DEVELOPMENT, COGNITION & PSYCHIATRY

P39

ADAPTIVE BEHAVIOR AND DEVELOPMENTAL LEVEL IN PRESCHOOL CHILDREN REFERRED FOR POSSIBLE AUTISM SPECTRUM DISORDER

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A comprehensive evaluation of adaptive and cognitive functioning is very useful in making a reliable diagnosis of autism spectrum disorders (ASD).

Objectives: 1. To explore the relationship between adaptive behavior, developmental level and autistic symptom severity in a group of children referred for possible ASD evaluation; 2. To evaluate the existence of a specific adaptive behavior performance profile for children with ASD in comparison to other developmental disorders.

Methods: Sixty children (age range: 24 to 62 months) were assessed for autistic symptoms, intellectual functioning, and adaptive behavior. Diagnosis of autism was based on DSM-IV criteria, developmental and medical history, and the results of direct assessment and parental interview.

Results: No significant differences were found between the ASD and the non-autistic developmental disorder groups in sex or chronological age. Children on the ASD group showed a significantly lower Visual Reception Mullen Score. On the Vineland Adaptive Behavior Scales there were no differences in the Daily Living or Motor Skills standard scores; however children on the ASD group performed significantly lower on the Socialization and Communication scores. A differential adaptive behavior performance profile was seen on the ASD group in which Motor Skills > Daily Living Skills > Socialization > Communication different from the adaptive behavior profile from the non-autistic developmental disorder group: Socialization > Motor Skills > Daily Living Skills > Communication.

Conclusions: Significant adaptive deficits, with a characteristic profile, were observed in ASD in comparison with peers with non-autistic developmental disorders (even when matched for cognitive level).

P40

BLINDNESS AND AUTISM SPECTRUM DISORDERS (ASDS)

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Methods: The prevalence of ASDs was assessed in a school for the blind: 38 children were examined in two stages: (1) formally, using 3di (*) Interview (validated for research) (2) informally through clinical evaluation in the classroom.

Results: Of 38 children, 25 (***group 1***) had severe to profound Congenital Blindness (CB) and 13 (***group 2***) had severe to profound visual impairment or acquired blindness. Fourteen (56%) of the ***group 1*** met the criteria for ASDs, while only one girl of the ***group 2*** met the diagnosis of Asperger disorder (***p=0.0039)***. Four of the 14 children (28.5%) with Autism had a history of regression before age three. Four of the remaining 11 children with CB (without autism at the moment of the evaluation) have had a complete clinical picture of the disorder before age five and improved dramatically after that age.

Conclusions: There is a high prevalence (56%) of ASD in Congenital Blindness (CB) and not in Acquired Blindness or Visual Impairment. The etiology of CB was not (in this population) a determinant factor of ASDs. Four different neurodevelopment courses are seen in CB: (1) Classic ASDs evolution (the most frequent) (2) Normal development (3) Autism regression and (4) Autism recovery (rarely seen in sighted children).

P41

ATENTION DEFICIT HYPERACTIVITY DISORDER AND VIDEOGAMES: WHICH GAMES DO THEY PLAY WHEN THEY PLAY?

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Objective: to describe the amount of hours spent and the type of video games chosen by children with Atention Deficit Hyperactivity Disorder (ADHD) diagnosis.

Material and Methods: Descriptive cross sectional study. We selected patients 5 years and older seen at the child neurology department, between January and August of 2013. A phone interview was conducted regarding the hours spent in video games and its nature (action, violence, sports, strategy).

Results: 80 patients were included. Mean age was 9, 5 years; 40% had ADHD diagnosis, the others presented other diagnoses (dyslexia, dyscalculia, language disorder, others). 87% of the patients with ADHD play some kind of video game while 62% of patients in the other group do so (p=0, 02). In average the children with ADHD used computer and videogames on a daily basis 1.3 hours and 0.8 hours respectively. The favourite games were: Action 31%, Violence 15%, Sport 31%, Strategy 28%, no differences with the group of patients without ADHD were observed. Only 13% of the ADHD patients did not play video games.

Conclusion: We observed that 87% of the children in the ADHD group played videogames, 40% more children compared to the other group. No differences were found regarding the hours spent per day or the type of game chosen. Since ADHD population need more time to study, we should encourage them to improve the way they administer their time. Besides, videogames could be a good strategy to improve attention an executive functions in ADHD if chosen properly.

P42

ASSESSMENT OF WORKING MEMORY AND ITS RELATIONSHIP TO THE GENERAL INTELLECTUAL PERFORMANCE IN PATIENTS WITH TUBEROUS SCLEROSIS ASSESSED BY THE WECHSLER INTELLIGENCE SCALE

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The Tuberous Sclerosis is a neurocutaneous autosomal dominant syndrome with varied clinical expressions. Most patients present alterations in brain function, which highlights the cognitive assessment as an important tool for evaluating the mentioned alterations. The present work aims to relate the general intellectual performance to the performance of working memory in patients with Tuberous Sclerosis. 12 patients were evaluated; both sexes aged between 6 years and 0 months and 29 years and 11 months. For cognitive assessment, were used the Wechsler Intelligence Scales Third Edition, for children and adults. From this assessment the general intellectual level and performance on Digits subtest of each participant were obtained. Regarding the general intellectual level the results show that 33.3% of participants are in a lower average rating, 16.7% are at average, 41.7% borderline performance and 8.3% are at extremely below expectations. Regarding the performance in working memory assessed by Digits subtest, 100% of participants showed lower performance, that is, below the expected average for the corresponding age group. In view of this, it is concluded that the patients evaluated had low performance in working memory, even patients with general intellectual performance within or close to the expected average. The influence of low working memory performance is observed in academic and social spheres, being this difficulty one of the factors for high rates of school failure, learning difficulties and daily difficulties lives, such as frequent forgetfulness, among others.

P43

EFFECTS OF STIMULANT MEDICATIONS FOR ATTENTION DEFICIT/ HYPERACTIVITY DISORDER: STUDY OF 452 BRAZILIAN PATIENTS

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Introduction: Methylphenidate and lisdexamfetamine are available medications in Brazil for treating Attention Deficit/Hyperactivity Disorder (ADHD). This study aimed to evaluate these drugs concerning effectiveness and adverse reactions.

Methods: 452 patients, from 4 to 18 years old, medicated with methylphenidate immediate release (MPH-IR), methylphenidate Spheroidal Oral Drug Absorption System (MPH-SODAS), methylphenidate Osmotic release oral system (MPH-OROS) or lisdexamfentaime (LIS) participated in the study. Parents answered a questionnaire about medication, adverse effects, academic improvement and general improvement.

Results: Among methylphenidate patients (n=445), 64% used MPH-IR, 14% MPH-SODAS e 19% MPH-OROS regularly. During treatment, 55% percent presented one or more adverse effect. The most frequent effects were loss of appetite (26%) and anxiety/ irritability (15%) and 1.8% presented severe reaction, such as generalized seizure or dyskinesia. Of all patients, 25% suspended the medication, being 86% due to adverse reactions; 76.5% presented academic improvement, without significant difference among MPH formulations. Concerning general improvement, better rates were found for MPH-SODAS and OROS in comparison to MPH-IR (75.4% and 73.6% versus 55.8, $p<0.05$). All lisdexamfetamine patients (n=7) presented at least one adverse effect. The most prevalent were loss of appetite (n=5) and tics (n=4). Two patients suspended the medication due to adverse effects. Four patients presented general and academic improvement.

Conclusion: Despite the frequency of side effects, methylphenidate showed satisfactory results for ADHD in a large sample. Although this study had a limited number of patients using lisdexamfetamine, this medication also demonstrated interesting results concerning general and academic improvement.

