



British Inherited Metabolic Disease Group

John McIntyre Conference Centre,
The University of Edinburgh



Pre-meeting
Monday 16 June 2025

Annual Symposium
Tuesday 17 - Wednesday 18 June 2025

Poster list - Both days

Alphabetical by first presenting author surname

Posters marked with ❖ will be presented as a flash presentation

| Poster No | Poster |
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| 1 | Adjusting Dietary Therapy using Continuous Glucose Monitoring and Proposed Glycaemic Targets in Glycogen Storage Disease Type Ia: A Case Study Cameron Arbuckle ¹ , Dr Elaine Murphy ¹ ¹ National Hospital for Neurology and Neurosurgery, UK |
| 2 | Insights into aging among adults affected with Inherited Metabolic Diseases-one tertiary centre experience Dr John Bassett ¹ , Daniel Hand ¹ , Andrew Oldham ¹ , Emma Pickering ¹ , Dr Ana Jovanovic ¹ , Dr Samreen Safdar ¹ , Alison Woodall ¹ , Prof Emma Vardy ^{2,3} , Dr Karolina M Stepien ¹ ¹ Mark Holland Adult Inherited Metabolic Diseases Unit, Salford Royal Hospital, Northern Care Alliance NHS Foundation Trust, ² Oldham Care Organisation (part of the Northern Care Alliance NHS foundation trust), Rochdale Road, Oldham, OL1 2JH, ³ Manchester Academic Health Sciences Centre, School of Health Sciences, Faculty of Biology, Medicine and Health, The University of Manchester |
| 3 | Navigating Eliglustat Drug-Drug Interactions Through a Pharmacist-Led MDT Approach Daniel Bell ¹ , Alejandra de la Torre ¹ , Victoria Morgan ¹ , M Cherry May Sanchez ² ¹ Cambridge University Hospitals NHS FT, Cambridge, UK, ² Cancer Research UK Cambridge Centre, Cambridge, UK |
| 4 | Shaping Phenylketonuria research through patient and public involvement Giana Blaauw ¹ , Prof Anita MacDonald ² , Dr Sarah Durnan ¹ , Prof Jane Coad ³ ¹ Nottingham University Hospitals NHS Trust, Nottingham, England, ² Birmingham Women's and Children's NHS Foundation Trust, Birmingham, England, ³ School of Health Sciences, University of Nottingham and University Hospitals Coventry & Warwickshir, Nottingham and Coventry, England |

