INTRODUCTION

- Echogenic abdominal masses or foci are found on 0.4% of routine second trimester anatomy ultrasounds. Echogenic bowel is the most well studied and has been associated with infections, cystic fibrosis, fetal growth restriction or gastrointestinal obstruction.
- Echogenic intra-abdominal foci (EIAF) in other abdominal organs is less well known.

OBJECTIVE

To determine the association between (EIAF) of the kidney and perinatal outcomes.

METHODS

- Retrospective cohort study of 128 patients with EIAF from 2015-2017
  - Study group: Kidney EIAF
  - Control group: Non-kidney EIAF
- Primary outcomes: rate of intrauterine demise termination, genetic anomalies, fetal anomalies
- Secondary outcomes: NICU admission, rate of preterm birth, neonatal diagnoses
- Fischer exact tests used for analysis

RESULTS

- Kidney EIAF was associated with an increased risk for termination or intrauterine demise over non-kidney EIAF
- Kidney EIAF was associated with an increased risk of NICU admission (41.6% vs. 12.2%; p=0.0197) and an increased risk of severe neonatal diagnoses

CONCLUSION

Kidney EIAF is associated with:
- Genetic and non-genetic abnormalities antepartum results in termination or intrauterine demise.
- Higher risk of NICU admission and severe neonatal diagnoses when compared to EIAF of other organs in the fetus
This information should be considered when found on ultrasound in counseling patients with echogenic foci or findings of the kidney.

Table 1. Patient demographics (median)

<table>
<thead>
<tr>
<th></th>
<th>Kidney EIAF</th>
<th>Non-kidney EIAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>33</td>
<td>34</td>
</tr>
<tr>
<td>Gestational age</td>
<td>18</td>
<td>20.4</td>
</tr>
<tr>
<td>of diagnosis (weeks)</td>
<td></td>
<td></td>
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<tr>
<td>BMI (kg/m²)</td>
<td>25</td>
<td>26.9</td>
</tr>
</tbody>
</table>

Table 2. Pregnancy outcomes of kidney EIAF and non-kidney EIAF

<table>
<thead>
<tr>
<th></th>
<th>Kidney EIAF</th>
<th>Non-kidney EIAF</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IUFD/termination</td>
<td>7 (36.8%)</td>
<td>12 (11.0%)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Genetic anomalies*</td>
<td>3</td>
<td>2</td>
<td>0.63</td>
</tr>
<tr>
<td>NICU admission</td>
<td>5 (41.6%)</td>
<td>12 (12.2%)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Rate of preterm birth</td>
<td>3 (40.0%)</td>
<td>9 (9.2%)</td>
<td>0.12</td>
</tr>
<tr>
<td>Severe neonatal diagnoses</td>
<td>5 (41.6%)</td>
<td>7 (7.1%)</td>
<td>0.02</td>
</tr>
</tbody>
</table>

*Genetic anomalies of termination/IUFD
**110 patients were followed until delivery

EIAF breakdown by organ

- Bowel: 69
- Kidney: 19
- Liver: 11
- Spleen: 10
- Stomach: 10
- Abdomen: 7
- Other: 2