P44

COGNITIVE FUNCTIONS AND EMOTIONAL ASPECTS IN CHILDREN WITH ATTENTION DEFICIT AND HYPERACTIVITY DISORDER

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Abstract: This study compared the performance in cognitive functions, emotional aspects and comorbidities of children with ADHD and children without learning disabilities and/or attention deficits. 41 children, aged between 8 and 14 years old, were divided into Study Group (SG– 21 ADHD children) and Control Group (CG – 20 children without attention and/or learning difficulties complaints).

The instruments used: Wechsler Intelligence Scale for Children (WISC III); Cancelation Test; Trail Making Test, Stroop Color Word Test, Tower of London, Wisconsin Card Sorting Test; Self-Esteem Multidimensional Scale; Self-Concept Scale for Children and Youth, Children's Depression Inventory, Child Behaviour Checklist (CBCL). In cognitive evaluation, children with ADHD showed poorer performance on tests of visual and auditory sustained attention, alternating attention, visual selective attention, immediate auditory memory, mental flexibility, planning capacity and anticipation of actions. As for the emotional aspects, SG presented poorer performance on self-esteem and social self-concept, but in general results of self-concept there was no difference between the groups. There were no significant differences in depressive symptomatology in the general result, but SG showed greater impact on performance self-evaluation, in feelings of guilt and sleeping difficulties. Regarding comorbidities, SG presented worse results as the overall result in CBCL. There was no significant correlation between the emotional and cognitive functions among children with ADHD in the general evaluation of the results. The data suggest that children with ADHD had underperformed in visual attention, auditory memory, executive functions, worse self-esteem, feelings of guilt, sleeping difficulties and more comorbidities, mainly related to Attention and Social Problems.

P45

PANDAS DIAGNOSIS IN THE ULTIMATE CONTEXT OF PEDIATRIC NEUROLOGY

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Introduction: PANDAS is defined as Pediatric Autoimmune Neuropsychiatric Disease Associated with Streptococcus Infection and is a current topic still described with disagreements in some aspects. Knowing that GABHS is a common agent that causes pharyngitis in children and OCD and tics are prevalent at this age group, this study becomes relevant.

Methods: Forty articles from revised, cross-sectional, and case-control nature, which only human-being studies were selected. The Portuguese and English languages were utilized, and the research timeframe is between 1995 and 2012.

Results: The term PANDAS was first mentioned by Swedo in 1996 and describes a childhood condition in which tics and OCD are triggered by GABHS. Its physiopathology involves molecular mimicry, what is explained by a cross reaction between basal ganglia cells and antibodies against the antigen epitope. Thus, the auto-antibodies' serum levels and protein CaM kinase II; the basal ganglia enlargement observed in magnetic resonance images; and the streptococci confirmation by serum levels of ASLO and anti-DNase are useful in the diagnosis. Nevertheless, its treatment is still questioned because autoimmunity can be treated with PMF and IVIM, but prophylaxis cannot be utilized for the infection. In the short term, Penicillin is indicated to eliminate the infectious agent if streptococci is confirmed.

Conclusion: The clinical characteristics concerning PANDAS must always be taken into consideration when approaching patients with tics and/or OCD in order to perform a premature diagnosis. Regarding its prevention, studies approaching antibiotic prophylaxis are still required.

P46

APPLICATION OF YOUTH SELF-REPORT FOR AGES 11-18 FOR ASSESSMENT OF MENTAL DISORDERS AMONG TEENAGERS FROM SCHOOL

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Introduction: Mental Disorders (MD) during adolescence are frequent in teenager age causing suffering and dysfunction on the psychosocial and educational development of adolescents. The aim of this survey was to detect the prevalence of MD among adolescents of 6th to 9th grade by application of ***Youth Self-Report for ages 11-18***(***YSR for Ages 11-18***).

Methods: after parents and adolescents signed an Free Consent Term, the questionnaires ***YSR for Ages 11-18*** were obtained from 2545 teenagers from 26 publics schools of Cascavel City-PR-Brazil. This survey had the approval of the Ethics Committee of Western Paraná State University under protocol CR number 955/2010

Results: 2545 pupils from 26 publics schools filled ***YSR***, age ranged from 11 to 14 years-old (mean: 11, 57 years), being female: 1609(63.2%) and male: 936(36.7%). About this total, 1039(40.8%) girls and 640(25.1%) boys were normal. MD syndromes observed on females were: Anxious/depressed: 231 cases, aggressive behaviour: 104, social problems: 74, attention problems: 48, thought problems: 42, somatic complaints: 36, withdrawn: 25 and rule-breaking behaviour: 10. On males: Anxious/depressed: 104 cases, somatic complaints: 59, social problems: 37, attention problems: 28, thought problems: 23, aggressive behaviour: 17, withdrawn and rule-breaking behaviour: 14 cases each.

Conclusion/Discussion: Rating scales of mental symptoms can be helpful in assessing adolescents patients, as ***YSR for Ages 11-18.*** This study showed that anxious/depressed was the most frequent as girls as boys, followed to aggressive behaviour on females and somatic complaints in males. Prevalence de anxious/depressed (13, 1%) was highest that the rate of depression in literature (6%).

P47

EARLY-ONSET SCHIZOPHRENIA ASSOCIATED WITH CEREBRAL PALSY AND AUTISM SPECTRUM DISORDER: A CASE REPORT

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Introduction: Schizophrenia is a serious psychiatric disorder characteristically marked by withdrawal from reality, emotional imbalance and regressive behaviour. It is estimated that about 0.1 to 1% of schizophrenia cases is initiated before age of 10. The Autism Spectrum Disorder (ASD) is characterized by impaired social interaction

and communication, and restricted interests and repetitive behavior. Perinatal injuries are an important risk factor for psychiatric disorder.

Patients and Methods: Case report of a teenage evaluated at four, eight and 14 years diagnosed as mild cerebral palsy (CP) diparetic spastic associated with the ASD and schizophrenia.

Results: ASD diagnosis was performed at age of four by Autistic Traits Scale and the DSM IV - TR criterias. Intellectual Assessment in nonverbal test (Columbia Mental Maturity Scale) were within the normal range. At eight she showed first signs of schizophrenia characterized by behavioral regression, increased isolation and detachment from reality. On examination by the same examiner at age 14 shows apathy, not understand simple orders, language restricted to a few sentences without communicative intent, frankly worse than age 4, intense stereotypies. Severe deficits in adaptive behavior on Vineland. She didn't understand any verbal or nonverbal standardized testing.

Conclusion: ASD and schizophrenia are characterized by impairments in social interaction. It is known that CP affects the developing brain and increases the risk for both conditions which significantly worsens the prognosis of patient function.

P48

TWIN-TWIN TRANSFUSION SYNDROME: FOLLOW UP OF INFANTS TREATED WITH LASER SURGERY

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Introduction: Despite improved perinatal survival following fetoscopic laser coagulation (FLC) for twin twin transfusion syndrome (TTTS), monochorionic diamniotic twin pregnancies complicated by TTTS have poorer perinatal outcome as compared with uncomplicated monochorionic diamniotic pregnancies. Understanding the risk factors for neurological development is a major concern of clinical research.

Objective: To assess the neurodevelopmental functions of survivors of TTTS treated by FLC and to verify the influence of risk factors on neurodevelopment.

Methods: This was a prospective and longitudinal study. The sample comprised 29 monochorionic diamniotic twins who underwent FLC for treatment of TTTS. Bayley Scales of Infant and Toddler Development Screening Tests were used. The infants were assessed twice, first evaluation (1 to 6 months) and second evaluation (7 to 12 months). Prenatal, perinatal and postnatal information were obtained.

Results: Inappropriate performance in both evaluations was around 20.7% (cognitive domain), 10.3% (receptive communication), 24.1% (expressive communication), 27.6% (fine motor) and 27.6% (gross motor). In multivariate analysis, infants whose mothers had lower parity and higher gestational age at surgery showed higher risk of cognitive disturbances. Moreover infants whose families had lower economic income and infants classified as donors showed higher risk of expressive communication disturbance.

