NEUROREHABILITATION

P215
QUALITY OF LIFE IN CHILDREN WITH DUCHENNE MUSCULAR DYSTROPHY

Tereza Cristina Carbonari de Faria, Juliana Bassalobre Carvalho Borges, Gabriela de Andrade Vieira, Taciane Rafael Zambinati, Liai Sousa, Marcelo Lourenço Silva, Universidade Federal de Alfenas, UNIFAL-MG, Brazil

Introduction: Evaluate the perception of quality of life (QL) in children with Duchenne muscular dystrophy (DMD) and compare with age-related children without dystrophy.

Methods: We investigated four male children between 9 and 15 years with DMD. For control group, we considered four subjects of the same sex, age and body mass index (BMI). The QL was assessed by using the instrument AUQEI - AutoquestionnaireQualité de Vie Enfant Image. The questionnaire is based on the perspective of the child's satisfaction, consisting of 26 questions that explore family relationships, social activities, health, bodily functions and divorce. In the statistical analysis, we used the Kolmogorov-Smirnov test and paired t-test, with significance level of 5%.

Results: In children with DMD, the total score of QL was 53.0 points (± 7.65), cut-off point 48, with 73% positive and 25% with impaired QL. In the control group, the mean total score of QL was 55.0 points (± 2.45), cut-off point 48, therefore all children with positive QL. The perceived QL of children with and without DMD was not significant in both the total score and for the domains (p>0.05).

Conclusion: The findings show that the QL of all children were considered positive and only a child with DMD was considered impaired. This study is ongoing, seeking increase of the sample and investigation.

P216
QUALITY OF LIFE IN CHILDREN FROM A PUBLIC SCHOOL

Tereza Cristina Carbonari de Faria, Mariana Fulanetti Costa, Bruno Haicalan Ferreira, Sabrina RosiesCarvalho, Paulo Ricardo Rodrigues Goncalves, Denise Hollandalines, Carmélia Bomfin Jacò Rocha, Juliana Bassalobre Carvalho Borges. Universidade Federal de ALFENAS, UNIFAL-MG, Brazil

Introduction: In recent decades, interest in research involving quality of life (QL) has progressed substantially, however, in children is still scarce.

Objectives: To evaluate the perception of quality of life in children from a public school.

Method: Cross-sectional and descriptive study in children from a public school. Work approved by the Ethics Committee. We investigated 153 children between 6 and 13 years (mean 8.4 ± 1.5 years), from May to August 2013. The evaluation consisted personal, lifestyle habits, anthropometry (weight, height and BMI) and QL assessment by AUQEI (Autoquestionnaire Qualité de Vie Enfant Image).

Results: Among the 153 children studied, 43.8% were males and 56.2% females. Predominant age was seven (54.64%) and nine years (24.18%). Most children enrolled in 2nd (37.91%) and 5th years grade (24.18%). We observed 72.55% and 27.45% normal children overweight (16.34% overweight and 11.11% obese). The mean total score of QL was 50.78 ± 6.06 points, considering cut-off point 48, 73.86% of children with positive QL and 26.14% lower QL. The recreation domain showed the highest and 6.06 points, considering cut-off point 48, 73.86% of children with positive QL. The perceived QL of children with and without DMD was not significant in both the total score and for the domains (p>0.05).

Conclusion: The findings show that the QL of all children were considered positive and only a child with DMD was considered impaired. This study is ongoing, seeking increase of the sample and investigation.

P217
CARDIOVASCULAR RISKS AND LEVEL OF PHYSICAL ACTIVITY IN CHILDREN IN FROM A PUBLIC SCHOOL

Tereza Cristina Carbonari de Faria, Mariana Fulanetti Costa, Bruno Haicalan Ferreira, Sabrina RosiesCarvalho, Paulo Ricardo Rodrigues Goncalves, Denise Hollandalines, Carmélia Bomfin Jacò Rocha, Juliana Bassalobre Carvalho Borges. Universidade Federal de ALFENAS, UNIFAL-MG, Brazil

Introduction: Cardiovascular diseases have been associated with several risk factors. The aim of this study was to identify the cardiovascular risks and level of physical activity in children from a public school.