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| 5 | A prolonged release compared to an amino acid protein substitute in classical PKU effect on morning phenylalanine and tyrosine concentrations Dr Anne Daly ¹ , Dr Sharon Evans ¹ , Dr Alex Pinto ¹ , Prof Anita MacDonald ¹ ¹ Birmingham Children's Hospital, Birmingham, UK |
| 6 | Attention to Sapropterin Administration: Can it Bring Clinical Advantage? Prof Anita MacDonald ¹ , Dr Martina Tosi ² , Dr Alex Pinto ¹ , Dr Anne Daly ¹ , Dr Catherine Ashmore ¹ , Dr Sharon Evans ¹ ¹ Department of Dietetics, Birmingham Women's and Children's Hospital, UK, ² Department of Health Sciences, University of Milan; Department of Pediatrics, Vittore Buzzi Children's Hospital, Italy |
| 7 | Familial Hypercholesteremia in the Northwest of England: is it diagnosed too late? Silothabo Dliso ^{1,2} , Dr Clare Van Miert ² , Prof Joanne Blair ¹ ¹ Alder Hey Children's NHS Foundation Trust, UK, ² Liverpool John Moore's University, UK |
| 8 | Review of Patients Diagnosed with Biotin Thiamine Responsive Basal Ganglia disease in our centre Megan Dorman ¹ ¹ Great Ormond Street Hospital, London, UK |
| 9 | ❖ Late-onset argininosuccinic aciduria unmasked by sodium valproate Robert Field ^{1,2} , Hongying Chen ³ , Aine Redmond ³ , Alex Dudley ³ , David Lewis-Smith ³ , Eavan McGovern ³ , Stephen Ryan ^{3,4} , Loai Shakerdi ¹ , James O'Byrne ¹ ¹ National Centre for Inherited Metabolic Disorders, Mater Misericordiae University Hospital, Ireland, ² Department of Neurology, Mater Misericordiae University Hospital, Ireland, ³ Department of Neurology, Beaumont Hospital, Ireland, ⁴ Department of Neurology, Connolly Hospital Blanchardstown, Ireland |
| 10 | ❖ Adult Refsum Disease: Dietary management is more than only restricting phytanic acid intake Sarah Firman ^{1,2} , Jennifer Cook ^{1,2} , Imogen Hall ^{1,2} , Katie Yeung ^{1,2} , Steve King ^{1,2} , Dr Raphael Buttigieg ² , Dr Fiona Vaz ² , Dr Anthony S. Wierzbicki ² , Dr Radha Ramachandran ² ¹ Department of Nutrition and Dietetics, Guy's and St Thomas' NHS Foundation Trust, London, UK, ² Adult Inherited Metabolic Diseases, Guy's and St Thomas' NHS Foundation Trust, London, UK |
| 11 | Nutritional management of a successful multifetal PKU Pregnancy Suzanne Ford ¹ , Dr Nathan Cantley ¹ , Simone Whiteway ¹ , Dr Elisabeth Summers ¹ , Dr Helena Kemp ¹ ¹ North Bristol NHS Trust, Bristol, England |
| 12 | ❖ Think Ammonia: The Survey Jonathan Gibson ¹ , Laura Smith van Carroll ¹ , Pavel Krepelka ¹ Metabolic Support UK, England |
| 13 | ❖ Development of patient education/support for patients with Hereditary Fructose Intolerance (HFI) under the Addenbrooke's Metabolic Service Lisa Gaff ¹ , Sarah Donald ¹ , Ruby Cross ¹ , Dr Eleni Leventea ¹ , Dr Elizabeth Caller ¹ ¹ Addenbrookes Hospital, England |
| 14 | MADDening Results Secondary to Sertraline Dr Jessica Johnson ¹ , Dr Mohamed Ahmed ² , Dr Godfrey T. Gillett ¹ , Dr Adam Lomas ¹ ¹ Sheffield Teaching Hospitals NHS Foundation Trust, UK, ² York and Scarborough Teaching Hospitals NHS Foundation Trust, UK |

