improving upper limb function in some, but not all children; those children with a moderate degree of impairment seemed to benefit the most. fMRI findings correlated moderately with clinical measures. **CONCLUSION:** Although unique challenges with fMRI data collection exist for this population, it provides potentially valuable information to better understand mechanisms of change after interventions such as CIMT.

PMID: 20067342 [PubMed - indexed for MEDLINE]

2. *J Bodyw Mov Ther.* 2010 Apr;**14(2):108-118.**

Modifying the effects of cerebral palsy: The Gregg Mozgala story.

Chaitow L, Rogoff T, Mozgala G, Chmelik S, Comeaux Z, Hannon J, Lederman E, Myers T.

University of Westminster, UK.

In response to a news report of the rehabilitation of a New York-based dancer/actor with cerebral palsy, to the point where a ballet performance was scheduled, it was determined that a report based on the individuals involved would be commissioned. The resulting reports from the choreographer responsible for the rehabilitation exercises, and the dancer, were circulated to an interdisciplinary selection of physical medicine experts, for commentary as to what clinicians might learn from the case, and what mechanisms might be involved. Copyright © 2010 Elsevier Ltd. All rights reserved.

PMID: 20226358 [PubMed - as supplied by publisher]

3. J Child Neurol. 2010 Mar 18. [Epub ahead of print]

Developmental and Functional Abilities in Children With Cerebral Palsy as Related to Pattern and Level of Motor Function.

Majnemer A, Shevell M, Hall N, Poulin C, Law M.

School of Physical & Occupational Therapy, McGill University, and Montreal Children's Hospital, McGill University Health Centre, Quebec, Canada.

Abilities among school-aged children with cerebral palsy with different patterns and levels of motor function were evaluated. Children within spasticity patterns (33 with quadriplegia, 25 with hemiplegia, 19 with diplegia) and Gross Motor Function Classification System levels were compared (level I, walking = 47%; level II-III, restricted ambulation = 18%; level IV-V, wheelchair needs = 34%). Outcomes included measures of intelligence, behavior, motor, and functional limitations (communication, daily living, socialization). Motor performance and prosocial behaviors were lower for children with quadriplegia ($F = 16.13, 12.71; P < .0001$), with no differences for behavioral difficulties between spasticity groups. Prosocial behaviors were different between level IV-V and other groups ($F = 16.25, P < .0001$). Functional limitations were more likely for children with quadriplegia ($P < .0001$), but not diplegia or hemiplegia, and for children in level IV-V, but similar for level I and level II-III. Children with quadriplegia, or level IV-V, are more likely to exhibit limitations, whereas children with better motor function (I-III), hemiplegia, or diplegia, exhibit diverse capabilities. A holistic assessment approach is essential to ensure that limitations are addressed comprehensively.

PMID: 20299697 [PubMed - as supplied by publisher]

4. J Pediatr Orthop B. 2010 Mar 17. [Epub ahead of print]

The relation of triceps surae surgical lengthening and crouch gait in patients with cerebral palsy.

de Moraes Filho MC, Kawamura CM, Kanaji PR, Juliano Y.

aAssociation for the Care of Disabled Children (AACD), São Paulo bDivision of Rehabilitative Medicine and Institute of Orthopaedics and Traumatology of University of São Paulo cBiostatistics of Medical School, University of Santo Amaro, São Paulo, Brazil.

