1035 THE INTERNATIONAL REGISTRY FOR NIEMANN-PICK DISEASE TYPE C (NP-C) IN CLINICAL PRACTICE

doi:10.1136/archdischild-2012-302724.1035

[1]FA Wijburg, [2]E Mengel, [3]MC Patterson, [4]JE Wraith, [5]MT Vanier, [6]B Schwierin, [6]A Muller, [7]H Drevon, [8]M Pineda. *[1]Department of Pediatrics, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands; [2]Villa Metabolica, University of Mainz, Mainz, Germany; [3]Mayo Clinic, Rochester, MN, USA; [4]Academic Health Science Centre, St Mary's Hospital, Manchester, UK; [5]INSERM Unit 820, Lyon, France; [6]Actelion Pharmaceuticals Ltd, Allschwil, Switzerland; [7]Numerus Ltd, Sandhurst, UK; [8]Hospital Sant Joan de Déu, Barcelona, Spain*

Background and Aim An international disease registry was started in September 2009 to evaluate the long-term disease course of NP-C in clinical settings.
Methods Descriptive data from enrolment are presented for all patients with available data who were included in the Registry as of 19th August 2011.
Results 121 patients have been enrolled. The median (range) age at enrolment was 16.9 (0.9−56.6) years, age at onset of neurological manifestations was 8.2 (< 1−48.0) years (n=100), and age at diagnosis was 11.8 (0.1−53.9) years (n=110). A history of neonatal jaundice was recorded in 4/4 evaluable patients with early-infantile (EI) onset of neurological manifestations (at age < 2 years; n=9), 6/21 (29%) with late-infantile (LI) onset (at 2 to < 6 years; n=31), 6/21 (29%) with juvenile (JUV) onset (at 6 to < 15 years; n=31), and 3/20 (15%) with adolescent/adult (AA) onset (at ≥ 15 years; n=29). Miglustat therapy at enrolment was recorded in 88/121 (73%) patients; mean (SD) exposure 1.69 (1.85) years (n=86). Neurological manifestations were observed in 71/84 (85%) patients: ataxia (71%), vertical gaze palsy (68%) and dysarthria (62%) were most frequent. Median (range) disability scores (0=normal; 1=worst) were: 0.0 (0.0–0.94) in EI (n=7), 0.29 (0.0–1.0) in LI (n=28), 0.41 (0.15–0.88) in JUV (n=28), and 0.29 (0.06–0.81) in AA-onset patients (n=26). A low proportion of patients had normal language, manipulation, ambulation, and/or swallowing.
Conclusions Over two-thirds of this NP-C cohort had infantile or juvenile onset of neurological manifestations; neonatal jaundice was observed more frequently in these patients *versus* adolescent/adult-onset patients.

1036 GRACILE SYNDROME IN A TURKISH NEWBORN INFANT CAUSED BY A HOMOZYGOUS MUTATION (P99L) IN COMPLEX III ASSEMBLY FACTOR BCS1L

doi:10.1136/archdischild-2012-302724.1036

[1]E Serdaroglu, [2]S Takci, [3]H Kotarsky, [1]O Cil, [4]E Utine, [2]S Yigit, [5,6]V Fellman. *[1]Department of Pediatrics; [2]Department of Pediatrics, Division of Neonatology, Hacettepe University, Ankara, Turkey; [3]Department of Pediatrics, Clinical Sciences, Lund University, Lund, Sweden; [4]Department of Pediatrics, Division of Medical Genetics, Hacettepe University, Ankara, Turkey; [5]Department of Pediatrics, Lund University and Skåne University Hospital Lund, Lund, Sweden; [6]Department of Pediatrics, University of Helsinki, Helsinki University Central Hospital, Helsinki, Finland*