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| 15 | <p>Post-baseline outcomes of the UK Early Access to Medicines Scheme registry for ciproglucosidase alfa plus miglustat in late-onset Pompe disease Dr Elaine Murphy¹, Dr Duncan Cole², Dr Patrick Deegan³, Prof Tarekegn Geberhiwot⁴, Prof Derralynn Hughes⁵, Dr Robin Lachmann⁶, Dr Reena Sharma⁷, Vipul Jain⁸, Elizabeth Moffat⁹, Jasmine Rutecki⁸, Dr Sophie Clarke⁹, Prof Mark Roberts¹⁰</p> <p>¹Charles Dent Metabolic Unit, National Hospital for Neurology and Neurosurgery, University College London Hospitals, UK, ²University Hospital of Wales, UK, ³Lysosomal Disorders Unit, Addenbrooke's Hospital, UK, ⁴Institute of Metabolism and Systems Research, University of Birmingham, UK, ⁵Lysosomal Storage Disorders Unit, Royal Free London NHS Foundation Trust and University College London, UK, ⁶National Hospital for Neurology and Neurosurgery, University College London Hospitals, UK, ⁷The Mark Holland Metabolic Unit, Salford Royal Foundation NHS Trust, UK, ⁸Amicus Therapeutics, Inc., USA, ⁹Amicus Therapeutics UK Ltd, UK, ¹⁰Salford Royal NHS Foundation Trust, UK</p> |
| 16 | <p>❖ Does sertraline cause symptomatic non-genetic MADD? Dr R.P.M.M.R. Pathirana¹, Dr Ann Bowron¹, Dr Roy Talbot¹, Dr Yi Shiau Ng²</p> <p>¹Department of Blood Sciences, Royal Victoria Infirmary, The Newcastle Upon Tyne Hospitals, UK, ²Department of Neurosciences, Royal Victoria Infirmary, UK</p> |
| 17 | <p>❖ Healthcare provision and patient's outcomes in adolescents with Phenylketonuria: A UK centre experience Alex Pinto¹, Dr Anne Daly¹, Dr Sharon Evans¹, Catherine Ashmore¹, Prof Anita MacDonald¹</p> <p>¹Birmingham Children's Hospital, UK</p> |
| 18 | <p>5,10-Methenyltetrahydrofolate synthetase deficiency (MTHFS deficiency): expanding the clinical and biochemical phenotype Dr Sherry Fang¹, Dr Simon Pope², Dr Yael Hacoheh³, Dr Lara Menzies⁴, Dr Preeya Rehsi¹</p> <p>¹Department of Paediatric Inherited Metabolic Disease, Great Ormond Street Hospital for Children NHS, UK, ²Neurometabolic Unit, Institute of Neurology, Queen Square, UK, ³Paediatric Neurology, Great Ormond Street Hospital for Children NHS, UK, ⁴Department of Clinical Genetics, Great Ormond Street Hospital for Children NHS, UK</p> |
| 19 | <p>Miglustat: a first-in-class enzyme stabiliser for late-onset Pompe disease Professor Mark Roberts¹, Professor Tahseen Mozaffar², Dr Barry J Byrne³, Professor Mazen M Dimachkie⁴, Dr Robert J Hopkin⁵, Professor Priya S Kishnani⁶, Professor Benedikt Schoser⁷, Professor Ans T van der Ploeg⁸, Dr Jon Brudvig⁹, Dr Brian Fox⁹, Dr Fred Holdbrook⁹, Mr Vipul Jain⁹, Mr Franklin Johnson⁹, Dr Jennifer Zhang⁹, Professor Giancarlo Parenti¹⁰</p> <p>¹Salford Royal NHS Foundation Trust, UK, ²University of California, USA, ³University of Florida, USA, ⁴University of Kansas Medical Center, USA, ⁵Cincinnati Children's Hospital Medical Center, USA, ⁶Duke University Medical Center, USA, ⁷Friedrich-Baur-Institute, LMU University Hospital, LMU Munich, Germany, ⁸Erasmus MC University Medical Center, Netherlands, ⁹Amicus Therapeutics, Inc., USA, ¹⁰Metabolic Unit, University of Naples Federico II, Italy</p> |
| 20 | <p>❖ Very long-chain acyl-CoA dehydrogenase deficiency (VLCADD) and sleeve gastrectomy for weight management Louise Robertson¹, Alice Johnson², Alistair Sharples³, Dr Charlotte Dawson¹</p> <p>¹University Hospitals Birmingham NHS Foundation Trust, UK, ²Royal Wolverhampton NHS Trust, UK, ³University Hospitals of North Midlands NHS Trust, UK</p> |
| 21 | <p>True Faces of Rare: Preferences for authentic imagery in disorder-specific materials by people living with rare diseases and their communities Laura Smith Van Carroll¹, Pavel Krepelka¹, Kirsty Hoyle¹, Dr Kamran Iqbal², Dr Tom Kenny²</p> <p>¹Metabolic Support UK, Manchester, UK, ²Chiesi UK, Manchester, UK</p> |

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| 22 | <p>Distinctive phenotype associated with Mitochondrial ATAD3 gene cluster duplication: a case series Dr Srividya Sreekantam¹, Dr Suresh Vijayaraghavan¹, Dr Saikat Santra¹, Dr Julian Raiman¹, Ms Louise Simmons¹, Dr Jane Cassidy¹, Chris Stockdale¹, Dr Mrinalini Rajimwale², Dr Sreedhara Nittur³, Dr Swati Naik¹ ¹Birmingham Women's and Children's Hospital, ²Coventry Hospital, ³Singleton Hospital, Swansea</p> |
| 23 | <p>❖ Multisystem Involvement and Hypoalbuminemia in N-linked Congenital Disorder of Glycosylation (CDG): A Case Series Dr Nirubhan Veeraraghavan¹, Dr Hugh Lemonde¹, Dr Helen Mundy¹, Dr Dinusha Pandithan¹ ¹Guys and St Thomas Hospital NHS foundation trust, London, UK</p> |
| 24 | <p>Decompensating Inherited Metabolic Disorders and the Oral Emergency Regimen. The Adult Patient Experience in Bristol Simone Whiteway¹, Suzanne Ford¹ ¹North Bristol NHS Trust</p> |
| 25 | <p>Elevation of branched chain amino acids due to Branched Chain Amino Acid Transferase 2 deficiency (BCAT2): to treat or not to treat? Dr Guido Zago¹, Dr Marios Kaliakatsos², Dr Nazreen Kamarus Jaman¹, Dr Martina Messina¹, Alice Dianin³, Dr Laura Rubert³, Dr Andrea Bordugo³, Dr Giulia Rodella³, Dr Elena Piccoli³, Dr Preeya Rehsi¹ ¹Department of Paediatric Metabolic Medicine, Great Ormond Street Hospital NHS Trust, London, UK, ²Department of Paediatric Neurology, Great Ormond Street Hospital, London, UK, ³Inherited Metabolic Diseases Unit and Regional Centre for Newborn Screening, Diagnosis and Treatment of Inherited Metabolic Diseases and Congenital Endocrine Diseases, Azienda Ospedaliera Universitaria Integrata, Verona, Italy, Verona, Italy</p> |

