

Prenatally diagnosed head and neck teratoma with or without EXIT: an individual patient data meta-analysis

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Objectives

To investigate characteristics of fetal head and neck teratomas, their associations with postnatal death, and the impact of ex-utero intrapartum treatment (EXIT) on outcomes.

Methods

A systematic search of four databases was conducted to identify pregnancies with prenatally diagnosed fetal head and neck teratomas, including only those with more than three cases. The primary outcome was survival at hospital discharge, which we analyzed using individual patient data meta-analysis (IPDMA).
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Results

Twenty-seven studies involving 126 prenatally diagnosed head and neck teratomas were included.

- EXIT group (n=77):
 - All were alive at birth.
 - Postnatal mortality occurred in 30.5%.
 - 33.3% were discharged home with a tracheostomy.
 - Postnatal deaths were mainly associated with cervical teratomas >12 cm, with hydrops present in 11.8%.
- Non-EXIT group (n=49):
 - Polyhydramnios was observed in 43.2%.
 - Hydrops occurred in 14.6%.
 - Postnatal death occurred in 18.2%, typically with tumors >7 cm and hydrops present in 20%.

Outcome	Mean (SD) or n/total n	EXIT (IRR, CrI)	P value	Mean (SD) or n/total n	No-EXIT (IRR, CrI)	P value
GA at diagnosis	24.75 (4.76)	0.87 (0.72 – 1.04)	0.13	26.26 (7.02)	1.06 (0.88 – 1.27)	0.53
Maximum Diameter (cm)	106.66 (20.81)	1.06 (.99 – 1.15)	0.06	147.25 (23.63)	1.06 (.09 – 1.15)	0.06
GA at delivery	33 (3.46)	0.70 (0.48 - .92)	0.01	32.13 (2.27)	0.78 (0.49 – 1.16)	0.23
Polyhydramnios	11/32	1.32 (0.47 – 4.03)	0.61	3/14	1.95 (0.31 – 12.59)	0.46
Hydrops	2/3	2.12 (0.27 – 14.54)	0.45	1/3	1.2 (0.07 – 9.90)	0.89
Data presented as mean (SD) for continuous and n/total n for categorical variables. cm = centimeters, CrI = credible interval, EXIT = ex-utero intrapartum therapy, IRR = incidence rate ratio, SD = standard deviation						

Conclusion

Larger head and neck teratomas are associated with increased postnatal mortality, irrespective of EXIT procedure use. While EXIT successfully secures the airway at birth, it does not eliminate long-term respiratory complications. Future research should aim to enhance prenatal risk assessment and optimize the timing of delivery to improve survival rates and long-term outcomes.