

Title: 39 Week Labor Induction versus Expectant Management and Cesarean Section Rates in Low-Risk Multiparous Women: A Multicenter Retrospective Cohort Study

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Background/Synopsis

The ARRIVE Trial, published in 2018 in the New England Journal of Medicine, was a groundbreaking study that changed the opinion concerning elective induction of labor (IOL) at 39 weeks of gestational age for low-risk nulliparous women. The secondary outcome of the study demonstrated that IOL resulted in a significantly lower frequency of cesarean delivery (18.6% of patients in the IOL group versus 22.2% in the expectant management group (OR 0.84; 95% CI 0.76-0.93)). Research following the ARRIVE trial has supported these findings, however, these studies are limited by only including nulliparous patients and using data collected prior to the publication of the ARRIVE trial.

Objective/Purpose

Our study aimed to compare the rate of cesarean delivery in multiparous patients who underwent elective induction of labor at 39 weeks EGA versus multiparous patients who underwent expectant management across multiple states and hospital settings.

Methods

We used retrospective, secondarily sourced data from Hospital Corporation of America's electronic data warehouse. Delivery information was collected from 101 participating hospital centers across 19 states nationwide.

Results

Between January 1, 2021 and April 30, 2024, we recorded 16,411 low-risk, multiparous patients who fulfilled the inclusion criteria. The primary outcome, cesarean delivery, occurred in 1.49% of the induction group and 3.02% of the expectant management group (OR 2.62; 95%, CI 2.07-3.32, p-value < 0.001). Further, while not statistically significant, logistic regression revealed for each additional prior live birth, the odds of cesarean delivery decreased by 0.95 (OR 0.95; CI 0.88-1.03, p-value 0.221). For each additional point increase in Bishop score, the odds of c-section decreased by 0.70 (OR 0.70; CI 0.75-0.83, p-value < 0.001).

Conclusion

This multicenter study supports the findings from the ARRIVE trial's secondary outcome with a high degree of external validity. Elective induction of labor at 39 weeks gestational age reduces the risk of primary cesarean delivery in multiparous patients.