Discussion/Conclusion: Although most of the children had adequate development what is in favor of a good intrauterine treatment (FLC), the identified risk factors (maternal parity, gestational age, economic income and fetal donor) negatively impacted cognitive and expressive communication; therefore, these children require monitoring for neurodevelopmental achievement.

P49

MYELOMENINGOCELE: PSYCHIATRIC SYMPTOMS AND NEUROPSYCHOLOGICAL PROFILE

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Introduction: myelomeningocele (MMC) is a closure defect in neural tube, which has been associated with various forms of cognitive and behavior impairments. Studies indicate that hydrocephalus is not sufficient to explain the observed deficits and a possible cause for those deficits would be the Chiari malformation type II (MF-CII).

Patients and Methods: Ten children with ages between 6 and 13 years old with MMC and MF-CII were evaluated using a neuropsychological test battery composed of 15 subtests of the Wechsler Intelligence Scale for Children 4th Edition (WISC - IV), Wisconsin Card Sort Test (WCST), Rey Complex Figures Test and Pediatric Symptom Checklist (PSC).

Results: Four patients had IQs below 70. In neuropsychological assessment all mean scores were below the normative sample mean, and lower scores were found on comprehension skills social rules, sustained attention and mental flexibility. No patients achieved scores above the cut-off score in the PSC for psychiatric disorders, but a Spearman correlation was found linking symptoms reported by parents and the child's age in the amount of 0.64 ($p < 0.05$), indicating that the psychological impact of the disease increase with age. Five patients presented in the clinical examination signs and symptoms consistent with anxiety disorders according to the DSM-5, indicating that the scale had low sensitivity in this group.

Conclusion: The MMC is a multifaceted disease that includes cognitive and affective aspects and it is important an interdisciplinary rehabilitation model and validated instruments for this population.

P50

INFLUENCE OF CONGENITAL HYPOTHYROIDISM ON PSYCHOMOTOR PERFORMANCE IN INFANTS

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Congenital hypothyroidism (CH) is caused by a thyroid hormone deficiency, which is present at birth, resulting in a reduction in metabolic processes that influence the development of the central nervous system. The aim of the present study was to analyze psychomotor performance in infants with CH in follow up at a newborn screening reference center (NSRC) in Brazil.

Methods: An observational, case-control, cross-sectional study was carried out involving 48 infants with CH (mean age: 10 ± 0.7 months) and 37 without CH (mean age: 11 ± 0.7 months). The Bayley Scales of Infant and Toddler Development III were used for the evaluation, which classify performance as competent (low risk for delayed development), emergent risk or at risk. The chi-square test was used to compare performance categories between groups, with the level of significance set to 5% ($p < 0.05$).

Results: No significant differences were found between groups regarding psychomotor performance on the cognitive, expressive language, fine motor skill or gross motor skill scales ($p > 0.05$), whereas a significant difference was found regarding receptive language ($p = 0.019$). Based on the present findings, children with CH are at greater risk of delayed development in receptive language skills. Moreover, the occurrence of a performance at risk only in the CH group suggests that screening should be used for developmental problems, as well as routine follow up allows early detection and intervention.

P51

INTUITIVE PHYSICS IN HIGH FUNCTIONING AUTISTM

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Autism is a neurodevelopmental disorder characterized by deficits in social interaction, communication and narrow interests and repetitive behavior. A recent cognitive model suggests the empathizing-systemizing theory that explains the social and communication difficulties by reference to delays and deficits in empathy, whilst explaining the areas of strength by reference to intact or even superior skill in systemizing. The intuitive physics test is an instrument developed to assess systemizing. The aim of this study is to analyse the evidences of validity of this test in Brazilian children and to measure the performance of high functioning autism in this test and the Battery of Reasoning Tests. Among the 330 schoolchildren there was observed statistically significant difference between the scores of the two genders, with superior performance in boys, as well as an increment in scores in accordance with age and grade in school. The best performance occurred in the children of private school. Between the clinical group (composed of 28 high functioning autism individuals) and the control group (composed of 28 from private schoolchildren),

the latter showed the best performance in the intuitive physics test as well as in the mechanical reasoning test. The psychometric properties of the test showed a low consistency index. The performance among school participants changed according to the development, which may reflect not only cognitive development but also their everyday experience and school education. Otherwise, the clinical group didn´t have better performance in the intuitive physics test when compared with the control group

P52

AUTISM SPECTRUM DISORDERS IN A BRAZILIAN DEVELOPMENTAL DISORDERS PROJECT

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The Pervasive Development Disorders Laboratory is a multidisciplinary diagnostic service in the Psychology Institute of the University of Sao Paulo which purpose is the clinical study of Autism Spectrum Disorders (ASD). This is a complex neurodevelopmental condition with great impact on lifelong and prevalence around 1:110 births. Early diagnostic and intervention implies in a better prognosis. Between 2005 and 2012, 447 patients was referred from primary attention child services of Sao Paulo and others states. After medical and neuropsychological screening, it was proceeded the evaluation in accordance with the multiaxial system (DSM-IV-TR), using specific autism and developmental scales, neurological examination and neuropsychological tests. From the 447 assessments, 128 (28.6%) patients received diagnosis of ASD, in a ratio of 2, 6 boys: 1 girl. The age varied between 2 and 42 years (average of 9, 2 ± 6, 3). The main complaints had been global development or language delay (12% and 11%, respectively), hyperactivity (10%), learning difficulties (10%), social deficits (11%) and behavioral problems (7%). Only 22.7% had ASD as initial hypothesis. There was intellectual disability and/or deficit in the adaptive behavior in 50% of cases. The main medical condition observed was epilepsy and previous prematurity. This survey evidences the lack of prepared services of child mental health for the accomplishment on the diagnosis of ASD and, over all, in an early age. Although they have come of primary health services, only less than one quarter of patients had the suspicion of ASD.

P53

DELIVERY AND BREASTFEEDING IN AUTISM

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Introduction: Autism spectrum disorders (ASD) are a group of biologically based neurodevelopmental disorders characterized by impairments in three major domains: socialization, communication, and behaviour. Although autism may be present in children with tuberous sclerosis complex or Fragile X, most of the cases are not related to a known genetic disorder. The prevalence of ASD has increased since the 1970s. Could this increase be related to a non-genetic factor?

Methods: To explore the association of some perinatal factors we devised a retrospective case control study.

Results: We have interviewed 57 mothers of children aged 2 to 14 years-old. Thirty one children had the diagnosis of autism, with at least six criteria of the DSM-IV, and 26 had normal neurodevelopment and had no criteria for the diagnosis of autism (control group). Tuberous sclerosis, Rett or Fragile X cases were not included. In each group, 81% of children were male and 19% were female. The mean age was 6.42 years in the autism group and 6.35 in the control group. We found a greater proportion of caesarean section in the autism group (OR 32.39, 95% CI: 1.04-10.07) and a lesser proportion of breastfeeding in this group (OR 0.58, 95% CI:0. 05-6.78).

Conclusion: Exposure to caesarean section is associated with higher odds of autism. We found that some factors might have a protective impact for autism, particularly regarding labour.

P54

SCHOOL PHOBIA SECUNDARY TO BULLYING BY GIGANTE NEVUS CONGENITAL – AMAZONAS' CASE REPORT

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TLS, female, 6 years old, born in Nhamundá-Amazonas, 3rd mother's pregnancy, who did not receive prenatal care, were delivered vaginally, at home, term, without hospital care in pre-, peri-and postnatal. The mother noted color changes and increased hairiness in the cervical region, dorsal and proximal third of both arms. The child attends the 1st year of regular school with good grades. Evolved with apathy, tremors and episodes of uncontrollable crying when pressed to go to school, because there she was the victim of psychological abuse from colleagues, generating emotional instability, generalized anxiety and school phobia (BULLYING).

