

Editorial

## STRATEGIES TO REDUCE MMR BY ADVOCATING DUTTA'S INNOVATIVE TECHNIQUES

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It's a known fact that 500 lakh pregnant mother die each year in the world, in developing countries the MMR is approximately 30/1 lakh live birth which spirals upwards to approx. 350-450 per 1 lakh maternal deaths in developing countries.

Hence considering this above fact, it is the developing country which requires utmost attention to reduce maternal deaths which are preventable. India being a diverse country with rich being super rich and poor being extremely poor with minimal or no access to quality healthcare.

#### Problems in India:

Cause of morbidity to pregnant mothers – Direct causes include eclampsia, anemia, sepsis, PPH, others include obstructed labour and other indirect causes.

Where is the lacking? – failure in health care, lack of transport facility, lack of manpower, and other socio-political commitments How to improve this scenario? – solving rural health problem by making outreach and awareness programmes to them, making skilled doctors available to rural population, provide them proper care during child birth and post partum care. Prevention, early detection and treatment of complication of pregnancy, provision of

clean and safe vaginal delivery and prompt action and management of obstetrical emergencies. Following are the commonest problems faced in rural India and various methods have been adopted by authors for prevent-ing MMR.

#### Problem 1 (Atonic Uterus noted during Caesarean section)

Uterine atony was found to be the most common cause of PPH. The ability to identify which women will experience atony is limited and with or without risks factors. Till date a lot of work have been done to prevent uterine atony and also develop evidence based medical and surgical interventions to save the uterus for fertility preservation in future. Paramount importance for every obstetrician is to prevent PPH due to uterine atony during emergency LSCS by early detection, assessment of the severity and search for specific causes. Life threatening PPH can be a nightmare to the obstetrician and requires an active multidisciplinary management to prevent maternal morbidity and mortality.

**Dutta's Scoring:**<sup>1,2</sup> Scoring method to be used during caesarean section was formulated keeping rural India in head. As it is known that to prevent uterine atony various methods are being used but in a haphazard manner, medical management if fails then B lynch sutures, step wise devascularisation, vertical sutures, tamponade or finally internal iliac artery ligation is done. But Dutta's technique involves an easy observational method and scoring system which enables the surgeon to identify grave

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risk patients or uteruses which are atonic and treat in a systematic manner. So here the uterus is divided in various parameters like shape and size, rugosity, tone, placental localisation, and time of placental expulsion and scoring were given (Tables 1-3). Approximately 130 women were selected for Group A, 100 for Group B, and 70 for Group C. Early diagnosis and management of uterine atony during emergency/elective LSCS after adopting Dutta's score were found to be not only reduce intra and post operative blood loss but also was found to maintain a satisfactory hemoglobin level and hemodynamic status. Maternal mortality was found to be nil. This randomised trial highlighted the importance of prompt treatment in Group C to reduce intra and post operative blood loss and maternal morbidity and mortality.

**Problem 2 (Placenta previa-except increta and percreta detected during caesarean suddenly)**

Placenta previa, abruption placenta and uterine rupture are three important causes of ante partum hemorrhage seen frequently at ter-tiary care level hospital claiming high maternal mortality and morbidity. Till date present existing different surgical techniques adopted during LSCS to deal with excessive bleeding after placental separation site from Major degree Placenta Previa have not been found to be effective method to control intra- operative hemorrhage. This has led to high incidence of maternal mortality and morbidity. Hence to prevent intra-operative hemorrhage during LSCS operation due to major degree placenta previa Author had advocated new surgical technique (Dutta's)<sup>3,4</sup> in a stepwise manner to reduce maternal mortality and morbidity.

**Existing technique includes following steps :**

BABY DELIVERED → PLACENTA DELIVERED → OXYTOCIN /ERGOMETRINE GIVEN → IF BLEEDING NOT CONTROLLED THEN SURGICAL TECHINUES USED LIKE B/L UTERINE LIGATION/ B/L INTERNAL ILLIAC LIGATION / HYSTERECTOMY.

**Dutta's Technique :**

BABY DELIVERED → BILATERAL UTERINE ARTERY LIGATION → INJ TRANEXAMIC ACID

Table 1 — Criteria of scoring

Uterus	0	1	2
Shape and size	Broad and flat (discoid)	Less elevated, narrow, hard and globular shape	More elevated, narrow Hard and globular shape Present in both surfaces
Rugosity	Absent	Present either in anterior or posterior surface	
Tone	Soft	Firm	Hard, contracted
Placental Localisation	Lower segment	Fundo anterior	Fundo posterior
Time of Placental Expulsion	>5 min	3-5 min	<3 min

Table 2 — Distribution of scoring in Groups

Groups	Pattern of Scoring	Total Score
Group A	Shape and size-2 Rugosity-2 Tone-2 Placental Localisation-1 to 2 Placental expulsion – 1 to 2	8 to 10
Group B	Shape and size-1 Rugosity-1 Tone-1 Placental Localisation-1 to 2 Placental expulsion – 1 to 2	5 to 7
Group C	Shape and size-0 Rugosity-1 Tone-0 Placental Localisation-1 to 2 Placental expulsion – 1 to 2	<5

1000MG STAT → OXYTOCIN INFUSION 15-20U STAT → PLACENTA PLUS MEMBRANES DELIVERED AND CHECKED → IF TEAR / LACERATION THEN SUTURE ACCORDINGLY → UTERINE WOUND CLOSED IF NO BLEEDING.