To investigate the effect of earlier triceps surae (TS) surgical lengthening at knee kinematics in the stance phase in patients with cerebral palsy (CP). One thousand and thirty-nine participants from an eligible total of 1750 children with CP were referred to gait analysis laboratory from January 2000 to April 2007. Inclusion criteria were the diagnosis of diparetic spastic CP levels I to III (GMFCS) and complete kinematics documentation. Patients with an asymmetrical knee pattern at kinematics and with different types of TS management among sides were excluded. The patients were divided into two groups according to the mean minimum knee flexion (MMKF) in stance phase: group A ($n=253$) MMKF ≥ 30 degrees and group B ($n=786$) MMKF less than 30 degrees. For each group, the occurrence of following procedures for TS in the past: (i) earlier surgery, (ii) gastrocnemius lengthening (zone I), (iii) gastrocnemius and soleus lengthening (zone II), and (iv) calcaneus tendon lengthening (zone III), was investigated. A chi test was applied to check if the number of procedures performed was different between groups. The level of significance was defined as P value of less than 0.05. The number of patients with no earlier surgeries at TS was higher in group B (51.8%) than in group A (39.1%), and this difference was significant ($P < 0.01$). In addition, the number of procedures at the calcaneus tendon was more elevated in group A (36.8%) than in group B (27%), and this finding was statistically significant as well ($P < 0.02$). The percentage of surgical lengthening at zones I and II was very similar between the groups A and B. This study has shown that patients without earlier surgical procedures at TS are more susceptible to reach better extension of the knees in the stance phase. Patients in a crouch gait had a higher number of calcaneus tendon lengthening performed in the past than patients with a more normal knee extension in the stance phase.

PMID: 20300011 [PubMed - as supplied by publisher]

5. J Biomech. 2010 Mar 15. [Epub ahead of print]

Contributions of muscles and passive dynamics to swing initiation over a range of walking speeds.

Fox MD, Delp SL.

Department of Mechanical Engineering, Clark Center, Room S-324, Stanford University, Mail Code 5450, 318 Campus Drive, Stanford, CA 94305-5450, USA.

Stiff-knee gait is a common walking problem in cerebral palsy characterized by insufficient knee flexion during swing. To identify factors that may limit knee flexion in swing, it is necessary to understand how unimpaired subjects successfully coordinate muscles and passive dynamics (gravity and velocity-related forces) to accelerate the knee into flexion during double support, a critical phase just prior to swing that establishes the conditions for achieving sufficient knee flexion during swing. It is also necessary to understand how contributions to swing initiation change with walking speed, since patients with stiff-knee gait often walk slowly. We analyzed muscle-driven dynamic simulations of eight unimpaired subjects walking at four speeds to quantify the contributions of muscles, gravity, and velocity-related forces (i.e. Coriolis and centrifugal forces) to preswing knee flexion acceleration during double support at each speed. Analysis of the simulations revealed contributions from muscles and passive dynamics varied systematically with walking speed. Preswing knee flexion acceleration was achieved primarily by hip flexor muscles on the preswing leg with assistance from biceps femoris short head. Hip flexors on the preswing leg were primarily responsible for the increase in preswing knee flexion acceleration during double support with faster walking speed. The hip extensors and abductors on the contralateral leg and velocity-related forces opposed preswing knee flexion acceleration during double support. Copyright © 2010 Elsevier Ltd. All rights reserved.

PMID: 20236644 [PubMed - as supplied by publisher]

6. Arch Phys Med Rehabil. 2010 Mar;91(3):448-451.

Relationship Between Age and Spasticity in Children With Diplegic Cerebral Palsy.

Pierce SR, Prosser LA, Lauer RT.

Shriners Hospitals for Children, Philadelphia, PA; Institute for Physical Therapy Education, Widener University, Chester, PA.

Relationship between age and spasticity in children with diplegic cerebral palsy. **OBJECTIVE:** To examine the relationship between passive torque, reflex activity, co-contraction, and age during the assessment of spasticity of knee flexors and extensors in children with spastic diplegic cerebral palsy (CP). **DESIGN:** Retrospective. **SETTING:** Pediatric orthopedic hospital. **PARTICIPANTS:** Children (N=36) with spastic diplegic CP. **INTERVENTIONS:** Not applicable. **MAIN OUTCOME MEASURES:** Spasticity of the knee flexors and knee extensors (as measured by peak passive torque, mean passive torque, reflex activity of the medial hamstrings, reflex activity of vastus lateralis, and co-contraction) was assessed during passive movements completed using an isokinetic dynamometer with concurrent electromyography. **RESULTS:** A significant positive relationship was found between age and mean knee flexor passive torque ($P < .05$), while a significant negative relationship was found between age and mean percentage of the range of motion with co-contraction ($P < .05$). **CONCLUSIONS:** Our results suggest that passive stiffness may play a larger role in spasticity than reflex activity as children with spastic diplegic CP age. Additional research is needed to determine whether subject age could influence the effectiveness of interventions, such as serial casting or botulinum toxin, for spasticity in children with spastic diplegic CP. Copyright © 2010 American Congress of Rehabilitation Medicine. Published by Elsevier Inc. All rights reserved.

