the body esteem domain increased from 48 to 81. BAI scores reduced from 22.5 to 5 in 2 patients.

**Conclusion** Multidisciplinary assessment is important in selecting patients for bariatric surgery. This surgery should be performed in centres that can provide this. Improvements in quality of life are significant and important to monitor to sustain weight loss. Longer term follow-up is necessary to maintain weight loss and monitor progress.

## G99(P) GROUP EDUCATION IN ADOLESCENT DIABETES TRANSITION

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[1]H Reid, [2]L Potts, [2]K Agostini, [2]J Luscombe, [2]R Thompson, [2, 3]P Hindmarsh, [2, 3]RM Viner, [2, 3]B White. *[1]School of Medicine, University College London, London, UK; [2]Children and Adolescent Diabetes Service, University College Hospital London, London, UK; [3]Institute of Child Health, University College London, London, UK*

**Aims** Education is a key component of the transition process. We piloted a half-day group education session for young people (YP) and their parents.

**Methods** All YP in the diabetes service aged 14–19 years were invited via letter, email (if address available) and/or telephone. Eligible participants were invited to book using a commercial web-based booking platform. Education was in the form of expert-delivered didactic group sessions and a parent workshop. Members of the adult diabetes team introduced their service and were available to meet families. Attendees completed evaluation forms at the end of the session.

**Results** Demographics: 25/130 (19%) of eligible YP and 21 parents attended. 1/23 (4%) eligible YP aged 14 years attended, 8/50 (16%) aged 15–16 attended, 16/52 (28%) aged 17–18 years attended and 1/5 (20%) aged 19y attended. 17/25 (68%) YP in attendance were male. The mean (SD) HbA1c of attendees was 8.1% (1.4) vs 8.4% (1.7) for non-attendees (p,0.05, t-test). 24/25 (96%) attendees had type 1 diabetes.

Booking and attendance: Of those invited by email: 21/34 (62%) of YP opened the email, 30/39 (77%) of parents opened the email. The predominant barrier to attendance was exam commitments.

Acceptability and ratings: Mean (SD) YP rating for the session was 8.1 (0.9) in a 10-point Likert scale (1 = very poor, 10 = excellent). Mean (SD) parent ratings were 8.6 (1.4). After the session, 14% of YP reported they were "ready to move to adult services", 59% "more ready to move to adult services", 18% "equally ready" and 0% "less ready". Sessions most frequently rated by YP as "useful" were "rights and jobs" (77%), "having a healthy baby" (64%), "driving and diabetes" (59%) and "alcohol and diabetes" (59%); parents most rated "driving and diabetes" (94%) "rights and jobs" (75%), "adult clinic" (75%) and "insulin pumps in adult services" (75%).

**Conclusions** An expert-delivered group transition education session shows promise as an effective and easy to deliver tool for preparing adolescent patients for adult life with diabetes. Further exploratory work is needed to optimise this model and measure its effectiveness.

## G100(P) HYPERINSULINAEMIC HYPOGLYCAEMIA OF SHORT DURATION – CAN IT BE ASSOCIATED WITH SEVERE HYPOGLYCAEMIC BRAIN INJURY?

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C Gilbert, K Morgan, L Hinchey, P Shah, K Hussain. *Paediatric Endocrine Department (Hyperinsulinism), Great Ormond Street Hospital, London, UK*

**Background** Neurological damage is a known risk associated with hyperinsulinaemic hypoglycaemia (HH). Insulin suppresses ketone body formation and hence no alternative fuels are available for the brain to use; however it is not yet known how long HH has to last to cause brain injury. We report that neurological damage can occur after a short time in term, normal weight infants with diazoxide responsive HH.

**Aim** To describe the clinical course and neurological outcome of 3 term neonates with severe hypoglycaemic brain injury who were not diagnosed with HH for at least 72 hours.

**Methodology** 3 patients who presented in the neonatal period with biochemically confirmed HH were recruited. Detailed clinical information was collected including MRI brain reports.

