

Perivable Breech Delivery Decision Analysis

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Background/Objective: The optimal mode of delivery (MOD) for malpresentation in perivable deliveries (22-24 weeks), remains a source of debate. Neonatal and maternal complications can arise from both vaginal (VD) and cesarean delivery (CD), and the threat of maternal morbidity extends to subsequent pregnancies. It has been difficult to compare these risks while counseling patients about MOD options, so we sought to create a decision tree that maps probable outcomes associated with breech deliveries at 23- and 24-weeks' gestation, as well as complications posed for subsequent pregnancies.

Methods: An extensive literature review was conducted to identify risk estimates of perivable maternal and neonatal outcomes, along with elective repeat CD (ERCD) and trial of labor after cesarean (TOLAC) for subsequent pregnancies. Probabilities were inputted into TreeAge software, starting with primary maternal health states that may result from CD and VD – “death”, “hysterectomy”, or “no hysterectomy”, followed by the probability of neonatal health states– “death”, “severe morbidity”, or “no severe morbidity”. The likelihood of placenta previa or normal placenta was considered for subsequent pregnancies. We factored in the possibility of ERCD or TOLAC and the associated maternal and neonatal risks for each.

Results: Final design of the tree is complete and risk estimates have been inputted. Primary analysis and sensitivity analyses are planned for August 2021. Ultimately, we will also be able to use measured utility values to calculate quality adjusted life years (QALYs) for each health state.

Conclusion and Clinical Impact: Whether CD or VD is optimal for breech presentation in perivable delivery is influenced by a complex array of factors, including future reproductive plans and maternal values related to potential neonatal and maternal morbidity and mortality. Quantifying risks associated with each MOD will aid providers in their efforts to help families make informed decisions and reduce morbidity across the reproductive lifespan.