Elective caesarean section for women living with HIV

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Key Findings

Altogether, data from a single RCT and multiple observational studies indicate that elective caesarean section (ECS) reduces the risk of infant HIV infection in the absence of ART. However, the association between ECS and infant HIV infection was non-significant in most stratified analyses of studies conducted in the combination Antiretroviral Therapy (cART) era and among women on cART, women with higher CD4 counts or lower VLs, and women whose deliveries were at term. Limited data on other maternal outcomes and infant health outcomes do suggest increased maternal and infant morbidity associated with ECS compared with vaginal birth, as is seen with HIV-uninfected women. However, many outcomes were relatively minor or less problematic with accurate dating of pregnancy and ECS at term. The risk-benefit ratio of ECS likely depends upon the underlying rate of vertical HIV transmission, as well as the risks of both maternal and infant morbidities and mortality associated with ECS and other modes of delivery.

Evidence included in this review

Data from 25 articles, representing approximately 17 studies, were included in the analyses. One study was a RCT. The remaining studies were observational designs, mostly prospective cohort studies that followed infants after delivery to assess infant HIV infection outcomes. Follow-up periods ranged from one month to three years; 27 of the 36 included articles had follow-up periods of 18 months or longer.

Quality assessment

The RCT was not blinded (due to the impossibility of blinding mode of delivery), but had limited attrition and received low risk of bias judgments across measures on the Cochrane Risk of Bias tool. Funnel plots did not indicate publication bias. Heterogeneity was not substantially significant in most meta-analyses.

Clinical Implications

The findings from this review suggest routine ECS for women living with HIV may not be appropriate; instead, individual patients and clinicians should consider the risks and benefits for specific clients, and women’s autonomy to choose their mode of delivery should be respected.

Further research
The systematic review found only three studies from sub-Saharan Africa, and while one study from Kenya reported on maternal mortality, none reported on maternal or infant morbidity outcomes other than HIV infection. Future studies from sub-Saharan Africa and other LMICs would help to clarify the risks and benefits in such settings and provide useful evidence for policy-makers.

References


Abstract

Objective and design: To inform World Health Organization guidelines, we conducted a systematic review and meta-analysis to assess maternal and perinatal outcomes comparing cesarean section before labor and rupture of membranes (elective csection/ECS) with other modes of delivery for women living with HIV.

Methods: We searched PUBMED, CINAHL, Embase, CENTRAL, and previous reviews to identify published trials and observational studies through October 2015. Results were synthesized using random-effects meta-analysis, stratifying for combination antiretroviral therapy (cART), CD4/viral load (VL), delivery at term, and low-/middle income countries (LMICs).

Results: From 2567 citations identified, 36 articles met inclusion criteria. The single randomized trial, published in 1999, reported minimal maternal morbidity and significantly fewer infant HIV infections with ECS (OR:0.2, 95% CI:0.0-0.5). Across observational studies, ECS was associated with increased maternal morbidity compared with vaginal delivery (OR:3.12, 95% CI:2.21-4.41). ECS was also associated with decreased infant HIV infection overall (OR:0.43, 95% CI:0.30-0.63) and in LMICs (OR:0.27, 95% CI:0.16-0.45), but not among women on cART (OR:0.82, 95% CI:0.47-1.43) or with CD4<200/VL<400/term delivery (OR:0.59, 95% CI:0.21-1.63). Infant morbidity moderately increased with ECS.

Conclusions: While ECS may reduce infant HIV infection, this effect was not statistically significant in the context of cART and viral suppression. As ECS poses other risks, routine ECS for all women living with HIV may not be appropriate. Risks and benefits will differ across settings, depending on underlying risks of ECS complications and vertical transmission during delivery. Understanding individual client risks and benefits and respecting women's autonomy remain important.

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