

# Vaginal Delivery: A Day-Care Procedure with the use of Day-Care Delivery Protocol

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## ABSTRACT

**Objectives:** To know the feasibility of safe activation and augmentation of labor with close monitoring leading to favorable fetomaternal outcome, as a day-care procedure using the day-care delivery (DCD) protocol.

**Materials and methods:** Inclusion of a select subset of 304 primi women at term was done for labor activation and augmentation, in a closely monitored fashion, followed by assessment of outcomes and follow-up.

**Results:** Almost 70% of the selected primi women delivered vaginally within the stipulated time of 12 to 15 hours and only 18% needed cesarean section. No perinatal mortality was observed.

**Conclusion:** Day-care delivery may prove to be a suitable option to the parturient and her obstetrician ensuring quality labor and optimal perinatal outcome.

**Keywords:** Vaginal delivery, Day-care delivery, Day-care-procedure, Recent advances, Shruti malvi, Trigger criteria, Cesarean section.

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## INTRODUCTION

Advances in medical science all over the globe aim at predictable, planned, personal and positive outcome in patient management, with least invasive management protocol.<sup>2,7</sup> We have largely succeeded, except probably obstetrics, which still remains the most unnoticed, unpredictable and neglected process.<sup>1</sup> In an effort to combat this problem, we started a closely monitored activation and augmentation of labor that we call-the day-care delivery (DCD) using a set DCD protocol, with subsequently favorable outcomes, without waiting for the complications to actually set in.<sup>7,8</sup>

### The Concept of DCD

Day-care delivery can be defined as a planned activation and augmentation of labor at term gestation, managed with the intention of vaginal delivery before nightfall. It can result in a safe and predictable fetomaternal outcome in a manner which is very personal to the patient.<sup>2</sup>

Here, with the DCD protocol, we aim at cutting short the unpredictable latent phase, pushing the parturient forward to enter the active phase, in a planned and thus more predictable

manner.<sup>7</sup> A soft and favorable cervix becomes responsive and<sup>5</sup> thereby facilitates the momentum of the ongoing labor progress. Once achieved, the active phase will take its own natural course. Such mode of delivery gets the women to resume their duties faster both in personal and professional fronts, thus making both the rural as well as urban clientele more receptive to the idea.<sup>7,8</sup> The benefits of the DCD option as opposed to the conventional vaginal deliveries can be enumerated thus:

- From the patient's perspective, it is a planned admission, less transportation problems, family support available.
- From the hospital perspective, senior medical and nursing staff will be available when the patient arrives. Advantages of day care are always there, everything is planned and help is at hand in the form of neonatologist, anesthetist, blood, pathological investigations, etc. compared to that in the odd and beyond office hours. Hence, the emphasis changes from masterly inactivity and watchful expectancy to masterly activity and watchful expectancy. So, the bottom line is vaginal delivery, as a day-care procedure, is the need of the day.

## REVIEW OF LITERATURE

Janani Suraksha Yojana, a government run program, aims at getting the people motivated for institutional deliveries, making the transit easier, aiding in a decrease in perinatal mortality and morbidity.<sup>3</sup>

According to Daftary et al, labor can be induced and augmented safely. They induced 200 parturients, 194 delivered vaginally, with an average active stage lasting for 3.5 hours, and there was no perinatal mortality or complications.<sup>7</sup>

Obstetric complications are grossly reduced by regular antenatal visits, availability of monitoring devices during delivery, availability of drugs which are safe and time-tested, thus making the outcome of pregnancy reasonably uneventful and with insignificant complications as per Warke's study, of prostaglandin E2 for cervical ripening and induction of labor.<sup>5</sup>

Induction of labor beyond 37 weeks of pregnancy can reduce perinatal mortality (death before, during or shortly after birth) without increasing cesarean section rates, as found in a study published on the *British Medical Journal* on May 10th, 2012.<sup>1</sup>