Discussion: Recent studies reveal that the behavior associated with "jokes" where the focus is to uplift the defects or cause physical aggression repeatedly a victim, which until very recently was considered harmless, today is known as bullying. Physical assaults may result in serious consequences to the children and adolescents' mental development, resulting from decrease in self-esteem even, in extreme cases, suicide and other tragedies. School phobia is classified as an anxiety disorder and is an exaggerated fear about going to school that the child feels

Conclusion: School phobia is a psychiatric disorder that occurs during school hours and should not be overlooked either treated with anxiolytic medications, which have action on the central nervous system, without prior a complete organic and psychological research trying to identify a cause tractable with environmental treatment.

P55

REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION OF DORSOLATERAL PREFRONTAL CORTEX IN ADOLESCENT DEPRESSION: CLINICAL AND NEUROCHEMICAL EFFECTS

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Major depressive disorder (MDD) is often refractory with high mortality in adolescents. Dorsolateral prefrontal cortex (DLPFC) repetitive transcranial magnetic stimulation (rTMS) improves MDD in adults by undetermined mechanisms. We hypothesized that DFPLC rTMS would improve symptoms and increase regional glutamate in adolescent MDD.

Methods: We report the first six cases (four females, 15-21 years, mean IQ 102.3±3.39) with treatment-resistant MDD in an open-label rTMS clinical trial. Neuronavigated rTMS was applied to the left DLPFC for 15 consecutive weekdays (120% RMT, 40 pulses over 4 seconds (10 Hz), inter-train interval 26 seconds, 75 trains, 3000 pulses). Treatment response was defined as >50% reduction in Hamilton Depression Rating Scale scores (Ham-D). Secondary outcomes included depression (BDI), anxiety (HAM-A), neuropsychological and safety/tolerability evaluations. Short echo (TE=30msec, TR=2000msec) proton magnetic resonance spectroscopy (1H-MRS, 4.5 cc) quantified DLPFC glutamate (LCModel) before and after treatment.

Results: Procedures were well tolerated with no serious adverse events. Four patients (two females; two males) responded with mean 68% decrease in Ham-D (30.5±5.45 to 9.8±1.26). BDI scores also decreased by 84% (37.3±4.5 to 6.0±3.37). In the two non-responders, Ham-D scores decreased 29% (31.0±7.07 to 22.0±2.83) while BDI scores increased 19% (37.5±4.95 to 44.5±9.19). Responders showed a 78% decrease in Ham-A scores (29.3±8.06 to 6.5±4.20) while in non-responders Ham-A decreased 36%. Responders had lower baseline DFPLC glutamate (9.36±1.33mmol/kg) that increased 11% post-rTMS (10.37±1.48mmol/kg). Non-responders started with higher glutamate levels which decreased by 10%.

Conclusions: rTMS appears feasible in adolescents with MDD. Possible efficacy may relate to changes in DLPFC glutamate.

P56

"IS AUTISM A CURABLE DISEASE: THE SUCCESSFUL OSHA PROGRAM FROM ALEX"

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OSHA program aims at progressing autistic children by diverting them as nearly as possible to the average normal aspects of social, communication, language and academic skills. This program started successfully in 2002. Nowadays, this program is applied successfully over many autistic children in the Specialized Child center, Alexandria, Egypt.

The criteria for inclusion in the OSHA program are:

First: the younger the age to start the better is the result (from 2-4 years old)

Second: full consent of parents for program

Thirdly: the program goes on for 11 months/ year for 1-3 years.

OSHA program starts by full neuro-psychometric assessment aiming for accurate diagnosis, assessing the severity of the disorder and giving base information for future follow up.

The assessment includes: -DS- 4 TR criteria and CARS scoring for autistic children

Criteria of OSHA treatment program

1- Severity of autism: for weekly credit hours of working

2- social defect: for diversity of specialists

3- language defect: diversity of plans

4- Learning defect: diversity of training places

5- Family role: recognition and involvement

The core of the OSHA program is: Early intervention in a Well-run program &"Multi-disciplinary team work is the key for helping autistic children to reach their potential.

P57

STUDY OF AUDITORY PROCESSING IN CHILDREN WITH AUTISTIC DISORDER

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Introduction: Autistic spectrum disorder (ASD) is characterized by abnormalities of social interactions, communication, restricted interests and repetitive behaviour. Disordered sensory reaction constitutes a striking aspect. Auditory processing disorder (APD) may contribute to their language delay.

Objective: Study the auditory processing and its correlation to language assessment in autistic children.

Cases: 30 children diagnosed with autism according to DSM-IV-TR, 23 boys and 7 girls, mean age 65.37 months.

Methods: Language assessment using Test of Acquired Communication Skills (TACS), Comprehensive Arabic Language Test (CALT). Auditory electrophysiological evaluation using auditory brainstem response (ABR), cortical auditory evoked potentials (CAEPs), results of ABR and CAEPs were compared to norms.

Results: (40%) of cases were hyper-responsive to auditory stimuli. TACS revealed that all cases failed to exceed age of 24 months in social and symbolic domain. Only 5 cases exceeded age of 24 months on language domain, and failed to reach their chronological level in CALT. In ABR, latency of wave V, interpeak latencies III-V, I-V of both ears were prolonged. CAEPs absolute N1c latency was prolonged. N1c amplitude was lower compared to norms. N1c amplitude was higher on right side. Positive correlation was detected between N1c amplitude on right side and language domain of TACS in autistic children.

Conclusions: Autistic children possess immature central auditory nervous system at brainstem and cortical levels, and right hemisphere is the dominant one in processing auditory stimuli. The more immature the auditory processing, the lower language score and more severe the abnormality of CAEPs is.

P58

PREVALENCE OF SLEEP ABNORMALITIES IN AUTISTIC CHILDREN - A CROSS SECTIONAL STUDY

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Introduction: Prevalence of sleep problems has been variably reported in autistic children (40% to 80%). Effects of poor sleep on severity of autism, behavioral abnormalities and development are enigmatic.

Methods: Sleep patterns in 71 autistic and 65 Typically Developing (TD) children aged between 3 to 10 years were assessed using Children Sleep Habits Questionnaire (CSHQ). All autistic children were evaluated with Childhood Autism Rating Scale (CARS), Development Profile 3 (DP3) and Child Behavior Checklist (CBCL). Forty-eight autistic children underwent overnight polysomnography.

Results: Prevalence of sleep problems (poor sleepers) observed on CSHQ in autistic children (71) was 77.5% (95% CI: 66.0- 86.5) and TD children (65) was 29.2% (95% CI: 18.6 - 41.8). The mean T score on CBCL was significantly higher in poor sleepers [63.9 ± 8.9 (95% CI: 60.9 - 66.8)] compared to good sleepers [57.8±11 (95% CI: 53.1 - 62.5)]. There was no significant difference in development or severity of autism between good and poor sleepers. Forty eight autistic children underwent polysomnography which revealed reduction in: Total sleep time (95.8%), Sleep efficiency (70.8%), Rapid Eye Movement (REM) duration (91.6%); Increase in: Sleep latency (41.6%), REM latency (52%), Wakefulness After Sleep Onset (WASO) > (100%), Apnea Hypopnea Index (AHI) > 1(35.4%)

Conclusion: Sleep problems are more prevalent in autistic (3/4) compared to TD children (/3). Poor sleep affects daytime behavior. All autistic children had one or more abnormalities on polysomnography.

P59

PREVALENCE OF PERVASIVE DEVELOPMENTAL DISORDERS (PDDS) IN SIBLINGS OF CHILDREN WITH PDDS: A CROSS SECTIONAL STUDY FROM A DEVELOPING COUNTRY.

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Introduction: Multiple evidence indicate a strong genetic contribution to PDDs manifesting as increased risk in siblings. However there is no Indian data available on this, hence this study was done.

Method: The study was done at tertiary care hospital in India. Patients of PDD who had siblings in the age group 2-14 yrs were approached. Siblings in age group 2-4 years were screened using Modified Checklist for Autism in Toddlers (M-CHAT), and those in age group 4-14 years were screened using Social Responsiveness Scale (SRS), parent version. For Hindi-speaking population, pre-tested Hindi translations of both the questionnaires were used. Screen positive siblings were assessed using DSM-IV criteria by a Developmental Pediatrician. Risk of PDD in siblings was correlated with various familial and disease characteristics of the index case.