Methods: Cross-sectional and descriptive study in children and approved by the Ethics Committee. We investigated 153 children between six and 13 years (mean 8.4 ± 1.5 years), from May to August 2013. Rating: personal data, vital signs, physical examination (blood pressure), anthropometry (weight, height and BMI) and International Physical Activity Questionnaire (IPAQ) short version.

Results: Among the 153 children studied, there was 43.8% male and 56.2% female, most of the 2nd grade year (37.91%) followed by 5th grade (24.18%). Regarding BMI, it was observed that 27.45% had overweight (16.34% overweight and 11.11% obese). It has been observed average systolic BP 90.53 mmHg (± 11.12) and mean diastolic BP 54.04 mmHg (± 10.27). Regarding the IPAQ, observed most of 94 children, 62% are classified as insufficiently active, followed by 23% active and 15% very active.

Conclusions: The findings of this study showed that most of the children were considered insufficiently active and there was a high prevalence of overweight and obesity. Regarding the values of BP, most are normal. These findings highlight the need to adopt preventive care, aiming to enhance healthy eating habits with regular practice of physical activity, in an attempt to minimize the incidence of obesity and in children.

P218
RESPIRATORY MUSCLE TRAINING IN PATIENTS WITH DUCHENNE MUSCULAR DYSTROPHY: CLINICAL TRIAL WITH ONE GROUP

Tereza Cristina Carbonari de Faria1, Larissa Perossi Nascimento, Samara de Oliveira Silva, Raçaélle Rocha Figueiredo, Carmélia Bomfin Jacò Rocha, Liai Sousa, Sebastião Marcos Ribeiro Carvalho, Juliana Bassalobre Carvalho Borges. UNIVERSIDADE FEDERAL DE ALFENAS, UNIFAL-MG, Brazil

Introduction: Weakness of the respiratory muscles is a major cause for respiratory failure in Duchenne muscular dystrophy (DMD).

Objective: To evaluate the effects of inspiratory muscle training on respiratory muscle strength in patients with DMD.

Methods: Clinical trial with one group with five patients (DMD), aged 11.4±2.6 years, assessed by manovacuometry (MIP and MEP) and Peak Flow (PEF) in three stages: initial (baseline), five and ten session. Inspiratory muscle training, with 30% of MIP in linear load device (threshold), five sets of 10 repetitions, totalling 10 sessions, three times a week. This week was approved by the ethics committee and the results were analyzed by Friedman test and Dunn test and calculation of effect size (r) of Cohen.

Results: Mean initial, fifth and 10th session, respectively: MIP (cmH2O) -64, -69.8 and -86.8; MEP (cmH2O) 64, 67 and 73.6 and PEF (L/min) 218, 218 and 232. Friedman test significant: MIP (p=0.006), MEP (p=0.003) and PEF (p=0.012). Dunn test: MIP = initial ≤ 5sessions < 10sessions (p=0.343, p=0.058, p=0.004), 29% improvement in initial sessions to 10th with effect size r=0.85 (major), explaining 72% of the total variance. MEP: Initial ≤ 5sessions ≤ 10sessions (p=0.012). Dunn test: initial < 5sessions < 10sessions (p=0.527, p=0.040, p=0.007), 29% improvement in initial sessions to 10th with effect size r=0.85 (major), explaining 72% of the total variance. PEF: Initial ≤ 5sessions ≤ 10sessions (p=0.752, p=0.027, p=0.001), improvement of 9% from initial to 10 sessions and effect size r=0.80 (major), explaining 64% of the total variance.

Conclusion: Training proposed was effective in gaining respiratory strength in 10 sessions. Because the progression of DMD suggest permanent treatment aimed at maintaining and improving muscle strength.
Introduction: Instrumental training (IT) is a multisensory motor experience, which requires many skills, including reading a complex symbolic system and translating into sequential, bimanual motor activity dependent on multisensory feedback; developing fine motor and cognitive abilities in typical children.