Elective induction does not appear to pose an increased risk to the mother or her fetus in a carefully selected patient population as published in the *Journal of Obstetrics and Gynecology of India* [Vol 61(6) Dec 2011].<sup>2</sup>

Cesarean sections are now an accepted part of delivery in situations where neonatal and maternal risk is anticipated, or

vaginal delivery does not seem possible, with almost 26 to 30% lower, segment cesarean section (LSCS) rates as per the WHO report (on 12th Jan, 2010).<sup>4</sup>

## MATERIALS AND METHODS

A carefully and precisely selected group of pregnant women were identified, age ranging from 18 to 35 years, residing at places in a range of 100 km, term with gestational age not less than 37 weeks. All were properly registered with us, from the first trimester, height 4'8" to 5'6", mean of 5 feet, weight at the first antenatal visit in the beginning of first trimester, 35 to 60 kg with mean of 40 kg. The socioeconomic status, ranging from lower to higher, mostly lower middle and middle socioeconomic strata, literacy from completely illiterate to postgraduation, mostly middle school, with clinically adequate pelvis, admitted with normal vital parameters, with no obvious medical illness, like cardiac or respiratory, diabetes mellitus, hypertension, etc. (some did have borderline hypertension) Pathological findings were within normal limits, preadmission ultrasonographic (USG) findings showed amniotic fluid index not less than 8 to 10 at the time of admission, cephalic presentation, uterus irritable, head at brim, Bishop's score 4-5, i.e. 1 cm dilated, 40 to 50% effaced, membranes intact, mid-posed, firm to soft in consistency and - 1 to 0 station.

Fetal Heart Sound (FHS): regular, 120-160 bpm.

Clear dates for admission in the hospital were given and the women were taken up further as per the DCD protocol.

## DCD Protocol

The DCD protocol is a comprehensive process which involves adequate counseling and informed consent with application of DCD criteria prior to admission. This is followed by activation of labor under close monitoring with assessment of outcomes and routine follow-up.<sup>1,2</sup>

Patient selection begins during the first antenatal visit in a healthy. ANC inclusion depends on her willingness after DCD counseling.

Gestational age of  $\geq 38$  weeks, uncomplicated pregnancy, clinically adequate pelvis, suitable USG findings, suitability/qualifying for trial of labor and informed consent form the checklist prior to DCD. After admission, the active phase is triggered once the DCD trigger criteria are fulfilled. This is the final check, which includes the following:<sup>10</sup>

## DCD Trigger Criteria

Regular (FHS), irritable uterus, cephalic presentation, intact membranes, head at brim, Bishop's scale 4 to 5.

Once the trigger point is confirmed, labor is activated with intracervical dinoprostone instillation under close monitoring. Oxytocin drip<sup>5</sup> commenced as indicated. Artificial rupture of membranes (ARM) was done at a 3 cm dilated >50% effaced soft cervix. Augmentation was continued and aided by drotaverine and epidosis injections an hour apart.<sup>6,9</sup> All being well patient was expected to deliver by late evening.

## RESULTS

A total of 304 patients were subjected to this protocol, 212 delivered vaginally by the stipulated time of 12 to 15 hours, in 37 patients reinstillation was required, the next day, in 12 cases, labor was prolonged, in 17 cases, LSCS needed to be done on day 1 mainly due to fetal distress and meconium-stained liquor, and in 32 cases, LSCS was done on the 2nd day for fetal distress or nonprogress of labor. (Table 1)

Out of the 304 primis included in the series, appreciable percentage of patients, i.e. 69.74% (212 patients), delivered vaginally by the stipulated time. Only 11.8% took longer time, but with favorable outcome. A total of 18.4% patients were delivered by LSCS of which 5.5% underwent LSCS on day 1 and 12.8% on the following day. Overall, there was no perinatal mortality in the study and no significant complications.