PMID: 20298838 [PubMed - as supplied by publisher]

7. Comput Methods Biomech Biomed Engin. 2010 Mar 12:1. [Epub ahead of print]**Mechanobiological prediction of proximal femoral deformities in children with cerebral palsy.**

Carriero A, Jonkers I, Shefelbine SJ.

Department of Bioengineering, Imperial College, London, UK.

Children with cerebral palsy (CP) walk with altered gait and frequently exhibit proximal femoral deformities, such as anteversion and coxa valga. The objective of this research was to investigate the effect of specific gait patterns on the femoral morphology in CP. In this study, the mechanobiological principles were implemented on a 3D finite element (FE) model of the proximal femur in order to predict changes in morphology over time in healthy and CP children. This model relies on the assumption that cyclic octahedral shear stress promotes growth and cyclic hydrostatic compressive stress inhibits growth. Growth was simulated over 16 iterations, representing approximately 5 months of growth. The FE model predicts an increase in the femoral anteversion and coxa valga for CP loading conditions when compared with healthy ones. Understanding the role of loading in skeletal morphogenesis may help prevent bone deformities and improve function in children with gait abnormalities.

PMID: 20229379 [PubMed - as supplied by publisher]

8. Arch Phys Med Rehabil. 2010 Mar;91(3):429-435.**Interrater Reliability of Goal Attainment Scaling in Rehabilitation of Children With Cerebral Palsy.**

Steenbeek D, Ketelaar M, Lindeman E, Galama K, Gorter JW.

Department of Physical Medicine and Rehabilitation, Rehabilitation Center Breda, Breda, The Netherlands; Partner in NetChild, Network for Childhood Disability Research in the Netherlands, Utrecht.

Interrater reliability of goal attainment scaling in rehabilitation of children with cerebral palsy. **OBJECTIVES:** To determine the interrater reliability of Goal Attainment Scaling (GAS) in the routine practice of interdisciplinary rehabilitation of children with cerebral palsy, and to examine the difference in the interrater reliability of the scores between GAS scales constructed by the children's own therapists and the scales constructed by independent therapists. **DESIGN:** Individually tailored GAS scales, based on predetermined criteria, were constructed at the start of a 6-month rehabilitation period. The outcome was rated independently by 2 therapists at the end of the treatment period. Two different data sets were acquired, one consisting of scores on GAS scales constructed by the children's own therapists, the other of scores on GAS scales constructed by matched independent raters of the same profession. **SETTING:** A children's unit of a medium-sized rehabilitation center in The Netherlands. **PARTICIPANTS:** Physical therapists (n=8), occupational therapists (n=8), and speech therapists (n=4) participated in pairs. They constructed 2 sets of 64 GAS scales each, for 23 children with cerebral palsy. **INTERVENTIONS:** A 6-month interdisciplinary pediatric rehabilitation program. **MAIN OUTCOME MEASURE:** Interrater reliability was assessed using linear-weighted Cohen's kappa. **RESULTS:** The scales constructed by the children's therapists had an interrater reliability of .82 (95% confidence interval [CI], .73-.91). The interrater reliability for scales constructed by the independent raters was .64 (95% CI, .49-.79). The main reason for disagreement between raters was discrepancies in the professionals' interpretation of the children's capacities versus their actual performance during assessment. **CONCLUSIONS:** The interrater reliability of GAS used under optimal conditions was good, particularly for scales constructed by the children's own therapists. Copyright © 2010 American Congress of Rehabilitation Medicine. Published by Elsevier Inc. All rights reserved.

PMID: 20298835 [PubMed - as supplied by publisher]

9. Arch Phys Med Rehabil. 2010 Mar;91(3):421-428.

Reliability of the Tardieu Scale for Assessing Spasticity in Children With Cerebral Palsy.

Gracies JM, Burke K, Clegg NJ, Browne R, Rushing C, Fehlings D, Matthews D, Tilton A, Delgado MR.

Department of Physical Medicine and Rehabilitation, CHU Henri Mondor, Créteil, France.