Results: 204 siblings (104 females) were screened (34-MCHAT and 170-SRS). 13 were screen positive. Three were lost to follow up and the remaining 10 were assessed on DSM-IV criteria and classified as PDD-NOS (3) and Autism (7). Prevalence of PDD in siblings was 4.97%. There was a significant effect of the presence of aggressive behaviour, externalizing and total problems in proband [as assessed by Childhood behaviour checklist (CBCL)], and the young age of father at conception on the sibling risk of PDD.

Conclusion: The previously described increased risk of PDD in siblings of patients with PDD is also seen in our population. Thus genetic counselling of family for increased risk and routine screening of siblings should be done for children with PDD.

P60

ADAPTATION OF THE VINELAND ADAPTIVE BEHAVIOR SCALE AND ITS USE IN 3-9 YEAR OLD INDIAN CHILDREN

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Vineland Adaptive Behavior Scale (VABS) is the most widely used scale for social and adaptive behavior, but its use in India has so far been very limited.

Objective: To translate the entire VABS II Survey Form into Hindi, adapt it for the Indian setting and use it in a sample of 3-9 year old Indian children to study relative strengths and weaknesses of subsets of Indian children.

Methods: The entire VABS II Survey Form was translated into Hindi without disturbing the structure and format. Inappropriate questions were adapted by peer group discussion and testing. Inter-rater and test-retest reliability were checked. Validity was checked by using it to differentiate typically developing children from those with parental concerns. It was then used in a sample of 3-9 year old children and

Adaptive Behaviour Composite (ABC) Scores, Domain Standard scores (DSS) and Maladaptive-v scores (MBI) were compared between different subsets of children.

Results: 44 of the 433 (10.16%) items needed adaptation but for 16 (3.6%) no satisfactory adaptation could be made. The adapted, instrument was reliable and valid. Highly significant differences were found in all domains (except MBI) with higher scores for urban vs rural children, school going vs non-school going, working vs housewife mothers and higher socioeconomic strata. Motor development was significantly correlated with weight-for-age percentage which in turn was related to the variables studied.

Conclusions: The Hindi translated and adapted version of VABS is valid and reliable and is a sensitive tool for characterizing strengths and weaknesses of Indian children.

P61

DIAGNOSTIC ACCURACY OF 'INDIAN SCALE OF ASSESSMENT OF AUTISM (ISAA)' IN 2 – 9 YEAR OLD INDIAN CHILDREN WITH AUTISM SPECTRUM DISORDER

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Introduction: Early diagnosis of Autism Spectrum Disorder (ASD) implies earlier intervention and improved prognosis. In India use of international tools is limited by expense, cultural adaptability and validation issues. An indigenous tool 'Indian Scale for Assessment of Autism (ISAA)' was developed that diagnoses and classifies ASD by severity in individuals ranging from 3 – 22 years and enables disability certification. Although validated in a large, multi-centric study, paediatricians have concerns regarding its ability to diagnose ASD in young children.

Aims: To determine diagnostic accuracy of ISAA in 2-9 year olds with ASD and determine the level of agreement with Childhood Autism Rating Scale (CARS)

Methodology: In a Hospital based observational study 2-9 year olds with age inappropriate developmental skills and/ or behaviour underwent a comprehensive assessment by an Expert. Children were diagnosed as ASD, Global Developmental Delay (GDD) / ID and Others. ISAA was administered to those with ASD and GDD/ ID (study group) by a blinded interviewer. Statistical analysis was by SPSS 19.

Results: The study group comprised of 90 children (mean age 4.5 years). Validation against Expert diagnosis revealed sensitivity and specificity of ISAA of 92.3% and 97.4% respectively. Positive and Negative Likelihood Ratios and predictive values were acceptable. The level of agreement with CARS was poor with only the cut off score differentiating between No Autism and Autism found valid.

Conclusion: Although ISAA is a free, easily available diagnostic tool for ASD with proven validity and reliability in older individuals, use in 3 – 9 year olds is limited to identification of those 'with' and 'without' ASD. Sub-categorization by severity is not satisfactory. Suitability in 2-3 year olds was inconclusive as sample size was inadequate in that age range.

P62

EVALUATION OF ADAPTIVE PROFILES OF INDIAN CHILDREN AGED 2 – 9 YEARS WITH AUTISM SPECTRUM DISORDER

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Introduction: Cognitive assessment by standard tools may prove unreliable in children with ASD as absence or underperformance of a skill may be due to lack of intrinsic initiative rather than inability. Reliability is further compromised due to cultural unsuitability and lack of validation of tools in Indian children. Adaptive function measures the performance of routine skills required for an individual's daily functioning rather than ability and is required for comprehensive assessment of children with ASD. Vineland Adaptive Behavior Scale, 2nd edition (VABS II) is commonly used to assess adaptive function. Characteristic adaptive profiles in ASD have consistently been reported from the developed world with lowest scores in Socialization, intermediate scores in Communication and highest scores in Motor and Daily Living skills. There is paucity of literature on adaptive profiles of children with ASD from the developing world.

Aims: To evaluate the adaptive profiles of 2-9 year old Indian Children with ASD

Methods: In a hospital based observational study 2-9 year olds diagnosed with ASD were administered VABS –II to determine Adaptive function. Standard scores, V scale scores and Adaptive levels were computed for all domains and sub-domains. Maladaptive Behaviour was also assessed. SPSS 19 was used for statistical analysis.

Results: Hundred children with ASD were enrolled. Boy girl ratio was 7:3 and 61% were between 2 – 5 years. Majority (81%) had severe ASD (mean CARS score 42.6) and 56% were nonverbal. Global developmental delay/Intellectual disability was seen in 99%. The adaptive profiles displayed poor performances in all domains (mean standard score < 70) with relative underperformance in Communication, Adaptive composite and Socialization domains. No significant difference was observed related to age (under or above 5 years) but found between verbal and nonverbal children. When compared with adaptive profile of American children with ASD, standard scores of Indian children were significantly lower in Socialization and Motor domains for both verbal and nonverbal groups and also Adaptive composite in the verbal group.

Conclusion: Overall standard scores are low in all domains in Indian children with ASD with lowest scores in Communication closely followed by Adaptive Composite and Socialization.

P63

THERAPY OF LOW DOSE LEVODOPA IN DEVELOPMENTAL DISORDERS IN JAPAN – A PRELIMINARY QUESTIONNAIRE SURVEY

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Background: Therapy of low dose levodopa (LDT) was proposed by Professor Segawa to ameliorate postsynaptic supersensitivity of dopamine neuron receptors in developmental disorders, including autism spectrum disorders (ASD) and Rett syndrome (RS).

Objectives: We aimed to examine the current state of LDT in Japan.

Methods: Research Group of LDT performed a questionnaire survey online in Japan in 2013.

Results: Responses were given from 51 child neurologists, 25(49%) of which tried LDT. Answers were divided into the following 4 groups according to number of patients: a, less than 5; b, 5-9; c, 10-19; d, more than 20. LDT was performed in ASD (a.9, b.4, c.4, d.2), RS (a.7, b.1, c.0, d.1), attention-deficit/hyperactivity disorder (a.4, b.0, c.2, d.1), mental retardation (a.5, b.1, c.0,d.1), and tics (a.10, b.1, c.1, d.2), respectively. LDT was done to improve hyperactivity, panic state, speech delay, obsessions, and sleep disorders, in addition to tics and dystonia. Dose of levodopa in most patients ranged from 0.5 mg/kg to 0.9 mg/kg, and 46% of prescribers used 0.5mg/kg. The age in 70% of patients was under 10 years. Short-term and long-term effect, in addition to worsening, were found for each symptom. Concomitant drugs included methylphenidate, atomoxetine, risperidone, aripiprazole and antidepressant. Supposed adverse events, hyperactivity, insomnia and involuntary movement, were observed in a few patients.