**Results** All three term neonates were discharged home after 24–36 hours of birth. Birth weight range was 2730–3460 gms and each delivery was classified as normal vaginal births with no associated risk factors for HH. All infants presented to the Emergency department on day 3 to 4 of life with non-specific symptoms like poor feeding and lethargy. However all of them were noted to have jerky and seizure like movements. Biochemically, all had their true blood glucose levels less than 0.6 mmols/L with raised insulin and suppressed ketone body formation They all successfully responded to small doses (5mg/kg/day) of Diazoxide (two of them are off Diazoxide now and had transient hyperinsulinism). Each neonate had MRI brain due to clinical neurological concerns within the first few weeks of life that showed significant evidence of hypoglycaemic brain injury like gross white matter changes with parieto-occipital infarcts.

**Conclusion** It is very important for early identification and prompt management of HH as untreated severe hypoglycaemia can result in severe brain injury and subsequent neurodevelopmental handicap. Term infants with no risk factors are often difficult to identify due to non-specific symptoms. Parental education to recognise early symptoms of hypoglycaemia would be recommended and prompt medical advice should be sought. Blood glucose levels should be of utmost priority for babies presenting to A&E with non specific symptoms such as poor feeding/lethargy etc.

## G101(P) THE 0.12 FORMULA FOR THE MANAGEMENT OF HYPOGLYCAEMIA AND HYPERGLYCAEMIA IN CHILDREN WITH TYPE 1 DIABETES MELLITUS: VALIDATION AND SAFETY DATA

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[1]L Yazbeck, [2]M Watson, [2]N Ninis, [2]S Wassouf. *[1]Clinical Genetics, Kennedy Galton Centre, London, UK; [2]Paediatrics, Imperial College NHS trust, London, UK*

**Background** The life of patients with diabetes mellitus is populated with hypo- and hyperglycaemias, both of which are associated with inherent dangers.

Existing formulas attempting to quantify patients' insulin requirements have proved ineffective and rather arbitrary[1]; they are based on estimations of 24 hour consumptions of insulin and carbohydrates in the average person.

**Objective** This paper tests the effectiveness of the 0.12 formula that is based on patient's weight and carbohydrates consumption. It calculates glucose and insulin sensitivity and guides the treatment of hypo- and hyperglycaemia, specifically for each patient.

**Method** Data from the Continuous Glucose monitoring system (CGMS) applications and the associated food diary were used to assess the blood sugar achieved after hypo- and hyperglycaemia treatment. This was compared to that expected via the 0.12 formula using the Wilcoxon statistical analysis.

**Results** 20 and 42 patients were assessed for hypoglycaemia and hyperglycaemia respectively.

In either treatment, there was no statistically significant difference between expected and achieved blood sugar; p-values were 0.53 and 0.072 respectively.

Furthermore, insulin sensitivity derived using the 0.12 formula was compared to that calculated through the historically popular 100 rule[1]. Wilcoxon statistical analysis showed significant statistical difference between the two formulas; p-value 0.0025, (confidence interval +/− 0.000484).

**Conclusion** This data demonstrates that the proposed formula is safe, reliable and effective for the management of hypo- and hyperglycaemia in children with type I diabetes mellitus and should be implemented widely to improve safe practise. As it is patient specific and user-friendly, it allows patients/parents to feel in control over their diabetes and contributes to overall patient safety.

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## G102(P) CASE REPORT: ATYPICAL PRESENTATION OF HYPERGLYCAEMIC HYPEROSMOLAR STATE IN A YOUNG TYPE 1 DIABETIC

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AEJ Abohweyere, J Wasserman. *Paediatrics (Endocrinology Division), Hospital for Sick Children, University of Toronto, Toronto, Canada*

**Aim** To highlight the presentation and treatment of Hyperglycaemic Hyperosmolar Syndrome (HHS) presenting atypically in a paediatric diabetic patient.

**Case history** A previously well 5-year-old boy presented to his local hospital with loss of consciousness. He had a 10 day history of weight loss, polydipsia, polyuria and secondary nocturnal enuresis. He had been drinking large volumes of high sugar content juice. He also had 3 days of abdominal pain and multiple bouts of emesis on the day of presentation. He was found to be lethargic and was immediately transported to hospital. At the emergency department, he was minimally responsive (GCS = 3) and hypopnoeic. He was intubated and transferred to the ICU.

Initial blood glucose was 111 mmol/L. Venous Gas: PH 7.19, pCO243 mmHg, HCO3 15mmol/L, Lactate 3.8mmol/L. Serum Osmolality 381mosm/L. Na 135mmol/L, K 3.8mmol/L, Cl 95mmol/L, Creatinine 446mmol/L, Urea 22.5mmol/L, CPK 7351mmol/L. Urine ketones and serum toxicology screens were negative.

