when doses need to be prepared via dispersion of a tablet and calculation of the volume to withdraw. This may be related to the poor solubility of hydrocortisone which makes formation of a homogenous liquid difficult. There is a need for age-appropriate hydrocortisone products to be available to children.

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G220 CHANGING PATTERNS OF GROWTH IN PRADER-WILLI SYNDROME

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Introduction/aim Children with Prader-Willi syndrome (PWS) show alterations in infantile, childhood and pubertal growth. Growth Hormone (GH) therapy is recommended due to reported improvements in height velocity (HV) and body composition. The aim was to describe the patterns of growth in PWS and the influence of both changes in clinical practice and GH therapy.

Methods Height SDS(HSDS), BMISDS and HVSDS of children attending a dedicated PWS clinic, 2000–2017, were analysed. To identify changes in growth we compared growth parameters between 2000–2012 and 2013–2017. In 21 children who received GH (median age at GH start 4.92 years (2.27,8.1)), consecutive measurements were available at -1, 0,+1 and +2 years from GH start.

Results Overall, 60 children (31 F/29 M) were included. Three phases of growth after the age of 1 year were identified: 1–5 years, with acceleration in both HSDS(r , 0.310, p , <0.0001) and BMISDS(r , 0.602, p , <0.0001); 6–12 years, with stabilisation in both HSDS(r , 0.063, p , 0.417) and BMISDS(r , -0.154, p , 0.087); and 13–18 years, with deceleration in HSDS(r , -0.383, p , <0.0001) and unchanged BMISDS(r , 0.015, p , 0.896).

Abstract G220 Table 1

Age	1 year	5 years	12 years	16, 17 years
Number	32	30	16	31
HSDS	-1.82 (-3.99,-0.08)	-0.76 (-4.16,2.25)*	-0.59 (-4.27,1.59)	-2.66 (-4.27,-0.64)
BMISDS	-0.83 (-3.27,1.85)	2.51 (-2.36,5.63)*	1.94 (-0.13,4.3)	2.52 (-1.5,4.18)

* p , <0.0001 vs age 1 ** p , <0.0001 vs age 5 and age 12

At age 5, children in 2013–2017 (n ,12) had higher HSDS [median, -0.08 (-1.74,1.54) vs -1.04(-4.16,0.5)] than those in 2000–2012 (n ,18) (p ,0.03). At age 12, children in 2013–2017 (n ,5) had higher HSDS [median, 1.13 (-0.62,1.59) vs -1.35 (-4.27,0.23)] (p ,0.027) and lower BMISDS [median, 1.05 (-0.13,2.14) vs 2.44 (0.13,4.3)] (p ,0.032) than those in 2000–2012 (n ,11). After 2 years on GH, median HSDS improved from -1.43 (-4.59,0.95) to -0.11(-3.53,1.57) (p , <0.0001) and median HVSDS from 0.62 (-5.9,4.17) to 2.8 (-2.2,5.2) (p ,0.027). BMISDS was unchanged (Table 1).

Conclusion We were able to delineate 3 distinct phases of growth in PWS. Changes in our clinical practice have led to

improvements in both height and BMI. GH therapy was associated with an increase in height and stabilisation of BMI.

G221 VITAMIN D STATUS OF BREASTFEEDING INFANT-MOTHER PAIRS IN SOUTH-WESTERN NIGERIA

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Aims Poor vitamin D status is currently a global public-health issue including regions where the risk of vitamin D deficiency was previously assumed to be low due to cutaneous synthesis of vitamin D stimulated by continuous exposure to sunlight. Evidence suggests that exclusively breastfed infants are at risk of low vitamin D status; a risk factor for future poor health. No guidelines currently exist for vitamin D supplementation in Nigeria. The study aimed to determine the plasma vitamin D concentrations of study subjects, provide the much needed information on the prevalence of vitamin D deficiency in maternal and breastfeeding infants, as well as the relationship between maternal and infant blood vitamin D levels.

Methods This cross-sectional study involved 120 breastfeeding infant-mother pairs. Maternal and infant blood samples were taken at the same time. A solid phase competitive enzyme linked immunosorbent assay (DLD Diagnostika GmbH, Germany), was used for the quantitative determination of 25-OH vitamin D in plasma, and read out using Acurex plate (Acurex Diagnostics, USA). Low and normal level controls were assayed in duplicate during each run.

Results The mean plasma vitamin D concentrations in the maternal and breastfeeding infant blood were 18.86 ± 6.56 ng/mL and 24.12 ± 9.10 ng/mL respectively. Seven (5.8%) mothers had normal vitamin D levels while 70 (58.3%) mothers had hypovitaminemia (vitamin D concentration below 20 ng/mL). Also, 28 (23.3%) of the 120 breastfeeding infants had normal vitamin D levels while 43 (35.8%) had hypovitaminemia. The mean plasma vitamin D concentration in breastfeeding infants was significantly higher than maternal plasma vitamin D concentration ($t=5.995$, $p<0.001$). There was a positive correlation between paired maternal and breastfeeding infant blood vitamin D concentrations ($r=0.282$, $p=0.002$).