It was observed from a study (done in tertiary care hospital in rural india) that good effectiveness to control bleeding and intra operative blood loss less than 300 cc were seen in 89 (94.68%) cases respectively. Six (6.3%) cases required underlying interrupted suture for bleeding from placental bed. Subtotal cesarean hysterectomy was advocated in 3 (3.28%) cases due to fail-ure to control uterine atony. Immediate post operative bleeding less than 200 cc

Table 3 — Management Protocol

	Oxyt*	Methy erg**	Carbo-prost	Lateral compression on upper segment of uterine wall	Anterior posterior uterine wall compression	Isthmus compression	Misoprostol 800mcg per rectal
Group A (Score 8-10)	10U	-	-	-	-	-	-
Group B (Score 5-7)	15U	0.25mg	-	-	Yes	-	-
Group C (Score <5)	20U	0.5mg	250mcg	Yes	Yes	Yes	Yes

was found in 81 (86.16%) cases. Maternal mortality was found to be absent. Maternal morbidity was seen in 12 (12.76%) cases. Subsequent menstrual cycles were found to be normal in 80 (87.91%) cases and repeated pregnancy was observed in 26 (28.57%) cases indicating non effect on gonadal function.

## CONCLUSION

Dutta's new surgical technique during LSCS for major degree placenta previa was found to be simple, safe and quick procedure. It reduces perfusion pressure, permits time for further steps, thereby avoiding unnecessary ligation of bilateral internal iliac arteries and caesarean hysterectomy. Maternal mortality and morbidity were also found to be reduced. This technique is suitable for rural based hospital in absence of adequate blood transfusion facility.

### Problem 3 (third stage complications during vaginal delivery at low resource settings)

Low resource setting problems may arise due to nonavailability of experienced doctor or lack of medications. Hence low resource setting can be a challenging place to manage emergencies. Hence proper utilization of existing staff and nurses so that they can be of help to prevent PPH or in a wider sense help in reaching our goals of reducing MMR.

So keeping above in head author had devised an easy protocol which can help in achieving the above goal to some extent. Three groups of patients were divided in a study done in low resource setting as mentioned below<sup>5</sup> (Table 4).

Group A (N=100) : After delivery baby is put on mother's abdomen till placental expulsion.

Group B (N=100) : After delivery baby is put on labour cot till placental expulsion with misoprostol 600µg orally.

Group C (N=100) : Baby is separated before the expulsion of placenta (i.e. following cessation of cord pulsation) with 10U oxytocin IM within 1 min of placental expulsion.

### So what are the advantages of above method ?

- (1) Sustained uterine contraction and retraction (92%) probably due to Fetal weight on mother's abdomen (acts as fundal pressure),
- (2) Fetal movement (acts as massage to uterus), psychological change of mother after seeing the baby on her abdomen that leads to early (<5 min) and sustained uterine contraction and retraction,
- (3) Early expulsion of placenta (98%), minimal (immediate) post partum blood loss (92%),
- (4) Non requirement of drugs (misoprostol or oxytocin) and instrumentation,
- (5) Avoidance of unnecessary clamping and pulling of cord when uterus is still not contracted,
- (6) Normal temperature of the baby will be maintained due to contact with mother skin,
- (7) Baby can be easily put on breast for early sucking, after placental separation, Postpartum transfer of blood to fetus is rapid, Technique is safe and do not interfere normal progress of vaginal delivery of placenta, Do not interfere with the psychology of mother,
- (8) Minimum training of midwife / health worker will help to apply this technique.
- (9) Suitable technique for rural women of Asian countries where women are ill nourished having less blood volume and lower antenatal haemoglobin value.

Table 4 Showing the number of patients along with the uterine contraction and retraction followed by placental expulsion time required

Groups & No of Patients	Uterine Contraction and Retraction (minute)			Placental Expulsion (minute)		
	Excellent (<5mins)	Good (5-10mins)	Moderate (>10mins)	<5 min	5-10min	10min
Group A (N=100)	92% (92)	8% (8)	-	98%	2%	-
Group B (N=100)	76%	24%	-	-	10%	90%
Group C (N=100)		16%	84%	-	12%	88%

### Comparative Analysis of Clinical Observation of Three Different Groups

Observations	Group A (N - 100)	Group B (N - 100)	Group C (N - 100)
Uterine contraction & retraction	Excellent (92%) <5 min	Good (76%) >10min	Moderate (84%) >10min
Placental expulsion	Early (98%) < 5 min	Late (90%) >10 min	Late (88%) > 10 min
Post partum blood loss	Less (92%) < 100 cc	More (76%) >100-150 cc	More (84%) > 150 cc
Retained placenta	Nil	Yes (2.1%)	Yes (3%)
Inversion of uterus	Nil	Nil	Yes (1%)



Fig 1 – AP Compression



Fig 2 – Lateral compression



Fig 3 – Isthmic compression

## CONCLUSION

This study clearly shows that placing the baby on mother's abdomen after delivery till the expulsion of placenta, early breast feeding and misoprostol (600 mg) minimize the complications of third stage of labour at low resource setting. And it also implies that this method can reduce the PPH and MMR where active management of third stage of labour is not adopted routinely.

Hence these are the small effort taken by author to prevent maternal death and periodic training of doctors either through CME's or conferences along with training of nursing staff and ANM's are done to learn small tricks and techniques to prevent preventable causes of maternal death specially in rural outreach areas.

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