Discussion: The data suggested the possible effectiveness of LTD in developmental disorders in Japan. Prospective clinical study and animal experiments will give us a hint to determine the exact mechanisms of LTD.

P64

ATTENTION-DEFICIT HYPERACTIVITY DISORDER IN GIRLS

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Introduction: Boys are three times more likely to be diagnosed with ADHD as compared to girls. Currently, both diagnostic criteria and treatment protocols are derived from predominantly male populations. The purpose of this study was to investigate comorbid conditions and treatment in girls with ADHD.

Methods: Seventeen girls (4-15 years) with a DSM-4-TR diagnosis of ADHD were enrolled in this study. Nine women (20-48 years) who presented ADHD clinic and addressed their problem featured their childhood.

Results: Five of seventeen girls had a family history of ADHD. Nine children suffered from poor self-esteem. Maladaptive behaviors such as self-injury or aggression were exhibited in eight girls. Three girls showed tics Parental preferences limited the use of medication such as Methylphenidate (MPH) or Atomoxetine. Three girls showed significant improvement of the symptom with MPH. A girl with enuresis showed significant improvement of concentration with Vasopressin (Oral)

Conclusions: Stimulant medication is frequently avoided in management with ADHD in girls by father, worrying adverse effects. Girls and women with ADHD struggle with negative self- image for long time. Vasopressin (Oral) worked very well in the treatment of a girl with enuresis and ADHD.

P65

PERINATAL THYROID HORMONE DEFICIENCY AND ULTRASONIC VOCALIZATION IN NEONATAL AND JUVENILE RATS

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Introduction: Perinatal thyroid hormone deficiency causes irreversible damage to auditory system functions in rats 1). Hearing loss has potential to affect communication behavior. We used rats as an animal model because they emit ultrasonic vocalizations (USVs) interacting with others. We examined whether perinatal thyroid hormone deficiency affects USV emissions.

Methods: Pregnant rats were treated with the antithyroid drug methimazole (MMI) from gestational day 15 to postnatal day (PND) 21 via drinking water. The concentrations of MMI (w/v) were 0% (control), 0.01% (low dose), and 0.015% (high dose). The USVs in the neonatal rats were recorded for 5 min of maternal separation on PND 5, 10, 15, and 20. On PND 42-43, three juvenile rats of the same sex and same MMI dose but from the different litter were grouped and their USV emissions were recorded for 30 min.

Results: The MMI-treated neonatal rats produced more USVs than the control rats when they were separated from mother rats. The high-dose juvenile rats increased USV emissions compared with the control rats when they were staying together.

Discussion: Neonatal rats emit 40-50 kHz USVs on separation from mother rats 2). Juvenile rats emit 20-30 kHz USVs playing together 3). In this study, the MMI-treated rats produced more USVs than the control. They were not able to hear USVs emitted by themselves and others due to hearing loss. We conclude that perinatal thyroid hormone deficiency has potential to affect communication behavior maintained through USV emissions.

P66

EPILEPTIFORM DISCHARGES IN CHILDREN WITH ATTENTION DEFICIT/HYPERACTIVITY DISORDER

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Introduction: The aim of this study was to investigate the frequency and clinical significance of epileptiform discharges in children with attention deficit/hyperactivity disorder **(**ADHD).

Methods: We retrospectively analyzed 180 children, who were diagnosed with ADHD and had an EEG recording in Kyung Hee University Hospital. Epileptiform discharges were classified either generalized or focal. We reviewed the age, sex, type of ADHD, presence of epilepsy or not, previous history of seizures (febrile or afebrile), and IQ (intelligence quotient) score including full-scale IQ, verbal IQ, and performance IQ.

Results: Epileptiform discharges were found in 29 (16.1%) children. Of these, 15 (8.3%) showed generalized epileptiform discharges and 14 (7.7%) had focal epileptiform discharges. Rolandic discharges were found in 5 (2.7%) children. Other focal epileptiform discharges were observed in frontal (n=5), temporal (n=1), or occipital (n=3) regions. Among the children with epileptiform discharges and ADHD, 5 children had previous history of epilepsy, and 4 children developed epilepsy later. None of the children without epileptiform discharges suffered from epilepsy. Comparing the children with/without epileptiform discharges, the children with epileptiform discharges were younger (mean age: 108.9±26.1 vs. 120.8±36.8 months, p=0.022), and there were a higher portion of girls in the group with epileptiform discharges (45.0% vs. 14.4%, p=0.045).

Conclusions: We found that 16.1% (29/180) of children with ADHD have epileptiform discharges, and 31.0% (9/29) of them were associated with epilepsy. The clinical significance of subclinical epileptiform discharges in children with ADHD needs to be identified by future research.

P67

PSYCHO-EMOTIONAL AND PSYCHOSOMATIC DISORDERS IN MOTHERS OF CHILDREN WITH AUTISM SPECTRUM DISORDERS

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Introduction: Autism Spectrum Disorder (ASD) is a developmental disorder that affects the areas of language, communication and socialization. The prevalence has been increasing in the last years, been now 1:68. Although designed different types of intervention, care of caregivers have always relegated to a second level. However we believe that this condition can severely affect the emotional and physical aspects of the parents, so that the intervention should be done with them from the moment of diagnosis.

Objective: To measure the level of emotional overload and parental somatic symptoms that are reflected inn caregivers of children with ASD.

Methodology: The Zarit Symptom Inventory and SCL -90- R questionnaires were used to 13 mothers of children with ASD to assess their level of emotional and psychosomatic involvement.

Results: The test indicated high levels of emotional overload and high prevalence of headaches and low interest in sex. Conclusion: At the time of diagnosis of a child with ASD, it is important to consider the emotional aspects of caregivers, considering the high psycho-emotional impact that this disease can cause. Interventions should be planned for both children and parents, in order to mitigate the impact of the diagnosis.

P69

NEW DIAGNOSTIC METHOD OF DEVELOPMENTAL DYSPRAXIA IN CHILDREN

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In spite of the fact that Developmental dyspraxia (DD) meets quite often in neuropediatric practice, the theory and diagnostics at preschool age is a little developed and is one of difficult interdisciplinary questions of neurology and clinical psychology.

Purpose: Optimization of early diagnosis of a DD at preschool age.

Material and methods: To 626 children of 5-6-year age clinical examination regarding dyspraxia identification is conducted. Boys made 78%, girls of 22%. Research was conducted by both continuous, and selective statistical supervision. The clinical diagnosis was established according to criteria of DSM-IV. Occurrence of a DD in our research group made 9,6%. Clinical methods - neurologic and neuropsychological exam were applied; screening test on a DD (Sadovskaya J.E. et al., 2011).

Results: The Test was normed on a sample of 1,500 children between 5 and 7 years of age with the following racial and ethnic composition. By results of implementation of the combined Test for a DD from 626 children 72 (11,5%) the patient didn't cope with a task. To all 72 patients the neuropsychological examination consisting of 26 tasks is conducted, at 60 of 72 patients praxis disorders are confirmed. Test's Specificity and Sensitivity was 83%.

Conclusion: These findings strongly support the validity of our evaluation measures and the importance of using our Test alone, rather than the use of the whole battery of neuropsychological tests, to improve early identification efforts.

P70

DEVELOPMENTAL FEATURES IN CHILDREN WITH DYSPHASIA

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Background: The developmental dysphasia (DD) represents a severe speech and language disorder due to the brain language areas underdevelopment or damage in the preverbal period. DD clinical

picture needs further investigations as it may vary with age, severity and presence of delays in other domains.

Methods: Multidimensional evaluation of the developmental features in children with DD was performed by means of the parents interviews based on Developmental Profile 3 (DP-3) [1]. Age equivalents and delays in development were analysed for physical, adaptive behaviour, social-emotional, cognitive and communication skills.