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| 26 | <p>Difficulties in diagnosing mild peroxisomal biogenesis disorders – a case example Sharon Colyer¹, Claire Hart¹, Jennie Raven², John Shepherd² ¹Sheffield Children's Hospital, UK, ²Hull Royal Infirmary, UK</p> |
| 27 | <p>KS-462-282: An alternative Krabbe Disease biomarker with excellent diagnostic potential James Cooper¹, Kate Neal¹, Christine Egerton¹, Karen Tylee¹, Dr Heather Church¹, Teresa HY Wu¹ ¹Manchester University NHS Foundation Trust, UK</p> |
| 28 | <p>Evaluating Reference Intervals for Galactose-1-Phosphate Uridyl Transferase: Integrating Biochemical and Genetic Data Philip Crook¹, Catherine Bradford ¹Synnovis Analytics Ltd., London, UK</p> |
| 29 | <p>The Efficacy of Liquid Valine and Isoleucine Supplements in MSUD Dr Anne Daly¹, Dr Martina Tosi², Dr Alex Pinto¹, Dr Catherine Ashmore¹, Dr Sharon Evans¹, Prof Anita MacDonald¹ ¹Department of Dietetics, Birmingham Women's and Children's Hospital, UK, ²Department of Health Sciences, University of Milan; Department of Pediatrics, Vittore Buzzi Children's Hospital, Italy</p> |
| 30 | <p>Elevated 4-methylsterol and 4,4-dimethylsterol in microcephaly, congenital cataract and psoriasiform dermatitis syndrome due to methylsterol monooxygenase 1 (MSMO1) deficiency provides diagnostic and treatment response biomarker Dr James Davison¹, Dr Youssef Khalil², Dr Catherine Dennis³, Dr Tess McPherson⁴, Professor Peter Clayton² ¹Metabolic Medicine, Great Ormond Street Hospital, UK, ²UCL GOS Institute of Child Health, UK, ³Clinical Genetics, Oxford University Hospitals, UK, ⁴Dermatology, Oxford University Hospitals, UK</p> |
| 31 | <p>Evaluation of neurodevelopmental outcome after haematopoietic stem cell transplant (HSCT) in a patient with Triosephosphate isomerase deficiency (TPI-D) Carey Eldred¹, Sian Waller¹, Dr Robert Chiesa², Dr James Davison¹ ¹Great Ormond Street Children's Hospital - Metabolic Medicine Department, UK, ²Great Ormond Street Hospital - Bone Marrow Transplant Department, UK</p> |
| 32 | <p>An unusual case of argininosuccinic aciduria highlighting the challenges and importance of identification of argininosuccinic acid in amino acid analysis Dr Vicki Warburton¹, Rebecca Hopkins¹, Kinga Krzywdzinska¹, Kris-Mae Dela Isla¹, Tim Thorpe¹, Dr Paul Cook², Dr Efstathia Chronopoulou³, Dr Germaine Pierre³ ¹University Hospitals Bristol and Weston NHS Foundation Trust, UK, ²University Hospital Southampton NHS Foundation Trust, UK, ³Bristol Royal Hospital for Children, UK</p> |