Reliability of the Tardieu Scale for assessing spasticity in children with cerebral palsy. **OBJECTIVE:** To measure the Tardieu Scale's reliability in children with cerebral palsy (CP) when used by raters with and without experience in using the scale, before and after training. **DESIGN:** Single-center, intrarater and interrater reliability study. **SETTING:** Institutional ambulatory care. **PARTICIPANTS:** Referred children with CP in the pretraining phase (n=5), during training (n=3), and in the posttraining phase (n=15). **INTERVENTIONS:** The Tardieu Scale involves performing passive muscle stretch at 2 velocities, slow and fast. The rater derives 2 parameters; the Spasticity Angle X is the difference between the angles of arrest at slow speed and of catch-and-release or clonus at fast speed; the Spasticity Grade Y is an ordinal variable that grades the intensity (gain) of the muscle reaction to fast stretch. In phase 1, experienced raters without formalized training in the scale graded elbow, knee, and ankle plantar flexors bilaterally, without and with a goniometer. In phase 2, after training, the experienced and nonexperienced raters graded the same muscles unilaterally. **MAIN OUTCOME MEASURES:** Intrarater and interrater reliability of the Tardieu Scale. **RESULTS:** After training, nonexperienced raters had mean +/- SD intrarater and interrater agreement rates across all joints and parameters of 80% +/- 14% and 74% +/- 16%, respectively. For experienced raters, intrarater and interrater agreement rates before training were 77% +/- 13% and 66% +/- 15%, respectively, versus 90% +/- 8% and 81% +/- 13%, respectively, after training (P<.001 for both). Specific angle measurements at the knee were less reliable for the angles of catch measured at fast speed. Across all joints, agreement rates were similar using visual or goniometric measurements. **CONCLUSIONS:** Both parameters of the Tardieu Scale have excellent intrarater and interrater reliability when assessed at the elbow and ankle joints of children with CP, with no difference noted between visual and goniometric measurements. Angle measurements were less reliable at the knee joints. Training was associated with a highly significant improvement in reliability. Copyright © 2010 American Congress of Rehabilitation Medicine. Published by Elsevier Inc. All rights reserved.

PMID: 20298834 [PubMed - as supplied by publisher]

10. Arch Phys Med Rehabil. 2010 Mar;91(3):333-339.

Efficacy of Partial Body Weight-Supported Treadmill Training Compared With Overground Walking Practice for Children With Cerebral Palsy: A Randomized Controlled Trial.

Willoughby KL, Dodd KJ, Shields N, Foley S.

Yooralla, Melbourne, Victoria, Australia; School of Physiotherapy, La Trobe University, Melbourne, Victoria, Australia.

Efficacy of partial body weight-supported treadmill training compared with overground walking practice for children with cerebral palsy: a randomized controlled trial. **OBJECTIVE:** To evaluate the efficacy of 9 weeks of twice-weekly partial body weight-supported treadmill training (PBWSTT) for children with cerebral palsy (CP) and moderate to severe walking difficulty compared with overground walking. **DESIGN:** Randomized controlled trial. **SETTING:** Metropolitan Specialist School for children with moderate to severe physical and/or intellectual disabilities. **PARTICIPANTS:** Thirty-four children classified level III or IV by the Gross Motor Function Classification System were recruited and randomly allocated to experimental or control groups. Of these, 26 (15 girls, 11 boys; mean age 10y, 10mo +/- 3y, 11mo [range, 5-18y]) completed training and testing. **INTERVENTIONS:** Both groups completed 9 weeks of twice-weekly walking training. The experimental group completed PBWSTT, and the control group completed overground walking practice. **MAIN OUTCOME MEASURES:** Ten-meter walk test (self-selected walking speed), 10-minute walk (walking endurance), School Function Assessment. **RESULTS:** The overground walking group showed a trend for an increase in the distance walked over 10 minutes (F=3.004, P=.097). There was no statistically significant difference in self-selected walking speed over 10 meters or in walking function in the school environment as measured by the School Function Assessment. **CONCLUSIONS:** PBWSTT is safe and feasible to implement in a special school setting; however, it may be no more effective than overground walking for improving walking speed and endurance for children with CP. Continued emphasis on progressive reduction of body weight support along with adding concurrent overground walking practice to a treadmill training protocol may increase the

intensity of training and assist with carryover of improvements to overground walking. Treadmill training programs that include concurrent overground walking as an additional key feature of the training protocol need to be rigorously evaluated for children with CP. Copyright © 2010 American Congress of Rehabilitation Medicine. Published by Elsevier Inc. All rights reserved.