Background and Aim GRACILE syndrome, a neonatal, autosomally recessive disorder found in Finland, featuring growth retardation, aminoaciduria, cholestasis, iron overload, lactic acidosis and early death, is caused by a homozygous mutation (S78G) in BCS1L, the assembly factor for respiratory chain complex III. We investigated a newborn Turkish girl with similar symptoms. Her two sisters with low birth weight, metabolic acidosis, cholestasis and renal Fanconi syndrome, had died at 18 and 105 days age, respectively.
Methods and results The girl was born to healthy nonconsanguineous parents. She was growth retarded (1789 g at term), developed tachypnea and metabolic acidosis on day one. Lactic acidosis, jaundice with direct hyperbilirubinemia, nonspecific aminoaciduria, high phosphaturia, proteinuria and glucosuria were detected. Serum iron (190 mcg/dl), ferritin (2819 ng/ml) and transferrin saturation (99.4%) were increased. Metabolic, cardiologic and sonographic workup were otherwise normal. Because of similarities with GRACILE syndrome, the *BCS1L* gene was investigated. The Finnish SNP was not found, but gene sequencing revealed a homozygous mutation resulting in an amino acid exchange (P99L) in the protein.
Conclusions The studied infant had a GRACILE-like disorder caused by a different mutation than that in newborns of Finnish ancestors. Most likely the two diseased siblings had the same homozygous BCS1L mutation that previously has been published in three other newborns or Turkish origin. We proposed that P99L-mutation in BCS1L is a Turkish genotype resulting in GRACILE syndrome phenotype, and should be investigated in Turkish newborns with the typical clinical features.

1037 DETERMINATION OF PREALBUMIN, SELENIUM, ZINC AND IRON CONCENTRATION IN SERUM FOR MONITORING THE NUTRITION STATUS OF PHENYLKETONURIC AND HYPERPHENYLALANINEMIC PATIENTS

doi:10.1136/archdischild-2012-302724.1037

[1]D Prochazkova, [1]L Kolbova, [2]J Jarkovsky, [3]H Vinohradska, [1]P Konecna, [1]Z Dolezel. *[1]Dpt. of Pediatrics; [2]Institute of Biostatistic and Analyses; [3]Dpt. of Biochemistry, Medical Faculty of Masaryk University and University Hospital Brno, Brno, Czech Republic*

Background and Aims Phenylketonuria is an inherited disorder of metabolism of the amino acid phenylalanine caused by a deficit of the enzyme phenylalaninhydroxylase. It is treated with a low-protein diet containing a low content of phenylalanine to prevent mental affection of the patient. The objective of the present study was to assess the compliance of our phenylketonuric (PKU) and hyperphenylalaninemic (HPA) patients; to determine the concentration of serum pre-albumin and trace elements to discover the potential correlation between the amount of proteins in food and their metabolic control.
Methods The prospective study contained altogether 174 patients, of which 113 were children, 60 with PKU and 53 with HPA and 61 were adults, 51 with PKU and 10 with HPA.
Results We did not prove a statistically significant difference in the levels of serum pre-albumin, zinc and iron among the respective groups. We proved statistically significant difference in the level of serum selenium among PKU and HPA patients in adulthood (p=0.006, Mann-Whitney U test).
Conclusion The therapeutic restrictive diet for PKU and HPA makes the patient liable to the risk of nutritional deficit.

1038 UREA CYCLE DEFECTS- MISDIAGNOSES AND WRONG DIAGNOSES

doi:10.1136/archdischild-2012-302724.1038

S Abed. *Pediatrics, Naser Pediatric Hospital, Gaza, Palestinian Authority*

Background Urea cycle defects (UCD) constitute a group of rare metabolic disorders that involve the enzymes of every step of urea cycle. Deficiency of one of these enzymes leads to hyperammonemia and they present classically with acute life-threatening neonatal encephalopathy. However, presentation at later childhood or adulthood could also occur. There are many disorders that mimic UCD causing misdiagnosis or wrong diagnosis.
Methods A prospective and retrospective study was made on 10 cases of UCD. Most have been diagnosed at the neonatal period with follow up done through our genetic and metabolic clinic at Naser Pediatric Hospital.
Results Most of the cases presented with acute ammonia encephalopathy. Age of presentation was variable. Most of the cases were from the Northern Gaza which is of geographical similarity to distribution of the IEM collectively .There was no gender differences.