Results: 120 patients with DD (89 males, 31 females) were studied aged from 3 to 4½ years and subdivided into 3 groups: (1) from 3 to 3½ years; (2) 3½ to 4 years; (3) 4 to 4½. The exclusion criteria were hearing loss, epilepsy, mental retardation, autism, psychosocial adversities.

The assessment revealed most prominent delay in communication abilities which was increased from 17,3±0,4 months in group 1 to 21,2±0,8 in group 2 and 27,3±0,5 in group 3. Physical skills acquisition was delayed for 6,7±0,3 months in group 1, 12,2±0,5 in group 2, 17,2±0,4 in group 3. Cognitive delay was equal to 6,9±0,3 months in group 1, 11,8±0,5 in group 2, 18,0±0,4 in group 3. These data comparisons between age groups were statistically significant (p<0,001). Milder delays were demonstrated for adaptive behaviour and social-emotional development.

Conclusion: Thus, speech and language development are closely interconnected with other domains and management in DD must include identification and interventions for delays in physical, adaptive behaviour, social-emotional and cognitive areas.

P71
ENDOTHELIAL ANTIBODY LEVELS IN THE SERA OF CHILDREN WITH AUTISTIC SPECTRUM DISORDERS

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Objective: The neurobiological basis of autism remains poorly understood. We hypothesized that endothelial antibodies may be associated with the physiology of autism and may predict intellectual/social developmental abnormalities.

Methods: Plasma levels of anti-endothelial cell antibodies (AECAs) were measured by ELISA in autistic children (n=55) and age-matched healthy controls (n=25).

Results: The serum level of AECAs in children with autism (N = 55, 306.4 ± 45.6 pg/mL [mean ± SEM]) was higher (two-tailed student's t-test: p = 0.05) than that of healthy control subjects (N = 25, 209.6 ± 24.6 pg/mL [mean ± SEM]). Children with severe autism exhibited significantly higher AECAs than did healthy controls (diagnoses of autistic children based on the Childhood Autism Rating Scale (CARS) score, > 40) (N = 20, 369.6 ± 65.6 pg/mL [mean ± SEM]) (p = 0.03). Disease severity and the CARS score, which represents stereotyped patterns of behavior in children with autism, were positively correlated (r^2 = 0.27, p = 0.05).

Conclusions: Elevated AECA serum levels may be implicated in the pathogenesis of autism. However, these data should be treated with caution until further investigations are performed using larger subject populations of autism.

P72
THE INFLUENCE OF FISH OIL ON NEUROLOGICAL DEVELOPMENT AND FUNCTION

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Fish oil originates from oil rich fish tissue that contains omega-3 fatty acids. These include eicosapentaenoicacid (EPA), and docosahexaenoicacid (DHA). It is recommended that healthy individuals should consume foods rich in fish oil at least twice a week. However, such intake will vary depending on cultural or personal preference, seasonality, and socio-economic status. Many families and patients with chronic neurological conditions consume supplements containing omega-3 fatty acids. We are frequently requested to give an advice and recommendations on using these agents to improve developmental and cognitive functions. Therefore, in this review we discuss the available literature supporting the role of fish oils on brain development and function. There is a growing body of literature suggesting a potential benefit of long chain polyunsaturated fatty acids in the neurological development and function. While increasing consensus is developing regarding the administered supplementation, it is still unclear if there are response variations according to the developmental stage, age, and dose. This needs to be investigated further at different development stages to include infants and young children with longitudinal long-term follow-up.

P73
EARLY WHITE MATTER EFFECTS OF ALCOHOL EXPOSURE ON THE INFANT BRAIN

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Globally, substance use disorders contribute a significant proportion of the burden of disease in low, middle, and high-income countries. South Africa has a high prevalence of alcohol use disorders and foetal alcohol syndrome. Neuroimaging studies of prenatal alcohol exposure have reported differences in structure and metabolism of many brain circuits, but little has been reported on the impact in infancy. Diffusion tensor imaging (DTI) has proved to be a useful tool for investigating white matter tracts, but has not been studied in infants with prenatal alcohol exposure.

Methods: Infants aged 2-4 weeks were imaged using DTI sequences on a Siemens Magnetom 3T system. Eleven healthy unexposed infants (mean age: 22.3 days SD 7.2; 7 males, 4 females) and 20 alcohol-exposed infants (mean age: 20.2 days SD 4.5; 11 males, 9 females) were included in this preliminary tract-based spatial statistics (TBSS) analysis.

Results: When comparing fractional anisotropy between alcohol-exposed and healthy infants, significant decreases ($p < 0.05$) were found for the following white matter regions: inferior cerebellar peduncle, fornix, corona radiata, cingulum, cerebral peduncle, internal capsule.

Conclusion: These results indicate that even in newborns the neurobiological effects of prenatal alcohol exposure are observable, with reduced white matter integrity. This has not been previously reported in infants when confounding post-natal environmental influences on children from these backgrounds have not yet come into play. The location of the findings is consistent with previously reported studies of white matter tracts in older children with foetal alcohol syndrome.

P74
THE ROLE OF EPILEPSY IN AUTISTIC REGRESSION

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Introduction: Several studies have shown an increased prevalence of epilepsy in children with autism spectrum disorders (ASD), especially in autistic regression (AR), in which epilepsy has been pointed as a possible causal factor. A heterogeneous group of etiologies has been described in ASD, many of them common to epilepsy. The aim of this study is to analyze the relationship between AR and epilepsy or electroencephalogram (EEG) epileptiform abnormalities.

Methods: We describe 70 patients diagnosed AR, with a follow-up period of 1-19 years. All patients underwent EEG at the time of diagnosis and during the follow-up, cerebral MRI, metabolic screening and genetic studies.

Results: Among the 70 children, an underlying aetiology was found in 32 (45, 3%) whereas the other 38 (54, 3%) were considered cryptogenic. In the entire AR cohort, the prevalence of epilepsy was 52, 9%, compared with 93, 7% in the syndromic group and 18, 4% in the cryptogenic group. The proportion of epileptiform EEGs in the whole group was 55, 7%, compared with 96, 9% in the syndromic group and 21, 1% in the cyptogenic group. Regression was preceded by epilepsy in 20 patients (28, 6%) and by epileptiform EEG in 25 (35, 7%), all of them in the syndromic group.

Conclusions: The prevalence of epilepsy and EEG epileptiform abnormalities is much higher in syndromic AR than in cryptogenic AR. In our cohort, epilepsy preceded the regression only in syndromic AR patients. This suggests the existence of a common pathophysiological mechanism for AR and epilepsy, replacing the concept of epilepsy as a causal factor in autism.

P75

HYPERACTIVITY AND IMPULSIVITY IN CHILDREN WITH PURE, UNTREATED ALLERGIC RHINITIS

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Introduction: Allergic rhinitis (AR) is the most common chronic allergic disease in school-age children. An increased prevalence of attention deficit-hyperactivity disorder (ADHD) in AR patients has been reported, however, inattention and hyperactivity in AR children has not been investigated using objective and scientific measurements.

Methods: We used AR symptom score, ADHD symptom scale and computerized continuous performance test to study the attention and impulsivity in AR children, and age-matched controls (aged 6 to 15 years). Univariate and multivariate linear regression analyses were applied to identify risk factors for impulsivity and inattention in AR children.

Results: Twenty-nine control and 105 AR children were enrolled. There were no differences in age and gender among the three groups. Hyperactivity/impulsivity subscales of ADHD symptoms from both parents and teachers were significantly higher in the AR children. The continuous performance test in AR children revealed higher commission errors, shorter reaction times, and more perseveration. Risk factors for inattention and impulsivity in AR children included younger age, male gender, higher AR symptom scores, persistent AR, moderate/severe AR, multiple atopic diseases, family history of atopy and possible comorbidity with ADHD.

Conclusion: Care for AR children should not only involve treating their allergy but also monitoring the possible comorbidities of impulsivity and inattention. In children with impulsivity, AR should be considered in addition to ADHD.

