Introduction

- Prenatal prediction of biventricular circulation in patients with Borderline Left Ventricle (bLV) remains challenging.
- This study investigated the association of prenatal ultrasound parameters and outcome of patients with a prenatally diagnosed bLV.

Methods

- This was a retrospective two-center study of cases with bLV
- BLV was defined as $z$-scores of the left ventricle (LV) between -2 and -4
- Dependent outcome:
  - Univentricular Palliation (group 1)
  - biventricular correction (group 2)
  - biventricular circulation without surgical intervention (group 3)
- Statistical analysis was performed using Kruskal-Wallis, Fisher exact, Pearson-Chi-Square test and ROC curves.

Results

- There was a total of 59 patients diagnosed with bLV from 2010 to 2018
- There were significantly more patients with endocardial fibroelastosis in group 1 compared to group 2 and 3 (75 vs. 13.3 vs. 13.3 %), $p=0.016$.
- The majority of patients in group 2 (93%) and 3 (100%) showed an apex forming LV compared to group 1 (25%), $p=0.001$.

<table>
<thead>
<tr>
<th>Maternal Hyperoxygenation</th>
<th>Overall</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>59</td>
<td>4 (6.8)</td>
<td>40 (68)</td>
<td>15 (25)</td>
<td></td>
</tr>
<tr>
<td>Age (y), Median (IQR)</td>
<td>30 (10)</td>
<td>27 (10)</td>
<td>28.5 (10)</td>
<td>31 (6)</td>
<td>0.363</td>
</tr>
<tr>
<td>Gender (male)</td>
<td>28 (48)</td>
<td>3 (75)</td>
<td>19 (48)</td>
<td>6 (40)</td>
<td>0.528</td>
</tr>
<tr>
<td>Genetic</td>
<td>5 (9)</td>
<td>1 (25)</td>
<td>4 (10)</td>
<td>0 (0)</td>
<td>0.269</td>
</tr>
<tr>
<td>Extracardiac anomalies</td>
<td>8 (14)</td>
<td>1 (25)</td>
<td>7 (18)</td>
<td>0 (0)</td>
<td>0.163</td>
</tr>
<tr>
<td>MHO</td>
<td>26 (44)</td>
<td>1 (25)</td>
<td>15 (38)</td>
<td>10 (67)</td>
<td>0.137</td>
</tr>
</tbody>
</table>

Conclusion

- Most patients diagnosed with bLV maintained biventricular circulation.
- Apex forming LV and absence of EFE favour biventricular outcome.
- Prospective studies are necessary to establish valid ultrasound parameters for predicting biventricular outcome in this patient cohort.