ICU course was notable for severe dehydration requiring copious fluid replacement. Hypotension required multiple inotropes. Hyperthermia requiring ice cooling developed; dantrolene was considered but not used. He had rhabdomyolysis and seizures. MRI showed abnormal FLAIR signal in the sub-cortical white matter of both occipital lobes. His hospital stay was complicated by left leg occlusive thrombus due to a femoral venous catheter. He needed physiotherapy to regain independent mobility.

Islet cell, anti-GAD and Insulin antibodies were positive, confirming Type I diabetes. C-peptide levels are pending.

**Conclusion** We present this case to highlight HHS as an unusual presentation and complication of Type 1 diabetes. The typical patient with HHS is an adult with established diabetes or an obese teenager of African descent. Our patient though black, did not fit this typical profile. HHS occurs less commonly than diabetic ketoacidosis in childhood diabetes although presenting features often overlap. Its management requires large fluid volumes to correct dehydration compared to fluid restriction in DKA. HHS is associated with greater mortality than DKA therefore, paediatricians need a high index of suspicion to diagnose and manage it effectively.

## G103(P) AN INTERESTING CASE OF TWO SIBLINGS WITH SDHB MUTATIONS

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RB Mitting, P Kapila. *Paediatrics, North Middlesex University Hospital NHS Trust, London, UK*

Phaeochromocytoma presenting in childhood is rare.[1] It commonly presents with the effects of catecholamine excess, the most consistent of which is hypertension.[2 3] Patients with phaeochromocytoma presenting in childhood often have a predisposing genetic mutation.[1 2] Carriers of succinate dehydrogenase complex subunit B (SDHB) mutations are at risk of developing paraganglionoma/phaeochromocytoma, and these tumours have a high rate of malignancy.[3] SDHB mutations are also associated with gastro-intestinal stromal tumours.[4] They are inherited in an autosomal dominant fashion.[5]

We present a case of a 15 year old girl (AB) and her 4 year old sister (MB), who both presented in 2011. AB was diagnosed with an extra-adrenal phaeochromocytoma, (paraganglionoma), and MB with intestinal pseudo-obstruction. Both patients have been found to have SDHB mutations.

AB presented with seizures and decreased level of consciousness, requiring intubation and ventilation. It was initially difficult to obtain non-invasive blood pressure (BP) measurement, and once an arterial line was inserted, BP was 255/177. This settled without intervention at the time. Once transferred back to DGH, BP remained 120–70 systolic, so an ultrasound scan was performed, which revealed a mass adjacent to the aortic bifurcation, and urinary catecholamines measured, which revealed raised noradrenaline, and urinary VMA. The mass was removed, and histology confirmed extra-adrenal phaeochromocytoma.

MB presented with bilious vomiting and abdominal distension, so was transferred to a tertiary hospital under the care of the surgical team. She required 3 weeks of TPN and was given a diagnosis of intestinal pseudo-obstruction. Following these episodes, both patients received genetic counselling, and were found to have SDHB mutations, which they inherited from their father.

This case highlights the importance of accurate blood pressure measurement in paediatrics, especially in Accident and Emergency. Hypertension in children is rare,[5] and therefore when it is discovered, it should be investigated thoroughly as a cause is likely to be found. We are reminded of the need for genetic counselling for children with phaeochromocytoma/paraganglionoma and their siblings, as there is a high risk of genetic mutations and, once genetic mutations are identified, there is a risk of synchronous and metanchronous cancers.

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## G104(P) AUDIT OF ENDOCRINE LATE EFFECTS IN SURVIVORS OF CHILDHOOD BRAIN TUMOURS

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[1]E Heffernan, [2]A McCarthy, [2]R Johnston, [1]S Koppikar, [1]N Abid. *[1]Paediatric Endocrinology & Diabetes, Royal Belfast Hospital for Sick Children, Belfast, N Ireland; [2]Paediatric Oncology, Royal Belfast Hospital for Sick Children, Belfast, N.Ireland*

Brain tumours are the most common solid tumour in children, affecting 400 children in the UK each year. The aggressive treatment required for cure, may have serious consequences, of which endocrine late effects are the most prevalent.

This aim of this audit is to ascertain the frequency and nature of endocrine late effects; in a cohort of 30 survivors, diagnosed over a