PMID: 20298820 [PubMed - as supplied by publisher]

11. J AAPOS. 2010 Feb;14(1):42-46.

A-pattern strabismus with overdepression in adduction: A special type of bilateral skew deviation?

Donahue SP, Itharat P.

Department of Ophthalmology and Visual Sciences, Vanderbilt University School of Medicine, Nashville, Tennessee; Department of Neurology, Vanderbilt University School of Medicine, Nashville, Tennessee; Department of Pediatrics, Vanderbilt University School of Medicine, Nashville, Tennessee.

BACKGROUND: Skew deviation is an acquired vertical ocular misalignment caused by damage to the prenuclear vestibular inputs to the ocular motor nuclei. A-pattern strabismus often has bilaterally symmetric vertical incomitance and overdepression in adduction (superior oblique overaction) and can be associated with developmental delay, cerebral palsy, hydrocephalus, spina bifida, or posterior fossa or other brainstem disease. The purpose of this study is to describe the ocular motility and torsion findings in patients with A-pattern strabismus and bilateral overdepression in adduction (superior oblique muscle overaction) and to propose a possible brainstem mechanism underlying these observations. **RESULTS:** Most of the 13 patients identified had other neurologic abnormalities, including spina bifida, hydrocephalus, perinatal stroke, or global delay. Only 2 patients had vertical ocular misalignment in primary gaze. Of the 13, 7 had incomitant vertical tropias during lateral gaze, and 12 had bilateral incyclotorsion documented on fundus examination. Despite having bilateral overdepression in adduction (superior oblique overaction), 11 of the 13 had no difference in vertical ocular misalignment with alternating head tilt rather than reversing hypotropias as would be expected from primary oblique dysfunction. The findings are consistent with damage to the utricular pathways corresponding to the anterior semicircular canal and a resulting posterior canal predominance to the extraocular muscle subnuclei that creates increased tonus to the depressors, bilaterally. **CONCLUSIONS:** A-pattern strabismus may, in some cases, represent a special form of skew deviation. The ocular motility and clinical findings are consistent with bilateral damage to the utricular pathways corresponding to the anterior semicircular canals rather than bilateral primary superior oblique muscle overaction. Copyright © 2010 American Association for Pediatric Ophthalmology and Strabismus. Published by Mosby, Inc. All rights reserved.

PMID: 20227622 [PubMed - as supplied by publisher]

12. Motor Control. 2010 Jan;14(1):68-82.

The "mirror box" illusion: effect of visual information on bimanual coordination in children with spastic hemiparetic cerebral palsy.

Feltham MG, Ledebt A, Bennett SJ, Deconinck FJ, Verheul MH, Savelsbergh GJ.

Institute for Biomedical Research into Human Movement and Health, Manchester Metropolitan University, Manchester, United Kingdom.

The study examined symmetrical bimanual coordination of children with spastic hemiparetic cerebral palsy (SHCP) and a typically developing (TD) control group under conditions of visual feedback created by placing a glass screen, opaque screen or a mirror ("mirror box") between the arms. The "mirror box" creates a visual illusion, which gives rise to a visual perception of a zero lag, symmetric movement between the two arms. Children with SHCP exhibited a similar mean coordination pattern as the TD control group, but had greater movement variability between the arms. Furthermore, movement variability in children with SHCP was significantly greater in the screen condition compared with the glass and mirror condition, which were similar to each other. The effects of the availability of visual feedback in individuals with hemiparesis are discussed with reference to central and peripheral mechanisms.

PMID: 20237404 [PubMed - in process]

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.

13. J Matern Fetal Neonatal Med. 2010 Mar 17. [Epub ahead of print]

Vaginal birth after two previous c-sections: obstetricians-gynaecologists opinions and practice patterns.