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| 33 | <p>FollowME Fabry Pathfinders registry: patient-reported outcomes in a cohort of patients on migalastat treatment for median 4 years Derralynn Hughes¹, Ulla Feldt-Rasmussen², Gere Sunder-Plassmann³, Aneal Khan⁴, Biliana O. Veleva-Rotse⁵, Joseph D. Giuliano⁵, Hai Jiang⁵, Vipul Jain⁵, Jasmine Rutecki⁵, Aleš Linhart⁶ ¹Royal Free London NHS Foundation Trust and University College London, UK, ²Rigshospitalet, Copenhagen University Hospital, Denmark, ³Medical University of Vienna, Austria, ⁴M.A.G.I.C. (Metabolics and Genetics in Canada) Clinic Ltd., University of Calgary, Cumming School of Medicine, Canada, ⁵Amicus Therapeutics, Inc., USA, ⁶Charles University and General University Hospital, Czech Republic</p> |
| 34 | <p>Retrospective Analysis of Vitamin B12 Dose Optimization in Methylmalonic acidaemias and Cobalamin Deficiency-Related Disorders: Insights from a Tertiary Metabolic Centre in the UK Dr Nazreen Kamarus Jaman¹, Dr Guido Zago¹, Dr James Davison¹, Dr Stephanie Grunewald¹, Melanie Mcsweeney¹, Megan Dorman¹, Marjorie Dixon¹, Rachel Skeath¹ ¹Great Ormond Street Hospital, London, UK</p> |
| 35 | <p>Continuous Glucose Monitoring in the GSD cohort of Addenbrooke's Metabolic Service Dr Eleni Leventea¹, Sarah Donald¹, Lisa Gaff¹ ¹Addenbrooke's Hospital, Cambridge, UK</p> |
| 36 | <p>Barriers and facilitators to clinical trial participation: improving accessibility, logistics, and awareness Helen Lycett¹, Samantha Wiseman¹, Alexandra Morrison¹ ¹Rare Disease Research Partners, Amersham, UK</p> |
| 37 | <p>Primary and secondary multiple acyl-coA dehydrogenase deficiency (MADD): clinical insights and treatment response Dr Eamon Mccarron¹, Dr Emma Murray¹, Neil Gilmore¹, Dr Gillian Hamilton¹, Sharon Coyler², Joanne Croft², Camilla Scott², Clarie Hart², Dr Estelle Healy¹, Dr Grainne Connolly¹, Dr Michael Kinney¹, Dr John McConville³, Dr Ashley Elliott^{1,4} ¹Royal Victoria Hospital Belfast, Northern Ireland, ²Sheffield Children's Hospital, England, ³Ulster Hospital, Northern Ireland, ⁴Wellcome-Wolfson Institute of Experimental Medicine, Queen's University Belfast, Northern Ireland</p> |
| 38 | <p>Role of tele monitoring in rare disease management Alison Mckee¹, Nicola Mcstravick¹, Sophie Houghton¹, Dr Grainne Connolly¹, Dr Emma Murray¹, Laura Murphy¹, Joy Mcdonald¹ ¹Belfast Health and Social Care Trust, Belfast, Northern Ireland</p> |
| 39 | <p>Phenylketonuria (PKU) - A Transition Model for Rare Disease Nicola McStravick¹, Alison McKee¹, Sophie Houghton¹, Dr Grainne Connolly¹, Anne Grimsley¹, Nicky Courtney¹, Dr Siobhan O'Sullivan¹, Dr Caroline Hart¹, Emma Tracey¹ ¹Belfast Health and Social Care Trust, Belfast, UK</p> |
| 40 | <p>Glycogen Storage Disease type 3 & Ketogenic Diet Therapy – Case Report Camille Newby¹, Abigail Robotham¹, Victoria Wilkins¹, Sam Whiting¹, Catherine Armstrong¹, Germaine Pierre¹, Effie Chronopoulou¹ ¹Bristol Royal Hospital for Children, UK</p> |
| 41 | <p>Disorder or distraction: Considering the significance of an ACADSB gene variant in a young person with developmental delay Dr Mahdia Sami Obeda¹, Dr James Nurse¹, Dr Paul Cook¹, Dr Hugh Lemonde², Dr Katherine Lachlan¹ ¹Southampton General Hospital, UK, ²Evelina Children's Hospital, UK</p> |