Consanguinity and family history were positive in almost all of the cases. For means of diagnosis, referral was done for aminoacid profile. outcome of the cases varied from early neonatal death to normalcy through later childhood.

Conclusion and recommendations The high consanguinity rate in our country makes IEM not uncommon problem. Estimation the overall incidence of IEM in general and UCD in particular is needed. Further studies are needed to explain the higher incidence in Northern Gaza. Lack of metabolic specialist and metabolic laboratory necessitates referral of cases which has many problematic issues. We need to have metabolic specialist and genetist as well as our own metabolic and genetic lab in Gaza strip.

1039 DETERMINATION OF THE PERFUSION INDEX REFERENCE VALUES AND VARIATION IN CLINICALLY AND HEMODINAMICALLY STABLE NEWBORNS DURING THE EARLY NEONATAL PERIOD

doi:10.1136/archdischild-2012-302724.1039

N Hakan, D Dilli, A Zenciroğlu, N Okumuş, BS Karagöl, A Dursun, N Karadağ, S Beken, B Aydın, S Erol. *Dr Sami Ulus Maternity, Childrens Education and Research Hospital, Division of Neonatology, Ankara, Turkey*

Background and Aims The perfusion index (PI); is an easy, noninvasive technique for the assessment of peripheral perfusion. The aim of this study was to determine the peripheral PI reference values and PI variability of clinically and hemodynamically stable newborns during the first five days.

Method Pre- (right hand) and postductal (foot) PI values were recorded on the sixth hours, first, second, third and fifth day of 241 newborns life with the new generation pulse oximeter [MASIMO Rad 7 Oximeter, USA].

Results A total of 241 newborns (196 term, 45 preterm) were included in the study. The average gestation age of all newborns was 38.4±2.0 weeks and birth weight was 3204±566 grams. According to the analysis of repeated measurements of term and preterm groups within the first 5 days, PI values of right hand and foot did not vary. However, right hand PI values were significantly higher than foot PI values ($p<0.001$). During the first 3 days, both the right hand and foot PI median values of term newborns were significantly higher than preterm newborns ($p<0.001$) whereas on the fifth day, difference was disappeared (right hand; $p=0.10$, foot; $p=0.45$).

Conclusion The peripheral perfusion of stable newborns did not vary significantly during the first five days. It was considered, higher PI value of term newborns compared to preterm newborns, is the result of early adaptation in the microvascular blood flow. PI values obtained from stable newborns may be guiding for further studies planned on various diseases associated with impaired perfusion.

1040 EVALUATION OF THREE RESUSCITATION PROTOCOLS IN HYPOVOLEMIC SHOCK USING MICROCIRCULATION ANALYSIS IN AN ANIMAL MODEL

doi:10.1136/archdischild-2012-302724.1040

[1,2]R Gonzalez, [1]J Urbano, [1,2]MJ Solana, [1]M Botran, [1]A García, [1]J López-Herce, [1]J López. *[1]Pediatric Intensive Care, Gregorio Marañón General University Hospital and Research Institute; [2]Health Research Found, Health Institute "Carlos III", Madrid, Spain*

Background and Aims Ideal treatment of hypovolemic shock is not well established yet. Comparison of different treatments usually focuses on global haemodynamics. Our aim was to study if microcirculation analysis shows differences between three different resuscitation treatments.