Doret M, Touzet S, Bourdy S, Gaucherand P.

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Objectives. To evaluate obstetricians' practice patterns, opinions and factors influencing decision-making about mode of delivery in women with two previous c-sections. **Methods.** A questionnaire was mailed to the 160 obstetricians from the Rhone-Alpes perinatal network. Questionnaires included demographic, organisational information and questions about physicians' opinion, practice patterns and patient counseling concerning vaginal birth after c-section (VBAC) after one and two caesarean sections. **Results.** Response rate was 65.6%, 100% and 23.8% would offer VBAC to women with respectively one and two previous c-sections. Uterine rupture rate was largely overestimated in both women with one (2.8%) and two prior c-sections (14.2%). Factors positively influencing obstetricians were cerebral palsy estimated rate less than 20%, a minimal decision to birth delay less than 20 min when emergency c-section would be required. Neonatal severe outcomes consecutive to trial of labour as well as placenta praevia or accreta risk and morbidity associated with multiple c-sections would be insufficiently discussed. **Conclusion.** Obstetricians largely prefer a third planned c-section in women with two previous c-sections. This decision is partly based on a large overestimation of immediate maternal and neonatal serious outcomes consecutive to trial of labour as well documented serious long term outcomes of multiple c-sections are insufficiently considered.

PMID: 20233132 [PubMed - as supplied by publisher]

14. Hum Pathol. 2010 Mar 16. [Epub ahead of print]

Thrombosis of the umbilical vessels revisited. An observational study of 317 consecutive autopsies at a single institution.

Avagliano L, Marconi AM, Candiani M, Barbera A, Bulfamante G.

Unit of Human Pathology, Department of Medicine, Surgery and Dentistry, San Paolo Hospital Medical School, University of Milano, 20142 Milano, Italy; Unit of Obstetrics and Gynecology, Department of Medicine, Surgery and Dentistry, San Paolo Hospital Medical School, University of Milano, 20142 Milano, Italy.

Thrombosis of the umbilical vessels has been associated with conditions like fetal death, cerebral palsy, and severe fetal distress, which are common causes for litigation in today's obstetrics practice. Although different anatomical conditions of the umbilical cord as well as maternal or fetal pathologies are considered risk factors, the etiology of thrombosis of the umbilical vessels is still obscure in many cases that pathologists handle. We diagnosed 32 cases of umbilical vessel thrombosis in a series of 317 consecutive autopsies of spontaneous intrauterine fetal death selected from a file of 914 fetal and neonatal autopsies. All cases were singleton pregnancies without chromosomal abnormalities or structural malformations. Our data confirm the heterogeneous etiology and pathogenesis of umbilical vessel thrombosis and highlight a much higher incidence of this lesion than what has been previously reported. In addition, they point out the correlation between thrombosis of the umbilical vessels and specific histologic placental patterns that, in turn, might help explain the etiology and pathogenesis of thrombosis of the umbilical vessels. Copyright © 2010. Published by Elsevier Inc.

PMID: 20236685 [PubMed - as supplied by publisher]

15. Prenat Diagn. 2010 Mar 16. [Epub ahead of print]**Aortic isthmus Doppler velocimetry: role in assessment of preterm fetal growth restriction.**

Kennelly MM, Farah N, Turner MJ, Stuart B.

Ultrasound and Fetal Medicine Centre, Coombe Women & Infants University Hospital, Dublin, Ireland.

Intrauterine fetal growth restriction (IUGR) is an important pregnancy complication associated with significant adverse clinical outcome, stillbirth, perinatal morbidity and cerebral palsy. To date, no uniformly accepted management protocol of Doppler surveillance that reduces mortality and cognitive morbidity has emerged. Aortic isthmus (Aol) evaluation has been proposed as a potential monitoring tool for IUGR fetuses. In this review, the current knowledge of the relationship between Aol Doppler velocimetry and preterm fetal growth restriction is reviewed. Relevant technical aspects and reproducibility data are reviewed as we discuss Aol Doppler and its place within the existing repertoire of Doppler assessments in placental insufficiency. The Aol is a link between the right and left ventricles which perfuse the lower and upper body, respectively. The clinical use of Aol waveforms for monitoring fetal deterioration in IUGR has been limited, but preliminary work suggests that abnormal Aol impedance indices are an intermediate step between placental insufficiency-hypoxemia and cardiac decompensation. Further prospective studies correlating Aol indices with arterial and venous Doppler indices and perinatal outcome are required before incorporating this index into clinical practice. Copyright (c) 2010 John Wiley & Sons, Ltd.

