69.2% (27/39) of 46,XY syndromic DSD. Variants in the AR, HSD17B3, NR5A1 and SRD5A2 genes were the most common causes of DSD. Other variants were identified in genes associated with congenital hypogonadotropic hypogonadism (CHH), including the CHD7 and PROKR2. 30 previously unreported pathogenic/likely pathogenic variants involving a total of 25 different genes were identified in 22.4% of the cohort. Remarkably 11.5% of the 46,XY DSD group carried variants classified as pathogenic/likely pathogenic variant in more than one gene known to cause DSD. The data indicates that variants in PLXNA3, a candidate CHH gene, is unlikely to be involved in CHH. The data also suggest that NR2F2 variants may cause 46,XY DSD.

P1-378

Assessment Of External Genitalia Change Over Time In Boys With XY Disorder Of Sex Development (DSD)

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Introduction: The external masculinisation score (EMS) has been utilised as an objective numerical description of the external genitalia in undermasculinised patients with DSD in several studies. However, data on longitudinal change in EMS in the routine clinical setting are lacking.

Objectives: To determine the longitudinal change in EMS and its determinants in a cohort of boys with XY DSD in one specialist centre.

Methods: Boys with XY DSD between 2010 and 2020 were included. Clinical information on initial (EMS1) and most recent EMS (EMS2), results of endocrine and genetic investigations, as well as genital surgery and testosterone therapy were obtained from medical records.

Results: 205 boys with median age at initial and last assessment of 0.8 yrs (range, 0.0, 18) and 4.9 yrs (0.4, 19.3), respectively ($p<0.0001$), were identified. Median follow-up time was 3.4 yrs (0.2, 17.3). Median EMS, out of 12, at first and last assessment was 8 (2, 12) and 11 (1.5, 12), respectively ($p<0.0001$). Surgery was performed in 170 (83%) boys whereas testosterone therapy was recorded in 11 (5%). Boys with combined genital anomalies were more likely to show an increase in EMS but less likely to achieve an EMS2 of 12 whereas those with undescended testes were more likely to achieve the EMS2 of 12 but also had greater chance to have EMS2 decreased due to orchidectomy. Of the 40 boys who had endocrine abnormality and a gene variant (n, 20) or not (n, 20), the median change (Δ) in EMS was 1.5 (0, 9) and 0.5 (-2, 4.5), respectively ($p=0.045$). ΔEMS, duration of follow-up and the number of surgical procedures did not differ between those with normal endocrine investigations and with or without a gene variant. Testosterone therapy was not associated with an increase in EMS whereas those who had surgery showed a significant increase in EMS.

Conclusions: The EMS in boys with XY DSD improves over childhood and adolescence. The change in EMS in boys with DSD is poorer in those who have a combination of both endocrine and genetic abnormality and also in those who are hypogonadal and require testosterone therapy.

P1-379

The effect of timing of puberty suppression on breast development in trans girls; a cross-sectional study

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Context: For transgender women undergoing gender-affirming hormone therapy (HT), breast development is an important treatment outcome. Since earlier studies showed small breast volumes in trans women treated with HT, we hypothesized that testosterone exposure during puberty might negatively influence breast development and that early initiation of puberty suppression (PS) might have a positive effect on breast development.

Aim: To investigate the influence of timing of PS and subsequent HT on breast volume, satisfaction with breast size, and self-esteem.

Methods: Twenty-three trans women who started PS in early puberty (Tanner stage G2-3), and 19 who started in late puberty (Tanner stage G4-5) were included. Twelve individuals who had breast augmentation were excluded (early pubertal n=5, late pubertal n=7). 3D-scans of the breasts were used to calculate breast volume. Participants filled out questionnaires on breast satisfaction and self-esteem.

