A Retrospective Observational Study of the Outcome of Uncomplicated Pregnancies beyond 39 weeks

Mohamad Zakaria Sabiha, Math Vanitha, Florance Marie
Gold Coast University Hospital, QLD

Objective

The traditional management of uncomplicated term pregnancy is to await spontaneous labour or induction of labour (IOL) beyond 41 weeks of gestation. The recent ARRIVE[1] study challenged this concept, demonstrating that IOL at 39 weeks does not change perinatal outcome and might in fact improve maternal outcome in the form of reduced caesarean sections.

These findings have yet to be incorporated into guidelines, although we cannot help but notice a subtle change in the attitude towards low-risk term pregnancies and the increasing questions that come with it. Women seek informed decision-making today more than they ever did- should we therefore offer 'evidence-based' IOL at 39 weeks? Can public health afford the cost and resources needed, especially compared to private practice? Is IOL the easy answer to even the most trivial problems beyond 39 weeks?

Our retrospective observational study investigates the outcome of uncomplicated pregnancies beyond 39 weeks and we compare our data to the ARRIVE control group to assess the study's applicability to our mixed-risk tertiary institution.

Method

We went through the individual maternal and baby notes of **1007** consecutive uncomplicated births at our tertiary centre prior to the ARRIIVE study publication.

Inclusion criteria: Nulliparous and multiparous women aged under 40 with uncomplicated singleton cephalic pregnancy until 39 weeks

Exclusion criteria: booked caesarean section (CS), pre-existing maternal and fetal problems incl. previous CS, growth restriction, hypertension, maternal medical condition e.g. epilepsy, fetal malformations, etc.

Reference

1. Grobman W et al. (2018) Labor Induction versus Expectant Management in Low-Risk Nulliparous Women. *N Engl J Med* 2018; 379:513-523

BASELINE CHARACTERISTICS		Entire cohort (Nullip + multiparous) n= 1007	Nulliparous cohort only n= 669	Expectant mngmt (nulliparous) cohort in ARRIVE
Median age, years • Age> 35 (%)		29 yrs • 11.1%	29 yrs • 11.7%	23yrs • 4.5%
Mean BMI (range) • BMI>30 (%)		25 (17.1- 50.4) • 18.3%	24 (17.1-47.3) • 13.6%	30.3 • 52%
Ethnicity (%)	Caucasian Asian Indigenous Hispanic & African	75.9 10.1 6.4 1.0	77.0 10.6 5.1 0.8	44.6 3.5 0.0 49.5
Smoking (%) IVF (%)		6.5 3.7	6.2 2.1	8.0 2.3

NEONATAL OUTCOME			
Median gestation at delivery, weeks	40.0	40.0	40.0
Neonatal death, % Seizure HIE, % APGAR <3 at 5 mins, % Hypotension requiring vasopressor support, %	0 0 0 0	0 0 0 0	0.1 0.8 0.6 0.2
Respiratory support incl. Intubation & CPAP, %	2.5	3.0	4.2
Suspected or confirmed infection, %	2.0	2.4	0.4
Meconium aspiration syndrome, %	0.2	0.3	0.9
Intracranial or subgaleal haemorrhage	0.2	0.3	0.2

MATERNAL OUTCOME				
Maternal Death ICU admission		0 1 (0.1%)	0 0	0 % 0.3%
Mode of delivery %	• CS • Operative vaginal delivery	14.0 % 21.1 %	19.4 % 29.0 %	22.2% 8.5%
Peripartum issues (n, %)	• Hypertensive disorders • Chorioamnitis	63 (6.3%) 79 (7.8%)	57 (8.5%) 74 (11.1%)	14.1% 14.1%
3rd and 4th degree tears		2.2%	2.8%	2.9%
PPH (over 1.5L %)		20.3% (3.1%)	22.4 % (3.6%)	4.5%
Postpartum infection (incl. CS &perineal wound, endometritis)		3.7%	4.8%	2.1%

Discussion

Baseline characteristics of our nulliparous cohorts differ from that of ARRIVE.

- Our women were older, of lower BMI and fewer smoke. The ethnic make-up was also very different. Our cohort was predominantly Caucasian (77% vs 45%) and 10% were Indigenous. African/Hispanic make up 49.5% of the ARRIVE cohort (vs <1% in ours)

Neonatal outcome:

- Major adverse neonatal outcome (e.g. death, seizure) were absent in our cohort, likely owing to its rarity and our relatively smaller cohort, but were also rare in the ARRIVE group
- Respiratory support and meconium aspiration was more common in ARRIVE cohort, while infection more higher in ours.
- All groups delivered at the median gestation of 40 weeks

Maternal outcome:

- Major adverse maternal outcome (e.g. death, ICU) were equally small in both groups.
- Our cohort has a lower CS and much higher operative vaginal delivery rate. We also had a lower incidence of peripartum fever and hypertensive issues after 39 weeks, but a higher PPH rate.

The baseline characteristics of the cohorts are noticeably different and the outcome of our nulliparous group, albeit a small group, does not not necessarily match that of the nulliparous women in the expectant arm of the ARRIVE study, hence limiting the applicability of the study to our local population.

Our study highlights the importance of critical analysis of evidence prior to its application to local clinical practice.