tested, and to investigate if any of those features corresponded with a greater likelihood of predicting a genetic diagnosis. Information was obtained by accessing electronic clinical records. Of the 99 children who had genetic testing, 5 children were excluded due to insufficient available information. The characteristics that were assessed in the 94 remaining children included: hearing loss or visual problems either in the proband or in first degree relatives, proteinuria at the time of referral, family history of renal disease, abnormal renal function, hypertension and proteinuria, and a history of previous urinary tract infections. The probability of certain characteristics being associated with an underlying genetic diagnosis was evaluated by calculating likelihood ratios.

**Results**

Of the 94 children, 65% were male. Median age was 9 years (range 9 months-16 years). Median time from haematuria onset to referral to the tertiary nephrology centre was 7 months (range 1-108 months) and median time from referral to genetic testing was 8 months (range 1-86 months). 28% of the children were found to have an underlying genetic cause of their haematuria or had genetic variants of yet unknown clinical significance (VUS). In the children who had VUS, 38% of mutations were in COL4A3, 31% in COL4A4, 15% in COL4A5, 8% in COL4A6 and 8% in NPHS2. Of the characteristics analysed, co-existing visual problems demonstrated a notable increased likelihood of a genetic diagnosis (likelihood ratio=25). Co-existing family history of renal disease only led to a marginal increased likelihood of a genetic diagnosis (likelihood ratio=1.87).

**Conclusion**

This is the largest single centre review to date correlating clinical phenotype in children with persistent haematuria with COL4 genetic testing. From this we can infer that children who present with haematuria should have an early ophthalmological assessment and those who also have visual impairment should be prioritised for genetic testing to assess for variations in the COL4A genes as this increases the pre-test probability of a positive genetic result.

# Abstract 818

## CONGENITAL RENAL ANOMALIES AND URINARY TRACT INFECTIONS IN CHILDREN WITH SINGLE UMBILICAL ARTERY

**1Chun In Kuok, 2Stephanie Hui Fung Lai, 3Mei Lam Natalie Hsu, 4Mandy Hiu Ching Lam, 5Wai Hung Chung, 6Wing Tung Natalie Ho, 7Chi Kim Judy Kung, 8Kim Nam Karen Wong, 9Wei Ling Teresa Ma, 10Kiu Lok Siu, 11Winnie Kwai Yu Chan. 1Department of Paediatrics, Queen Elizabeth Hospital, 2Department of Obstetrics and Gynaecology, Queen Elizabeth Hospital**

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**Aims**

Single umbilical artery (SUA) is a congenital condition characterised by the presence of only one artery in the umbilical cord. Previous studies showed a higher prevalence of renal anomalies in these patients. Our study aims to describe the prevalence and characteristics of renal anomalies and urinary tract infections in patients with SUA in our locality.

**Methods**

All neonates with single umbilical artery who were delivered in our hospital between 1st January 2019 and 31st December 2020 were retrospectively reviewed. Clinical information and imaging on or before 31st December 2021 were analysed. Hydronephrosis was defined as dilated renal pelvis with anteroposterior diameter (APD) ≥ 5 mm. Urinary tract infections (UTI) were diagnosed based on positive bacterial culture from properly collected urine samples, and the presence of clinical features including fever and/or urinary symptoms.

**Results**

There were 46 patients delivered with single umbilical artery during the study period. Renal ultrasound scans were performed in 43 patients (93.5%) and were included for further analysis. There were 18 boys (41.9%) and 25 girls (58.1%). The majority (88.4%) were born at term.

The ultrasounds were performed at a median age of 2 months. Congenital renal anomalies were present in 5 patients (11.6%), including unilateral hydronephrosis in two, unilateral renal agenesis in two, and multicystic dysplastic kidney in one patient (table 1). Except a patient with mild hydronephrosis, the renal anomalies in the other four patients were evident during the antenatal scan. There was no significant difference between the gender, birth weight and gestational age between those with and without renal anomalies.

During a median follow-up time of 25.6 months, four patients developed urinary tract infections. The median age of first UTI was 5.3 (range 2.1 – 6.3) months old. Two of them (Patient 1 & 2) had underlying renal anomalies, and a grade 4 vesicoureteric reflux was subsequently identified in one patient.

**Conclusion**

Our study showed that 11.6% of patients with SUA had renal anomalies. Though the prevalence of renal anomalies seems to be higher than the normal population, most of these anomalies could be identified during antenatal check-up. Further studies with a larger sample size are required to ascertain the role of screening renal ultrasound in neonates with SUA who had unremarkable antenatal check-ups, and its relevance to the development of UTI.

## Abstract 818 Table 1

<table>
<thead>
<tr>
<th>Patient</th>
<th>Gender</th>
<th>Gestation</th>
<th>Renal anomalies</th>
<th>Shows in antenatal scans?</th>
<th>UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Female</td>
<td>37 weeks</td>
<td>Left hydronephrosis</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Male</td>
<td>38 weeks</td>
<td>Right renal agenesis, Left Grade IV VUR</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Male</td>
<td>38 weeks</td>
<td>Left hydronephrosis</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Male</td>
<td>33 weeks</td>
<td>Left renal agenesis</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>Female</td>
<td>38 weeks</td>
<td>Left MCDK</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Aim**

Establishing a paediatric ambulatory blood pressure monitoring (ABPM) service in a tertiary renal centre.

**Victoria Simpson, Rosalind Simpson, Emma O’Hagan, Tamara Mallett, Mairead Convery. Royal Belfast Hospital for Sick Children**

10.1136/archdischild-2022-rcpch.155

**Aims**

Increasing prevalence of hypertension in children and adolescents is a significant public health issue, with almost 20% of paediatric hypertension attributable to chronic kidney disease (CKD). Links between childhood hypertension and future target organ damage are well established, including increased cardiovascular and neurological morbidity and progression of established renal disease.

In children with end-stage renal disease (ESRD), an estimated 20-70% have uncontrolled blood pressure (BP). Adequate BP control is vital in prevention of progressive renal dysfunction and optimising graft survival in renal transplant recipients. Ambulatory Blood Pressure Monitoring (ABPM) is the gold standard in detection of true mean BP and prediction of cardiovascular outcome. National and International