Methods: Fourteen children with hemiplegic cerebral palsy (HCP) were invited to participate in a musical program with 60-minute musical literacy group lesson and 60-minute individual piano lesson once a week for 40 weeks. Each child had a keyboard of 30-minute daily training home. Wechsler Intelligence Scale for Children (WISC-IV) and Child Behavior Checklist (CBCL) were used pre and post intervention. Wilcoxon test and Spearman coefficient were used on statistical analysis, considering p<0.05.

Results: Six males were the ones that concluded study acquiring musical literacy. The others 8 gave up the program. Mean age was 10.3±1.5 years-old (7.6 to 12.2). Better was seen on picture concepts, coding, comprehension, symbol search, picture completion, information, arithmetic, word reasoning, perceptual reasoning, processing speed and full scale on WISC IV (Table 1). It was not observed changes on CBCL.

Conclusion/Discussion: A longitudinal study of the effects of music training on cognition in HCP showed improvement in verbal comprehension, perceptual reasoning and processing speed. We can demarcate IT as a better participation using CBCL. IT is a pleaded activity, of low cost and effective. The largest difficulties found were to stimulate more children in study participation, because of the families’ low income/education and the understanding of the IT impact on child’s functionality and social participation.

NEUROREHABILITATION / Poster Presentations
Results: Sixty-six patients concluded all evaluations. Level I GMFCS-ER was related with younger age of gait acquisition, higher child education (CE) and better lower extremity muscle strength. Level I MACS was related with higher CE, better initial UPRS and current Mini-Mental, MVHT. SCALE, SCAUE, self-care, communication, cognition and total WeeFIM scores. Second level I and II CFCS had gain on UPRS, while III and IV lost. Patients with pre natal insult and atrophy had worse GMFM-E. GMFM-E>95% patients had younger sit and gait acquisition age, higher CE, better initial UPRS and higher currents head circumference, Mini-Mental, muscle strength, MVHT, SCALE, SCAUE, hand Brunnstrom, PRS, GMFCS-ER, MACS, CFCS and WeeFIM. There was positive correlation among PRS gain and better FMs levels.

Conclusion/Discussion: Children with better initial UPRS, current Mini-Mental and education were bet responders. Patients with pre natal insult and microcephaly had worst results.

P219-6
LONG TERM FOLLOW-UP OF HEMILEGIC CEREBRAL PALSY TREATED WITH BOTULINUM TOXIN TYPE A: FACTORS OF PARTICIPATION IN LIFE SITUATIONS
Lucia Helena Coutinho dos Santos1, Marise Bueno Zonta2, Sandra Regina BaggioMuzzolon1, IsacBruck1. 1Universidade Federal do Paraná, Brazil; 2Hospital de Clínicas da Universidade Federal do Paraná, Brazil

Introduction: Participation in life situations is an important goal in children with hemiplegic cerebral palsy (HCP), which were submitted a multiple-interventions, including botulinum neurotoxin type A (BoNT-A).

Methods: Cross-sectional study in HCP cohort treated with BoNT-A. Data obtained from charts and clinical evaluations. Child Behavior Checklist (CBCL) was used as participation in life situations. All statistical tests considered p<0.05.

Results: Sixty-six patients concluded all evaluations. Patients classified as normal in Activities scale on CBCL had younger seat acquisition and better Mini-Mental, self-care, communication, cognition and total WeeFIM scores and verbal and total IQ. Patients with perinatal insult were predominantly classified as normal in Activities CBCL. Children from families with full disability pension, more educated mothers and who lived in Curitiba were normal in Activities CBCL. Patients with varo foot were worse in Activities CBCL. Patients classified as normal in Social CBCL had early gait acquisition. Patients normal in Academic CBCL had better Mini-Mental, self-care, communication, cognition and total WeeFIM scores and verbal and total IQ. Those classified as normal in Total Competences CBCL had better scores in initial PRS and UPRS, and better current Mini-Mental, SCAUE and self-care, communication, cognition and total WeeFIM scores. Second offspring children had better Total Competences on CBCL.