PMID: 20232481 [PubMed - as supplied by publisher]

16. BMJ. 2010 Mar 12;340:c1455. doi: 10.1136/bmj.c1455.**Man with cerebral palsy can claim for damages after 35 years.**

Dyer C.

PMID: 20228147 [PubMed - in process]

17. Brain Behav Immun. 2010 Mar 12. [Epub ahead of print]**Effects of prenatal infection on brain development and behavior: a review of findings from animal models.**

Boksa P.

Department of Psychiatry, McGill University, Douglas Mental Health University Institute, Montreal, Canada.

Epidemiological studies with human populations indicate associations between maternal infection during pregnancy and increased risk in offspring for central nervous system (CNS) disorders including schizophrenia, autism and cerebral palsy. Since 2000, a large number of studies have used rodent models of systemic prenatal infection or prenatal immune activation to characterize changes in brain function and behavior caused by the prenatal insult. This review provides a comprehensive summary of these findings, and examines consistencies and trends across studies in an effort to provide a perspective on our current state of understanding from this body of work. Results from these animal modeling studies clearly indicate that prenatal immune activation can cause both acute and lasting changes in behavior and CNS structure and function in offspring. Across laboratories, studies vary with respect to the type, dose and timing of immunogen administration during gestation, species used, postnatal age examined and specific outcome measure quantified. This makes comparison across studies and assessment of replicability difficult. With regard to mechanisms, evidence for roles for several acute mediators of effects of prenatal immune activation has emerged, including circulating interleukin-6, increased placental cytokines and oxidative stress in the fetal brain. However information required to describe the complete mechanistic pathway responsible for acute effects of prenatal immune activation on fetal brain is lacking, and no studies have yet addressed the issue of how acute prenatal exposure to an immunogen is transduced into a long term CNS change in the postnatal animal. Directions for further research are discussed. Copyright © 2010. Published by Elsevier Inc.

PMID: 20230889 [PubMed - as supplied by publisher]

18. Neuropsychology. 2010 Mar;24(2):147.**Correction to van braeckel et Al. (2010).**

Van Braeckel K, Butcher PR, Geuze RH, van Duijn MA, Bos AF, Bouma A.

Department of Clinical and Developmental Psychology.

Reports an error in "Difference rather than delay in development of elementary visuomotor processes in children born preterm without cerebral palsy: A quasi-longitudinal study" by Koenraad Van Braeckel, Phillipa R. Butcher, Reint H. Geuze, Maritje A. J. van Duijn, A. F. Bos and Anke Bourma (Neuropsychology, 2010[Jan], Vol 24[1], 90-100). In the current article the names of authors Marijtje A. J. van Duijn and Anke Bouma were misspelled as Maritje A. J. van Duijn and Anke Bourma, respectively. The online versions of this article have been corrected. (The following abstract of the original article appeared in record 2010-00119-012.) Follow-up studies of preterm children without serious neonatal medical complications have consistently found poor visuomotor and visuospatial skills. In the first round of current follow-up study, we found a deficit in elementary visuomotor processes in preterm children without Cerebral Palsy (CP). To determine whether the development of these processes was delayed or different, we carried out a quasi-longitudinal study in which kinematic characteristics of pointing movements in 7- to 11-year-old preterm born children without CP and in an age-matched full-term group were analyzed. Multi-level analysis suggested a difference rather than a delay in the preterm born group: we found a regression around 8 years of age in the control but not in the preterm group. To our knowledge, this study is the first to provide longitudinal data confirming this regression in the development of movement control in typically developing children. Our results are also consistent in suggesting that elementary visuomotor processes are less efficient in preterm born children without CP: their movements were either slower or less accurate. While these differences were subtle, they persisted until 11 years of age. (PsycINFO Database Record (c) 2010 APA, all rights reserved).

PMID: 20230108 [PubMed - in process]