P76

AUTISM SPECTRUM DISORDER IN SOTOS SYNDROME: TWO CASES

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Sotos syndrome is a rare autosomal dominant genetic condition caused by haploinsufficiency of ***NSD1*** gene. Here we report on two boys with clinical features of Sotos syndrome and for who language and learning disabilities were associated with autism spectrum disorder.

The first case is a 13-year-old male born from a consanguineous couple. At birth, weight was of 3850 g, length was of 52 cm and cranial circumference was of 35 cm. At 6-month-old, the child exhibited a middle development delay and seizures with electrical disturbances of epilepsy. Monitoring of growth showed acceleration in length and cranial circumference with advanced bone age by X-ray. The boy had dysmorphic facial features including a long narrow face, a high forehead, flushed cheeks, pointed chin, down-slanting palpebral fissures and hypertelorism. Cerebral TDM showed a sus-tentorial hydrocephalus. The child manifests intellectual disability and behavioral problems with a communication phobia. The second case is a 6-year-old only child of a consanguineous couple who suffers from a male infertility with oligospermia. The boy harbours prenatal and postnatal overgrowth, persistently enlarged head circumference, dysmorphic face (with prominent forehead, pointed chin, down-slanting palpebral fissures and hypertelorism) and some other skeletal signs: cubitus valgus, pectus excavatum and large hands and feet. Motor and speech development were severely delayed and at 6 years-old, the child did not speak and did not walk. He exhibits attention deficit, hyperactivity, repetitive and stereotyped patterns of behavior.

Genetic confirmation of Sotos syndrome, symptomatic treatment, monitoring of growth and periodic surveillance were undertaken.

P77

SLEEPING BEAUTY SYNDROME!! A CASE REPORT OF KLEINE-LEVINE SYNDROME

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Introduction: To describe the clinical presentation of 'Kleine-Levin syndrome' in a child, who presented with recurrent episodes consistent with encephalopathy, associated with excessive sleepiness, cognitive and behavioural disturbance and hyper sexuality.

Case description: 14 years old boy presented acutely with excessive tiredness, sleeping excessively, abnormal behaviour and hypersexuality following a viral throat infection.

On examination he was sleepy. His neurological examination including fundoscopy and systemic examination was unremarkable. All initial investigation including electrolytes, LFTs, CSF, virology screen and MRI brain scan were normal. Detailed autoimmune screening was negative. EEG showed non-specific diffuse slowing consistent with encephalopathy.

His excessive sleepiness gradually improved together with his altered behaviour in about two weeks after presentation. Hyper sexuality became more overt during this phase. All these symptoms completely disappeared three weeks after his presentation and he attended school as before.

Result: His recurrent symptoms were consistent with 'Kleine-Levin syndrome (KLS)' or 'sleeping beauty syndrome'.

KLS is a rare disorder which mainly affects adolescent males. Common symptoms include hypersomnia (100%), cognitive changes (96%), eating disturbances (80%), hypersexuality, compulsions, and depressed mood. The syndrome usually lasts for 8 years, with on an average seven episode of 10 days each recurring every 3.5 months. It is most frequently precipitated by infections and somnolence decreases using stimulants in nearly 40% of cases.

Conclusion: We believe neurologists should be aware of this (KLS) rare but distinct syndrome as early diagnosis will help us in reassuring patients and their families and will prevent unnecessary investigations.

P78

LEARNING DIFFICULTY IN RISK CHILDREN IS IT POSSIBLE TO PREVENT?

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INTRODUCTION. SERENAR started in August 2006.Its objective is to follow risk psychoneurosensorial new borns up to 7 years of age. Due to the frequency of the alterations detected during the follow up, a retrospective analysis of the evolution is performed, when it ends.

OBJECTIVES. To evaluate school learning at the end of the first year, detection of learning difficulties precursors, impact of tracking in the child and family.

MATERIALS and METHOD: Review of 22 cases at the end of follow up, evaluated at 1, 3,4,and 7 years of age, that fulfilled scheduled appointment. They take part of the program due to prematurity (12), asphyxia (3) other (7). They received guidance, interventions or therapeutic references.

RESULTS. 14% (3) did not show school difficulties, 86% showed difficulties. Of these 84% (16) with mild or moderate alterations, 16% severe. At age 3 alterations in standardised assessments were detected. 75% of children fulfilled treatments.

DISCUSSION. In all cases follow up was accomplished, but receptivity at indications varied. Children with most severe learning difficulties were those who at the beginning had most severe neurologic deficit.

CONCLUSION. A very high percentage of children at risk showed learning difficulties at the end of follow up. All children were detected with precocious alterations in different development areas. In children without learning difficulty at age 7 these alterations reversed in response to interventions in due time.

P79

FUNCTIONAL NEUROLOGICAL DISORDER IN THE PEDIATRIC EMERGENCY ROOM: CHARACTERISTICS, OUTCOME AND DIAGNOSTIC ACCURACY

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Background: Functional neurological symptom disorders (FND) are frequently encountered in practice, with significant medical and socioeconomic burden. Severe stressors, including sexual/physical abuse, are frequently described. 3–7 Pediatric epidemiological and outcome data remain scarce.

Objective: Assess diagnostic accuracy of trainee's first impression of FND in our pediatric emergency room (ER); describe manner of presentation, demographic data, socio-economic impact and clinical outcomes, including parental satisfaction.

Methods: 1) Over one year, psychiatry consultations for neurology patients with FND were retrospectively reviewed to assess the diagnostic accuracy of neurology trainees. 2) For three months, we prospectively collected all children whose ER presentation suggested the diagnosis of FND. 3) 3-6 months following prospective collection, families completed a structured phone interview on outcome measures.

Results: Twenty-seven patients were retrospectively assessed, thirty-one patients were prospectively collected. Diagnostic accuracy was 93-94%. Mixed presentations were most common (usually sensory-motor changes). Associated stressors were mundane and ubiquitous, rarely severe. Families were substantially affected, with mean 7.4 weeks of symptoms, 21 missed school days, and 8.9 days of parental missed work. At follow-up, 78% were symptom-free. Parental dissatisfaction was infrequent; insufficient information and poor rapport were the most common reasons.

Conclusions: Trainees' clinical impression was accurate in predicting a later diagnosis of FND. Extraordinary life stressors are not required to trigger these disorders. Though prognosis is favourable, families incur substantial economic and educational burden. Improving recognition and appropriately communicating the diagnosis of FND may speed access to treatment and potentially reduce the substantial disability and cost of this disorder.

P81

CITALOPRAM TREATMENT OF YOUNG CHILDREN WITH AUTISM SPECTRUM DISORDER (ASD): CORRELATION WITH MATERNAL HISTORY OF DEPRESSION

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Serotonin is essential for brain development in early childhood and its production is deficient in autism. We previously found low plasma serotonin in mothers of children with autism compared to typical siblings and fathers. We report treatment of 8 boys with ASD, 3.5-6 years (mean 4.6) for 4-24 months using citalopram, 0.5-9 mg daily. Children were treated if they had strong family histories of depression; 6 had chronic/recurrent maternal depression and 2 mothers received SSRIs during pregnancy. All had normal genetic and metabolic screening. Citalopram was started at 0.5-1 mg/day and increased weekly by 0.5-1 mg/day as tolerated, avoiding overstimulation as the dose was increased; it was decreased to the previous level if the child showed increased excitation, difficulty with sleep or decreased appetite. Children were treated for up to 1 year and then citalopram was tapered in the same manner as it was started. Within 3 months all 8 patients were much improved on most subscales of the Autism Clinical Global Impression-Improvement (Autism CGI-I) scale. Two patients maintained developmental gains following discontinuation; 2 regressed during weaning and were restarted; 4 are still on initial treatment and doing well. Although citalopram has limited effects in older children with ASD, our experience suggests that it may be effective in promoting brain development in young children, especially in those with a family history of depression and treatment with SSRIs. There are likely to be specific differences in serotonin synthesis or receptors in these families.