Conclusion/Discussion: HCP with better function and independence had more participation in life situations. Low income, mother education, third or more offspring, pre natal insult and varo foot were factors of unfavorable prognosis.

P219-7
LONG TERM FOLLOW-UP OF HEMILEGIC CEREBRAL PALSY TREATED WITH BOTULINUM TOXIN TYPE A: EPILEPSY IMPACT
Lucia Helena Coutinho dos Santos1, Amolfo de CarvalhoNeto1, Marise Bueno Zonta2, Sandra Regina BaggioMuzzolon1, IsacBruck1. 1Universidade Federal do Paraná, Brazil; 2Hospital de Clínicas da Universidade Federal do Paraná, Brazil

Introduction: The major treatment goal for cerebral palsy children is to provide independence, mainly in those treated with botulinum neurotoxin type A (BoNT-A). Comorbidities, as epilepsy, are common and cause negative impact on treatment results.

Methods: Cross-sectional study evaluated clinical measures, quality of life and biopsychosocial profile (CBCL) among patients with hemiplegic cerebral palsy (HCP) treated with BoNT-A in a cohort study. Data were obtained from charts and by actual evaluation. All patients had encephalic magnetic resonance image (EMRI) and Wechler Intelligence Scale for Children (WISC-III). Fisher test, Chi-square, Mann-Whitney, scale for Children (WISC-III). Fisher test, Chi-square, Mann-Whitney, ANOVA, Kruskal-Wallis and Spearman coefficient were used and all analyses used a significance level of p<0.05.

Results: Ninety-nine patients were consecutively enrolled and sixty-six concluded all evaluations. Mean age was 133±55.79 months (57 to 268). Male predominates (60%). Mean age of follow up beginning was 52.1±42.7 months (4 to 188). Fifty-one (77.3%) were level I on GMFCS-ER and remaining level II. Eleven patients (16.7%) had their EMRI classified as Maldevelopment (MD), 24 (36.4%) Periventricular Atrophy, 22 (34.6%) Cortical/Subcortical Atrophy (CSA), 3 (4.5%) Miscellaneous and six (9.1%) as Normal. CSA patients had epilepsy more frequently and presented tendency to statistical significance of worse distal upper extremity muscle strength. Patients with epilepsy and MD had lower scores in self-care, sphenkikers control, communication and total on WeeFIM and in cognition and symptons on PODCI.

Conclusion/Discussion: Epilepsy interferes on treatment results in a cohort of HCP treated with BoNT-A, mainly in patients with EMRI showing MD. This group presents worst functional independence and quality of life.
training using FORAMENRehab software (Sarajuuri et al., 2000), adapted for children by authors. Trainings occurred twice a week during 5-week period following strict protocol. Intervention addressed four aspects of attention – sustaining, focusing, complex attention and tracking. For objective outcome evaluation children performed baseline tasks before and after the intervention. Subjective outcome was evaluated by parents’ ratings.

**Results:** Objective effect of rehabilitation was remarkable. Wilcoxon signed-rank test confirmed improvement in sustained attention (faster solving, Z = -2.366, M1 = -4.00, M2 = 1.00, p = 0.018) and complex attention (increased correct responses, Z = -2.001, M1 = 0.00, M2 = 3.5, p = 0.028 and decreased mistakes, Z = -1.992, M1 = -4.00, M2 = 1.00, p = 0.046). Subjective evaluation of training effect showed positive behavioral changes. Children were more tranquil, diligent and less distracted. Reading, writing, mathematics, socialization and visuomotor skills improved. Besides, parents recommended the intervention to other patients.

