MC twins: learning curve of ultrasound guided bipolar umbilical cord occlusion

KV Schou, LN Jensen, C Jørgensen, K Sagaard, A Tabor, K Sundberg
Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark

Objective
To determine a learning curve of ultrasound guided bipolar umbilical cord occlusion (UCO) for selective feticide in complicated monochorionic (MC) multiple pregnancies, at the National Centre for Fetal Therapy at Rigshospitalet - Denmark.

Methods
102 pregnancies: 97 MC twin pairs, and five dichorionic triplets, treated with UCO at Rigshospitalet between 2004 and 2015 were included. Procedures were performed by a team of four operators, two present at each procedure. To determine a learning curve, the procedures were divided into two periods: Period 1 (2004-9) and Period 2 (2010-15). The two periods were compared with respect to survival rate of the remaining fetus(es), as well as gestational age (GA) at procedure and delivery, and proportion of cases treated for twin-to-twin transfusion syndrome (TTTS). Both one and two survivors were accounted for as one. Abortions, stillbirths and neonatal deaths were defined as no survivors. Chi-square test with Yates’ correction was used for statistical comparison.

Results
Period 1 consisted of 59 cases, 83% included TTTS diagnosis, median stage Q3. Median GA at procedure was 19+6 weeks (range 17+0 – 25+5) and at delivery 34+4 weeks (23+6 – 40+2). Period 2 consisted of 43 cases, 53% included TTTS, median stage Q3. The median GA at procedure was 20+5 weeks (16+5 – 27+4) and at delivery 37+1 weeks (29+1-40+2). Three cases were lost to follow up. The rate of pregnancies with survival of the remaining fetus(es) increased significantly from 78% to 95% (p=0.0387).

Conclusion
In the second six-year period, a higher proportion of women had a livebirth at a higher GA. We believe this reflects a learning curve, however, a less anxious approach towards prolonging pregnancy and the smaller proportion of TTTS cases, in period 2, may also contribute to this difference.