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| 42 | <p>How good is blood Phe control in Maternal PKU in Europe: results from 102 pregnancies Alex Pinto¹, Dr Kirsten Ahring², Manuela Ferreira Almeida³, Catherine Ashmore¹, Sarah Bailey⁴, Dr Amaya Bélanger-Quintana⁵, Prof Alberto Burlina⁶, Dr Duncan Cole⁴, Clare Dale⁷, Dr Anne Daly¹, Esther van Dam⁸, Dr Charlotte Dawson⁷, Dr Sharon Evans¹, Sarah Firman⁹, Diane Green¹⁰, Dr Tarekegn Hiwot⁷, Yteke Hoekstra⁸, Sarah Howe⁷, Dr Fatma Ilgaz¹¹, Christian Loro⁶, Nicola McStravick¹², Katie Rawlins⁹, Louise Robertson⁷, Prof Júlio César Rocha¹³, Iris Rodenburg⁸, Dr Danja Schulenburg-Brand⁴, Prof Francjan van Spronsen⁸, Dr Gisela Wilcox¹⁰, Alison Wodall¹⁰, Prof Anita MacDonald¹</p> <p>¹Birmingham Children's Hospital, UK, ²Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark, ³Centro de Referência na área de Doenças Hereditárias do Metabolismo, Unidade Local de Saúde de Santo António, E.P.E. (JLSSA), Portugal, ⁴University Hospital of Wales, Wales, ⁵Hospital Universitario Ramón y Cajal, Spain, ⁶Padova University Hospital, Italy, ⁷University Hospitals Birmingham, UK, ⁸University Medical Centre Groningen, University of Groningen, The Netherlands, ⁹Guy's & St Thomas' NHS Foundation Trust, UK, ¹⁰Salford Royal Foundation Trust, UK, ¹¹Hacettepe University, Turkey, ¹²Royal Victoria Hospital, UK, ¹³NOVA Medical School (NMS), Faculdade de Ciências Médicas, (FCM), Universidade Nova de Lisboa, Portugal</p> |
| 43 | <p>Are Cystatin-C measurements useful for the surveillance of chronic kidney disease in Paediatric MMA patients? Dr Preeya Rehsi¹, Ms Gemma Meenan¹, Dr Matko Marlais², Ms Melanie McSweeney¹</p> <p>¹Department of Paediatric Inherited Metabolic Disease Great Ormond Street Hospital NHS Foundation Trust and Institute for Child Health London UK, ²Department of Paediatric Nephrology, Great Ormond Street Hospital for Children, London, UK</p> |
| 44 | <p>Managing the untreatable - the broader role of rapid whole genome sequencing in neurological regression Dr Saule Gasiunas¹, Dr Dexter Tarr¹, Dr Richard Curnock¹</p> <p>¹Willink Unit, St. Mary's Hospital, UK</p> |
| 45 | <p>Optimising Ketogenic Therapy in Multiple Acyl-CoA Dehydrogenase Deficiency: A Case Report Dr Fiona Vaz¹, Sarah Firman¹, Roqsana Ara¹, Jennifer Cook¹, Imogen Hall¹, Katie Yeung¹, Dr Radha Ramachandran¹</p> <p>¹Guy's and St Thomas' NHS Foundation Trust, UK</p> |
| 46 | <p>Optimising Peripheral Intravenous Catheter Insertion and Management in Out-of-Hospital Settings: Addressing Patient and Technical Factors, Enhancing Nurse Competency, and Promoting Evidence-Based Practices for Improved Outcomes Leoni Walker¹</p> <p>¹Lloyds Clinical, Harlow, UK</p> |
| 47 | <p>Discrepant urine biochemistry in a paediatric patient with Alkaptonuria Courtney Watt¹</p> <p>¹NHS Greater Glasgow and Clyde, Scotland</p> |
| 48 | <p>A Rare cause of rhabdomyolysis in a 12 year old girl Dr Ralph Wigley¹, Dr Alistair Horman¹, Dr Julien Baruteau¹</p> <p>¹Great Ormond Street Hospital, UK</p> |
| 49 | <p>A case of X-linked form of combined Methylmalonic aciduria and Homocysteinemia - Cbl X Natalia Olkhovich^{1,2}, Yuliia Zhyvytsia¹, Maryna Patsora¹, Natalia Samonenko¹, Natalia Pichkur¹, Natalia Mytsyk¹, Oksana Barvinska¹, Iryna Hrehul¹, Svitlana Kormoz¹, Yuliia Tymruk¹, Olena Kutsyk¹, Maryna Shulga¹, Natalia Petrenko¹, Lina Moshkivska¹, Anna Shilova¹ Tetiana Ivanova¹ Natalia Gorovenko^{2,3}</p> <p>¹National Ukrainian Childrens Hospital OKHMATDYT, ²Institute of Genetic and Regenerative Medicine, Kyiv, Ukraine, ³National University of Health named P.L. Shupyka, Kyiv, Ukraine</p> |