**Conclusions:** Our multifaceted neurorehabilitation design with FORAMENRehab is effective for children with PE or mTBI. Intervention effectiveness is best confirmed in combination of objective testing and subjective evaluations. Intervention combines principles of holistic rehabilitation, modern computer-assisted neuropsychological rehabilitation and individual approach. Baseline assessment tasks could also be used as a diagnostic tool for describing attention dysfunctions.

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**P221 COMPARISON OF THE DENVER AND TIMP TESTS IN INFANTS WITH CYTOMEGALOVIRUS INFECTION**

Jolanta Stepowska,1,2 Katarzyna Rudzen,3 Dorota Dunin-Wasowicz.1 1Neurology, Epileptology and Paediatric Rehabilitation Department The Children’s Memorial Health Institute Warsaw, Poland; 2Rehabilitation Department Józef Piłsudski University of Physical Education, Warsaw, Poland, 3Rehabilitation Department Maluch, Warsaw, Poland

**Objective:** Infection with human cytomegalovirus (HCMV) is the most frequent congenital viral infection. Central nervous system involvement and damage is especially intensive in early primary infection. Infants with cytomegalovirus infection are especially at risk of cerebral palsy, so early rehabilitation intervention is crucial. Only a few diagnostic tests are available for evaluation of the psychomotor development in very young infants. The comparison of the two commonly used diagnostic tests was performed.

**Material and methods:** In 24 infants (9 premature) with congenital cytomegalovirus infection at the age 2 to 4 months estimation of the early GMs in preterm infants may be a good prognostic factor for abnormal psychomotor development.

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**P222 CORRELATION WITH INTRAVENTRICULAR HEMORRHAGE GENERAL MOVEMENTS QUALITY IN PRETERM INFANTS—CORRELATION WITH INTRAVENTRICULAR HEMORRHAGE**

Jolanta Stepowska,1,2 Katarzyna Rudzen,3 Dorota Dunin-Wasowicz.1 1Neurology, Epileptology and Paediatric Rehabilitation Department The Children’s Memorial Health Institute Warsaw, Poland; 2Rehabilitation Department Józef Piłsudski University of Physical Education, Warsaw, Poland, 3Rehabilitation Department Maluch, Warsaw, Poland

**Objective:** General movements (GMs) are part of spontaneous activity generated by the central nervous system. Abnormal general movements indicate impairment of the central nervous system. The aim of the study was to assess the quality of general movements in preterm infants and to estimate correlation between intraventricular hemorrhages (IVH) and quality of general movements.

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**P223 INTRATHecal BACLOFEN PUMP: KSA EXPERIENCE**

Tamer Rizk & Yasser Awaad. King Fahad Medical City, Riyadh, Kingdom of Saudi Arabia

**Abstract:** Increasingly, spasticity is managed with surgically implanted Intrathecal Baclofen pumps. Intrathecal Baclofen pump revision surgery unrelated to programmable pump end-of-life is not uncommon, requiring special attention during pre-, intra-, and post-operative management. We aimed to identify and describe complications of Intrathecal Baclofen pump as well as to report avoidance and management of complications.

**Methods and Materials:** Through 2007- 2010, at the department of neurosurgery, King Fahad Medical City, Intrathecal Baclofen pumps were implanted in 43 patients; 21 children versus 22 adults; 14 revision surgeries were performed in 10 patients. We evaluated reasons for revision surgeries and diagnostic work-up requirements.

**Results:** Ten out of 43 primary-implant-patients required 14 revisions; 8 patients had only 1 revision procedure while 2 patients had multiple revision procedures. Complications ranged between: Implant infections in 8 cases; 1 paternal cause, 3 post dehiscence, 1 post resection, 1 post trauma, 1 post hematoma and 1 pure infection. CSF leakage in one case.

**Conclusions:** Intrathecal Baclofen pumps, although very gratifying, have a high, technique-related complication incidence during implant life. Meticulous technique, high clinical suspicion, appropriate work-up, and timely surgical management can reduce surgical complications of Intrathecal Baclofen pump implantation.