## DISCUSSION

In our series with the use of the DCD protocol, women were motivated to come at a predecided time, for hospital admission, which became possible with regular antenatal visits, preparing their mind sets for the same during the period, which was the whole idea behind the Government run Janani Suraksha Yojana<sup>3</sup> for propagating institutional deliveries. A total of 304 patients were subjected to the DCD protocol and 212 delivered in the stipulated time. This number is slightly less than that of Chauhan et al owing to the fact that their augmentation started with a<sup>8</sup> patient already in active pains, with cervical dilatation already > or = 3 cm; while with DCD protocol, we activated and augmented at the latent phase of labor, with absolutely no active pains. As the deliveries were conducted in a controlled manner, facilities at hand, for dealing with untoward incidences or complications, with better monitoring, the overall complication rates were almost negligible, comparable to what was reported by Daftary et al and the study published in the BMJ on the 10th May, 2012, which says that induction of labor<sup>1,7</sup> beyond 37 weeks of pregnancy can reduce perinatal mortality (death before, during or shortly after birth) without increasing cesarean section rates. Also, elective induction does not appear to pose an increased risk to the mother or her fetus in a carefully selected patient population according to a prospective study<sup>2</sup> by Ramasay et al published in the JOGI Nov-Dec 2011 issue.

Prolongation of labor was experienced in our series because labor progress being an autonomous process cannot be totally

**Table 1:** Activation-delivery (A-D) interval and mode of delivery (n = 304)

A-D interval hours	Vaginal delivery	Cesarean section
12-15	212	17
15-24	12	07
24-36	06	13
	18 reinst*	19 reinst*
Total	248	56

\*Reinst: Reinstillation of dinoprostone gel

governed. The overall rates of LSCS with DCD protocol are very less than the expected as per the WHO report and are comparable to that conducted by Chauhan et al.<sup>4,8</sup>

## CONCLUSION

In view of the shortcomings of and complications encountered during masterly-inactivity in a patient at term, results of this series aiming at optimizing perinatal outcome, with the use of DCD protocol are quite encouraging. Day-care delivery may prove to be a suitable option to the patient and her obstetrician ensuring quality labor and optimal perinatal outcome.

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## REFERENCES

1. Stock SJ, Ferguson E, Duffy A, Ford I, Chalmers J, Norman JE. Outcomes of elective induction of labor compared with expectant management: population-based study. *Br Med J* 2012 Mar; 344:e2838.
2. Ramasay V, Thunga S, Nayak SR. Is elective induction safe? A prospective analysis. *J Obstet Gynecol India* 2011 Nov-Dec;61(6):667-669.
3. Concurrent assessment of Janani Suraksha Yojana (JSY) in selected states. India: UNPFA-United Nations Population Fund India; 2009.p.23-38.

4. C-section rates, around the globe at 'epidemic' levels. China: WHO; 2010.p.1-2.
5. Warke HS, Saraogu RM, Sanjwala SM. Prostaglandin E2 gel in ripening of cervix in induction of labor. *J Postgrad Med* 1999 Oct-Dec;45(4):105-109.
6. Singh KC, Jain P, Goel N, Saxena A. Drotaverine hydrochloride for augmentation of labor. *Int J Gynecol Obstet* 2004 Jan;84(1):17-22.
7. Daftary S, Desai SN. Programmed labor—an indigenously developed protocol of labor management. *Int J Gynecol Obstet India* 2003;6:47-49.
8. Chauhan R, Gupta R. A clinical study of programmed labor and its outcome. *J Obstet Gynecol Family Welfare* 2003;5:8-9.
9. Mishra SL, Toshniwal A, Banerjee R. Effect of drotaverine on cervical dilatation: a comparative study with epididol. *J Obstet Gynecol India* 2002 May-Jun;52(3):76-79.
10. Yuel VI, Kaur V, Kaur D. Programmed labor for optimizing labor and delivery. *J Med Educ Res* 2008 Apr-June;10(2):62-64.

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