Methods After sedation, relaxation and mechanical ventilation, hypovolemic shock was induced with controlled bleed (30ml/kg) in 17 two-month-old piglets. After 30 minutes pigs randomly received treatment with either normal saline (NS) 30 ml/kg, Albumin 5% plus Hypertonic 3% Saline (AHS) 15 ml/kg or Albumin 5% plus Hypertonic 3% Saline plus a bolus of Terlipressin 20 μg/kg (TAHS). Microcirculation was assessed following international consensus recommendations. Perfused vessel density (PVD), microvascular flow index (MFI) and heterogeneity index (HI) where determined at basal, post bleeding and after treatment.

Results After treatment PVD and MFI where higher in AHS and TAHS groups than NS group and HI values were lower, but differences between the three treatment groups were not statistically significant. Median values for PVD were 13.0±0.9 (NS); 14.0±1.8 (AHS) and 14.0±1.9 (TAHS) ($p=0,539$). MFI median values were 2.47±0.29 (NS); 2.75±0.23 (AHS) and 2.67±0.19 (TAHS) ($p=0,204$). HI median values were 0.43±0.23 (NS); 0.22±0.20 (AHS) and 0.32±0.21 (TAHS) ($p=0,316$).

Conclusions After treatment there were no significant differences between the three treatments in none of the three microcirculation parameters. There are no significant differences in microcirculation analysis between several treatments of hypovolemic shock.

1041 PERFUSION INDEX ASSESSMENT IN NEWBORNS WITH TACHYPNEA

doi:10.1136/archdischild-2012-302724.1041

S Unal, N Altuntas, S Beken, F Kulalı, E Kazancı, IM Hirfanoğlu, C Türkyılmaz, EE Önal, E Koç, Y Atalay, E Ergenekon. *Neonatology, Gazi University Hospital, Ankara, Turkey*

Background and Aim Tachypnea of newborn is a frequent respiratory problem which may be due to several causes. Perfusion index (PI) is a way of monitoring of peripheral perfusion noninvasively. The aim of this study was to compare PI of newborns with and without tachypnea within the 1st hour of life.

Methods Neonates born at gestational age >36 weeks with C/S were monitored with Masimo Set Radical 7 pulse-oximeter postductally. PI and oxygen saturation (SaO2) values, respiratory rates (RR), temperature and heart rate were manually recorded every ten seconds during first 3 minutes after the newborn was taken to the transition area (baseline) and at the 60 minutes of life.

Results Study included 30 tachypneic neonates 7 of which were admitted for transient tacypnea of newborn (TTNB) and 24 neonates with normal respiratory rates (controls). Birth weight of 30 tachypneic newborns were higher than controls $p<0.01$ whereas GA were similar. None of the neonates had risk for sepsis and all had capillary refill time < 3 sec. PI values were similar between groups both at baseline and at 1 hour (median and range; controls: 1.52(0.68–3.05), tachypnea:1.38 (0.68–3.07), TTNB: 1.2 (1.02–1.60) at baseline and controls: 1.23 (0.66–2.84), tachypnea: 1.42 (0.65–3.40), TTNB: 1.22 (1.03–2.08) at 1 hour. Only RR values were significantly different between groups.

Conclusion Low PI may be associated with various pathological conditions. The results of this study suggests that if the newborn has only transient tachypnea the PI remains normal which might be helpful for the clinician to decide about management.

1042 INCREASED PLASMA AND URINE NITRIC OXIDE LEVEL IN INTRAUTERINE GROWTH RESTRICTED LATE PRETERM INFANTS

doi:10.1136/archdischild-2012-302724.1042

[1]S Huseynova, [1]S Alasgarova, [1]S Mukhtarova, [2]S Ali-Zade. *[1]Neonatology, Azerbaijan Medical University; [2]Pediatry, Odlar Yurdu, Baku, Azerbaijan*

Background and Aims Nitric oxide (NO) is a vasodilator produced from different groups of nitric oxide synthases and plays an important role in regulation of vascular tone and blood flow in different organs. The aim of this study is to determine the connection