Conclusion The findings from this study indicate that vitamin D deficiency is a major public health issue in this region. Therefore we recommend that efforts be made to implement vitamin D supplementation of exclusively breastfed infants and their mothers in this region.

G222 FASTING BLOOD TESTS IN CHILDREN? NO!

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Aims Fasting blood tests (FBTs) are unnecessary and potentially dangerous in children. They may lead to hypoglycaemia and collapse, or delayed diagnosis of type 1 diabetes mellitus

(T1DM) and even precipitate a more severe presentation of DKA. It is also dangerous to fast a child with suspected diabetes insipidus. Reasons for GP referrals for FBTs were reviewed.

Methods A retrospective audit was conducted in 2015, assessing all GP referrals to the paediatric outpatient department (POPD) for FBTs from April to December. Subsequently, the POPD staff advised parents that FBTs were not required when they booked their blood tests. A re-audit was undertaken in 2016 from April to December.

Results 88 children were referred for FBTs in 2015, with a 42% reduction to 37 referrals in 2016. Ages ranged from 17 months to 16 years. Referrals were made from 36 GP surgeries (2015) and 26 GP surgeries (2016). In 2016, referrals were made from 31 different doctors. In each cycle, 1 patient had hypoglycaemia. The rest of the results were in the normal range (table 1).

Abstract G222 Table 1 The most common reasons for FBT referrals (More than 1 reason for some patients)

Reason for FBT	Number referred	
	2015 (n=88)	2016 (n=37)
?T1DM	7 (8%)	4 (11%)
Hypoglycaemia/hypoadrenalism	1 (1%)	2 (5%)
Polyuria/polydipsia	21 (24%)	10 (27%)
Lethargy	11 (13%)	6 (16%)
Weight loss	6 (7%)	1 (3%)
Recurrent infections	10 (11%)	4 (11%)
Glycosuria	1 (1%)	0 (0%)

Conclusion Children were unnecessarily fasted: there were no positive results, however, there were two adverse outcomes of hypoglycaemia. Additionally, those with suspected T1DM were at risk of developing DKA.

Recommendations

- If suspecting T1DM, children should be referred to a paediatric team on the same day.
- A random blood glucose can be used for a diagnosis of T1DM.
- FBTs should not be undertaken for symptoms of hypoglycaemia.
- FBTs should not be undertaken in primary care settings as they can be dangerous.
- Regular updates/awareness (P)s for GPs regarding investigation of suspected T1DM and clinical risks of fasting in children.
- POPD staff should advise parents that FBTs are not required when they book in for blood tests.
- Re-audit.

G223

HIGHER PERCENTAGE OF INSULIN PUMP USERS ACHIEVABLE BY A SMALL TEAM! EXPERIENCE OF PAEDIATRIC DIABETES TEAM AT ISLE OF MAN (IOM)

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Introduction Continuous subcutaneous Insulin infusion (CSII) using pump has revolutionised the management of diabetes in children. Studies have demonstrated that better metabolic control could be achieved using insulin pump. NICE recommends use of insulin pump in children with poor metabolic control, disabling hypoglycaemia or clinical situations where MDI use is not practical.

National Paediatric Diabetes Audit (NPDA) reports serves as yardstick to compare individual unit performance against wider national data. The IOM, not part of NPDA cohort aims to provide highest quality of care by critically analysing its performances against national audit outcomes.

Aims

- To assess the prevalence of pump users and mean HbA1c on the Island
- Compare unit performance with NPDA report
- Identify the potential ways of promoting wider insulin pump use in T1D

Methodology Data of all diabetic patients from April 2015–March 2016 managed at Nobles hospital, IOM. Key outcomes such as age, percentage of pumps users, mean HbA1c, and prevalence of associated disorders was collected. All results were compared to NPDA report for the year 2015–2016.

Results [Combined England and Wales data in bold]

Total of 48 patients with T1D [M=25 (52%)] with a median age of 13.2 years (range 6.2–19.0) at the final point of data collection. The mean HbA1c was 63.3 mmol/mol [68.3], <58 mmol/mol was 31.2% [26.6%] and >80 mmol/mol was 6.2% [17.9%]. A total of 90% (43/48, 27-Animas, 15-Omnipod and 1-Medtronic who moved from UK) were on pump compared to 28% in England and Wales for the same period. Rest of them were on MDI. Associated coeliac disease (1) and thyroid disorder (1) was noted. There were 3 admissions of hyperglycaemia/ketosis during this period.

Conclusions

- Better glycaemic control is achieved in a smaller unit in spite of a very high percentage of pump users.
- Provision of only 2 different pumps helped in better utilisation of expertise and at the same time providing crucial choice for the users (tube Vs tubeless).

Though part funding from charity organisation helps in procuring the pumps, it does not guarantee long term sustainability and hence need for liberal funding options by NHS.

G224

DEVELOPMENT OF CARDIOVASCULAR RISK FACTORS IN CHILDREN WITH TYPE 1 DIABETES – A LONGITUDINAL COHORT STUDY

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Aims Cardiovascular disease is the leading cause of death in adult diabetes. Atherosclerosis is related to modifiable risk factors beginning in childhood but can be reversed. Screening for complications is recommended from 12 years in the UK.