Results: Mean age at time of study was 19.4±1.9 years in the early group and 21.0±1.8 years in the late pubertal group. Both groups had used HT for 4.2±1.6 years. BMI was higher in the late group (median 21.6, IQR 19.1 to 30.3) compared to the early group (median 18.9, IQR 17.7 to 21.2). Mean breast volume was 114 cc (IQR 58 to 203), i.e. bra cup-size <A. Breast volume was 47 cc (95% CI -9 to 104) larger in the late group but this difference was only 20 cc (95% CI -43 to 83) after correction for BMI. In total, 64% of subjects were satisfied with their breast size (57% vs 74% in the early and late group, respectively). Participants had a self-esteem score of 19.0 ± 4.3; the early group scored 2.9 points higher (95% CI 0.3 to 5.4) than the late group.

Conclusion: In this study, early start of PS was not found to result in larger breast volume. There even was a trend towards larger breast volume in the late pubertal group, but this seems related to a higher BMI. These findings suggest that pubertal testosterone exposure does not affect breast development during HT.

However, exclusion of those who had undergone breast augmentation may have introduced bias. Despite a higher satisfaction with breast size, the late pubertal group had lower self-esteem scores. This might be explained by other physical differences due to longer testosterone exposure. The impact of timing of PS on other breast characteristics, such as breast shape and positioning, deserves further study.

P1-380

Effect of long acting gonadotropin releasing hormone agonists on height outcome in children

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Gonadotropin releasing hormone agonists (GnRHa) stops premature sexual maturation in young children and preserve the potential of achieving acceptable adult height.

Aim: To assess the efficacy of long acting GnRHa in suppressing early pubertal development and its impact on height outcome in our patient population.

Methods: Records of children treated with GnRHa since 2018 at Hull University Hospital; UK were reviewed. Predicted adult height was calculated using the GrowthXP Endo electronic toolkit.

Results: GnRHa were given to 18 children, 12(67%) for precocious puberty (Group A), and 6(33%) in an attempt to optimise target adult height potential. All children were females. Mean age (years) at start of treatment was 7.6 ±1.2, and 9.8 ±0.75 for group A and B respectively. Group A duration of treatment (years) was 1.8±0.79 compared to 1.37±0.87 in group B. Within group A, mean difference between bone and actual age was 1.4±0.8 years. In both groups, 11 (61%) of the children had initial low dose 11.25mg Triptorelin injection followed by 22.5 mg dose, while 39% started on the 22.5 mg dose. Before and after treatment height difference (cm) was 131.8±2.9 Vs 139.2±10.7 ($p< 0.001$) in group A and 132.6±3.2 Vs 137.5±4.7 ($p<0.001$) group B. Predicted adult height Difference (cm) was 170.8±2.5 Vs 171.4±8 in group A ($p<0.001$) and 157.6±4.7 Vs 158.7±5.2 ($p<0.001$) in group B. Predicted adult height (cm) was higher at the end of treatment (161.2±7.7 Vs 160.7±7.1 $p = 0.001$). The treatment was universally tolerated well by our patients.

Conclusion: When commenced before 10 years of age, long acting GnRHa treatment increased potential height growth for girls treated for precocious puberty in our population.

P1-381

Gynaecomastia And Its Management In Partial Androgen Insensitivity Syndrome (PAIS)

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Introduction: In adolescents and men with PAIS, gynaecomastia has been reported in the majority but its management remains challenging.

Objectives: To assess the current management of gynaecomastia as well as clinical characteristics in male PAIS.

Materials and Methods: Retrospective review in the I-DSD registry of 46, XY male PAIS who were over the age of 10 years.

Results: Of the 205 cases in the I-DSD Registry from 26 centres who were over 10 yrs of age, information was available in 64 cases from 13 centres with a median number of cases per centre of 4 (range 1,16). The median age at first presentation was 0.9yrs (0.1,41.0). The median external masculinisation score (EMS) at presentation was 6 (2,12). Of the 64 participants, atypical genitalia were the presenting feature in 40 (63%), an AR variant had been identified in 48 (75%) and gynaecomastia was reported in 49 (77%).