extremities, from which the angle of knee joint extension was determined. Statistics were given as mean (SD = standard deviation). A paired t test was used to detect differences between scores. Statistical significance was determined as a p-value <0,05.

Main results Preoperative knee flexion deficiency ranged from 10 to 90°. Mean preoperative flexion contracture was 26.6° (SD= 18.9). After surgery knee flexion contracture (6.9°, SD= 10.4) has significantly decreased (p<0,05). Mean correction amount of flexion contracture was 77.7% (SD= 22.3%). Mean preoperative score of Gillette FAQ scale was 2 (SD= 1). After surgery mean Gillette FAQ score (3, SD= 1) has significantly improved (p<0,05). Three patients had following complications: synovitis knee joints after immobilization period, 20° and 60° knee joints extensor contractures at examination after one year since surgery. For patients of the reference group, the average angle of knee joint extension was 1 ° recurvation (SD=3).

Conclusions The obtained data indicate a rather high efficacy of surgical treatment both in terms of goniometric and functional indicators. However, the average angle of knee joint extension after surgery is significantly less than the reference value (p<0,05) and it is necessary to consider possible complications associated with requirement for long-term postsurgery immobilization.

GP12 DEVELOPMENTAL DYSPLASIA OF HIP – SCREENING WITHOUT RADIOGRAPHS; IS IT TIME?

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Background The optimum screening programme for developmental dysplasia of the hip remains elusive. Ireland has introduced a new national screening guideline based on selective USS.

Aim This study aims to determine the sensitivity of the new national guideline through a retrospective audit in one large teaching hospital.

Methods All infants referred for DDH imaging between 08/09/18 and 08/03/19 were included in the study. Infants with a normal USS (table 1) at 6 weeks were followed to radiograph at 6 months. A chart review of all infants with normal USS but abnormal or concerning radiograph was conducted to determine outcome.

Abstract GP12 Table 1

	DDH	No DDH	
Hip USS + ve	True Positive N = 61	Presume N = 0 as charts not reviewed	PPV - not calculated
Hip USS - ve	False Negative N = 61	True Negative N = 477	NPV = TN/FN + TN NPV = 88.6%
	Sensitivity = TP/TP + FN Sensitivity = 50%		

Results 716 infants (17.3% of births) were referred for imaging based on clinical exam and current risk criteria. Of these,

655 infants (91.5%) had normal USS hips at 6 weeks. At 6 months 158 infants (24%) with normal USS had an abnormal or concerning x-ray pelvis. 131 (11.6%) were subject to surveillance but later discharged. 61 (9.3%) remain under surveillance, 13 (2%) required bracing. 74 (11%) DNA'd follow up appointments. To date none of the infants who had a normal USS have required surgery.

Discussion and conclusion A retrospective audit using USS with the addition of radiograph identified a potential 0 - 9.3% false negative rate and a sensitivity of 50%. While these figures are concerning, following the 61 infants currently under surveillance is important. Should no infant with normal USS require surgery clinicians may be more confident in the new national guideline.

GP13 DIFFERENTIAL MIRNA EXPRESSION IN CF AND GENE CORRECTED IPSC-DERIVED LUNG ORGANIDS

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Background Cystic fibrosis (CF) is one of the most common lethal genetic diseases and is caused by mutations in the CFTR gene where a deletion of phenylalanine at position 508 (F508del) accounts for the most prevalent mutation worldwide. MicroRNA (miRNA) are small non-coding RNAs that can regulate up to two thirds of gene expression in human cells and have been shown to be dysregulated in the CF airway and implicated in the direct control of CFTR. Induced Pluripotent stem cells (iPSC) can be routinely generated from any patient and contain that person's unique genetic background, CF mutation and can form all the cell types affected by CF representing an attractive tool to advance the understanding of CF. Recent advances in iPSC technology have led to an *in vitro* platform of airway epithelial organoids derived from CF and CF-corrected cells for modelling CF lung disease however this model requires further molecular characterisation. We hypothesise that specific miRNA play a key role in the pathogenesis of CF lung disease and airway organoids generated from patient derived iPSCs can better elucidate this role.

Methods Cystic fibrosis patient specific iPSC derived airway organoids were generated from an individual homozygous for the F508del mutation (ΔF508/ΔF508) and its gene corrected counterpart (ΔF508/wild-type [WT]) using established protocols. Expression of a miRNA panel we have previously shown to regulate CFTR (miR-145, miR-223 and miR-494) were examined in CF versus CF corrected iPSC lines at Day 0 and Day 32 following directed differentiation of iPSC into proximal airway organoids.

Results In preliminary work we have observed that miRNA known to target CFTR are detectable in CF and gene-corrected iPSC lines and differential expression is observed between cells at the pluripotent stage (iPSC) at Day 0 and cells that have been differentiated in 3D as organoids to airway-like cells (bronchospheres) at Day 32. Importantly, there is differential expression of key CFTR related miRNA when we compare CF patient-derived bronchospheres to those where the F508del mutation has been corrected. Increased expression of miR-494 was observed in CF vs. CF corrected