

---

IMPORTANT COPYRIGHT NOTICE: This electronic article is provided to you by courtesy of Ferring Pharmaceuticals. The document is provided for personal usage only. Further reproduction and/or distribution of the document is strictly prohibited.

---

**Title:**

Choices in managing full-term pregnancy

**Authors:**

Greene MF

**Journal:**

The New England Journal of Medicine 2018

## EDITORIALS

LICENSED BY  
COPYRIGHTAGENCY

You must not  
copy this work  
without permission

Tel: +612 9394 7600



## Choices in Managing Full-Term Pregnancy

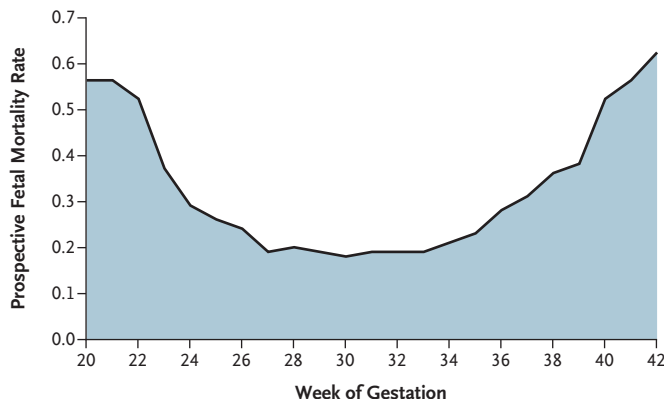
Michael F. Greene, M.D.

The distribution of the length of gestation at delivery in the United States has changed dramatically over the past 25 years. The percentage of all deliveries during the 39th or 40th week of gestation has increased, while the dispersion around that peak has narrowed considerably; this change is even more dramatic for singleton pregnancies. In 2015, a total of 60.2% of all singletons were delivered during the 39th or 40th week, 7.1% were delivered at 41 weeks or later, and 0.4% were delivered at 42 weeks or later (a decline from 0.6% in 2007).<sup>1</sup> Yet perinatal mortality at 41 weeks of gestation or later has increased (from 3.5 per 1000 deliveries in 2007 to 5.9 per 1000 deliveries in 2015).

Recognition of the fact that, among full-term fetuses, mortality is at its minimum at 39 weeks

and increases with progression beyond 41 weeks (Fig. 1)<sup>2</sup> has stimulated interest in elective induction of labor at 39 weeks of gestation. Enthusiasm for routine elective induction has been tempered by concerns that the practice might increase the rate of operative deliveries and because of deference to a perceived public preference for a less interventionist approach to the management of healthy pregnancies at full term. A recent Cochrane meta-analysis of 20 randomized trials suggested that a policy of routine induction of labor at 39 weeks would not increase the risk of operative deliveries and might reduce the perinatal mortality rate.<sup>3</sup> Among these studies was a randomized trial conducted in the United Kingdom that compared induction of labor at 39 weeks with expectant management among 619 women 35 years of age or older; the trial showed that induction did not result in a higher rate of operative deliveries and did not adversely affect women's perceived experience of childbirth.<sup>4</sup>

In this issue of the *Journal*, Grobman et al. report the results of a randomized trial involving healthy women with singleton pregnancies and without indication for cesarean delivery at 41 obstetrical centers in the United States participating in the Eunice Kennedy Shriver National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network.<sup>5</sup> Women were randomly assigned in a 1:1 ratio to either routine induction of labor from 39 weeks 0 days to 39 weeks 4 days of gestation or to expectant management until 40 weeks 5 days, with delivery initiated no later than 42 weeks 2 days. The primary outcome was a composite of perinatal death or severe neonatal complications. The trial planned to enroll 6000 women to provide ade-



**Figure 1. Prospective Fetal Mortality Rate According to Week of Gestation.**

The prospective fetal mortality rate was calculated as the number of fetal deaths at a given gestational age per 1000 live births and fetal deaths at that gestational age or greater. Adapted from MacDorman and Gregory.<sup>2</sup>

quate power to detect a 40% lower rate of this outcome in the induction group than in the expectant-management group; the anticipated rate of the primary outcome was 3.5% in the expectant-management group.

More than 50,000 women were screened for eligibility, more than 44,000 were excluded, and more than 16,000 declined to participate. Data from the National Center for Health Statistics suggest that the trial participants differed from the general population of women who delivered in the United States in 2016.<sup>6</sup> Participants in the trial were younger, with a median age of 23 to 24 (vs. a mean age of 28.7 years for all U.S. mothers), and 4.1% were 35 years of age or older (vs. 17% for all U.S. mothers). Participants in this trial were less likely to be white and more likely to be black or Hispanic than women who delivered in the United States in 2016.<sup>6</sup>

The rate of the primary outcome was 5.4% in the expectant-management group (greater than expected) and 4.3% in the induction group; this represented a 20% lower rate that was not significant at the prespecified  $P < 0.046$  level. The difference between the groups in the primary outcome was driven by a 29% lower rate in the requirement for respiratory support among neonates whose mothers were in the induction group than among those whose mothers were in the expectant-management group. In addition, there was a significantly lower rate of cesarean delivery, the principal secondary outcome, in the induction group than in the expectant-management group (18.6% vs. 22.2%) and 35% fewer diagnoses of hypertensive disorders of pregnancy. The overall length of mothers' hospital stay was shorter in the induction group (owing to the lower rate of cesarean delivery in this group), but

this contrasted with a longer stay in the labor and delivery unit (a median of 20 hours, vs. 14 hours in the expectant-management group).

Readers can only speculate as to why so many women declined to participate in the trial and what implications the demographics of the participants may have for the generalizability of the trial results and the acceptability of elective induction of labor at 39 weeks among women in the United States more generally. If induction at 39 weeks becomes a widely popular option, busy obstetrical centers will need to find new ways to accommodate larger numbers of women with longer lengths of stay in the labor and delivery unit. These results across multiple obstetrical centers in the United States, however, should reassure women that elective induction of labor at 39 weeks is a reasonable choice that is very unlikely to result in poorer obstetrical outcomes.

Disclosure forms provided by the author are available with the full text of this editorial at NEJM.org.

From the Department of Obstetrics and Gynecology, Massachusetts General Hospital, Boston.

1. Ananth CV, Goldenberg RL, Friedman AM, Vintzileos AM. Association of temporal changes in gestational age with perinatal mortality in the United States, 2007-2015. *JAMA Pediatr* 2018; 172:627-34.
2. MacDorman MF, Gregory EC. Fetal and perinatal mortality: United States, 2013. *Natl Vital Stat Rep* 2015;64:1-24.
3. Middleton P, Shepherd E, Crowther CA. Induction of labour for improving birth outcomes for women at or beyond term. *Cochrane Database Syst Rev* 2018;5:CD004945.
4. Walker KF, Bugg GJ, Macpherson M, et al. Randomized trial of labor induction in women 35 years of age or older. *N Engl J Med* 2016;374:813-22.
5. Grobman WA, Rice MM, Reddy UM, et al. Labor induction versus expectant management in low-risk nulliparous women. *N Engl J Med* 2018;379:513-23.
6. Martin JA, Hamilton BE, Osterman MJK, Driscoll AK, Drake P. Births: final data for 2016. *Natl Vital Stat Rep* 2018;67:1-55.

DOI: 10.1056/NEJMe1807747

Copyright © 2018 Massachusetts Medical Society.