Objectives

1. To explore the feasibility of DTI to track the germinal matrix (GM), corticospinal tract and corpus callosum in fetal post mortem MR, in relation with the maceration score.

2. The influence of the maceration score and timings between feticide, expulsion and MR scan on the fractional anisotropy.

Methods

- 3T-PMMR’s between 06/2017 and 12/2018
- Severe fetal abnormalities.
- Feticides for fetuses older than 20 weeks.
- No PM Fixation, but rapidly cooled.
- PMMR within 24h after expulsion (mean 7h15’)
- DTI: 60d, max b-value 1300 s/mm²
- MaS: whole body score (Montaldo / 0-1-2)
- Philips IntelliSpace Portal Software

Results

- Mean GA: 25w6d (16w4d – 33w5d)

<table>
<thead>
<tr>
<th>MaS</th>
<th>Tfe</th>
<th>Tes</th>
<th>Tfs</th>
</tr>
</thead>
<tbody>
<tr>
<td>FA CC</td>
<td>0.95</td>
<td>0.43</td>
<td>0.76</td>
</tr>
<tr>
<td>FA TCS R</td>
<td>0.12</td>
<td>0.33</td>
<td>0.09</td>
</tr>
<tr>
<td>FA TCS L</td>
<td>0.154</td>
<td>0.33</td>
<td>0.19</td>
</tr>
<tr>
<td>FA GM L</td>
<td>0.38</td>
<td>0.56</td>
<td>0.34</td>
</tr>
<tr>
<td>FA GM R</td>
<td>0.64</td>
<td>0.28</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Table 1: Maceration scores

Table 2: p-values of the effect of the MaS, Tfe, Tes and Tfs on the FA of the CC, TCS and GM on the FA-values

Conclusion

When tracks are spared from pathology, it is feasible to calculate the CC, TCS and GM FA using DTI, independent from the MaS and time between feticide, expulsion and scan.