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AN ANALYSIS OF NEAR-MISS CASES AT A TERTIARY CARE PUBLIC HOSPITAL CATERING TO A MIXED URBAN AND RURAL POPULATION

Gynaecology

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ABSTRACT

Introduction- It has been estimated that up to 9 million women survive obstetric complications every year. Maternal near-miss refers to situations where women experience severe life-threatening obstetric complications during pregnancy, delivery or post pregnancy, which they survive either by chance or because they receive good care at a facility. Prevention of women's death related to pregnancy has been an international health and developmental priority today. This study is aimed to analyse near-miss cases at a tertiary care public hospital receiving mixed referral population.

Materials and methods-A retrospective analysis was made regarding near-miss cases from December2016 to October 2018 at Chatrapati Shivaji Maharaj Hospital in Thane, Maharashtra. Quality of maternal health care was assessed via a newly developed WHO instrument based on near-miss criteria and criterion-based clinical audit methodology.

Result-Around 13177 deliveries took place between December 2016 and October 2018. Out of 13177, 141 were near-miss cases and 23 maternal mortality cases. Majority of the near-miss cases were multigravida. Maximum number of cases of near-miss were due to ruptured ectopic pregnancy (24/141) followed by severe PIH, placenta previa, abruption placenta and eclampsia (17/141 each). 73 out of 141 cases underwent LSCS i/v/o previous LSCS or eclampsia or abruption. There were 11 cases of obstetric hysterectomy following massive post-partum haemorrhage or infection or rupture uterus. Around 100 patients had to be transfused blood or blood products and 116 out 141 patients had coagulation failure.

Conclusion-Maternal mortality is the tip of the iceberg, there is a large base of the severe acute maternal morbidity, the identification and analysis of which will tell the true story of the complications. Thus, analysing near-miss cases will help in assessing the quality of health care services provided and also in suggesting the improvement needed at each level of care. This will also help us in understanding the progression of diseases that may lead to maternal death and thus, taking appropriate steps in preventing one.

KEYWORDS

INTRODUCTION:

Maternal mortality is one of the most important indicators used for measurement of maternal health. Everyday 830 women die from preventable causes related to pregnancy and child birth. Developing countries account for 99% of all maternal deaths. Mortality and morbidity is higher in rural areas and among poor communities. (WHO, south-east Asia) Reducing the maternal mortality is the millennium goal no 5 of the WHO.

To reach this goal we need an accurate picture of the causes of maternal deaths. Systematic reviews have shown many inconsistencies in the way maternal deaths are classified and there was a lack of standard definitions and criteria for identifying severe maternal morbidity and near-miss cases.(1) A review of Near-miss cases has the advantage of having first-hand information of women who survived in understanding health seek behaviour .The proportion of women arriving at a health care facility with severe morbidity provides information about the delay and the type of delay and understanding these root causes can help to better the utilisation of health care facilities.(2) The New WHO classification of the cause of Maternal death has a simple structure to facilitate tabulation. It has been divided into Group disease category and individual underlying causes. Group disease includes three categories: Direct maternal deaths, indirect maternal deaths and unanticipated complications of management. This addition makes it possible to track trends in iatrogenic disease, for example, as related to caesarean section. Underlying causes are clearly separated from conditions contributing to fatal outcome. Finally suicide in pregnancy, deaths from puerperal psychosis and post-partum depression have now been included in the category of direct maternal deaths. (3)

There is also consensus nowas to how to define a Maternal Near-miss, "A woman who nearly died but survived a complication that occurred during pregnancy, childbirth or within 42 days of termination of pregnancy".

Signs of organ dysfunction that follow life threatening conditions are used to identify maternal near-misses, so that the same classification of underlying causes is used for both maternal deaths and near-miss cases. This consistency and set of near-miss indicators enables assessment of the quality of care provided to pregnant women. (4)

MATERIALAND METHODS:

A retrospective analysis was made regarding near-miss cases from December 2016 to October 2018 At Chhatrapati Shivaji Maharaj Hospital in Thane, Maharashtra. The hospital is a 500 bed hospital run by Thane Municipal Hospital, which caters to the urban poor and middle class of city of Thane (a 3 tier city). It is also a centre for referrals from the adjoining areas of Thane district, private hospitals and rural hospital and PHC. Rajiv Gandhi Medical College (run by Thane Municipal Corporation) is attached to the hospital, thereby making it well equipped to handle complicated cases.The obstetric unit is ably assisted by the Intensive care team and senior anaesthetists. Approximately 6000 deliveries take place annually.

RESULTS:

Total number of deliveries from December 2016 to October 2018 was 13177. A total of 141 near-miss cases were identified in that period. In this time, period the number of Maternal Mortality was 23.

Table 1:-OSTETRIC HISTORY

Parity	Number of cases
Primigravida	41
Multi (2- 4)	89
Grande Multi (more than 5)	11.
Total	141/13177

Table 2:-CAUSE

Cause	Number
Placenta previa	17
Post partum haemorrhage	11

Abruption placentae	17
Uterine rupture	6
Severe PIH	18
Ecclampsia	17
HELLP syndrome	2
Anaemia	10
Ectopic pregnancy	24
Total	320 /13177

Table 3:-Combined factors

Combined factors	Number
PreEcclampsia plus Abruption	5
Eclampsia plus Anaemia	2
PIH plus PPH plus Vaginal Hematoma	1
Cardiomyopathy	1
Lower Respiratory Tract infection	1
Dengue	1
Previous Cesarian	23

Table 4:-Maternal Outcome

Vaginal delivery	30
LSCS	73
Obstetric hysterectomy	11
Hysterotomy	2
Cystotomy / bladder repair	4

Table 5:-Foetal outcome

Foetal outcome	Number
Live birth	87
Intrauterine death	28

Table 6:-Referrals

From PHC/UHC	53
Private hospital	19
Registered patient	69

Table 7:- WHO maternal near-miss identification criteria

Dysfunctional system	Clinical criteria	Lab markers	Management based
Cvs	Shock. (1) Cardiac arrest (1)	Ph < 7 (1) Lactate > 5 (1)	Use of continuous vasoactive drugs (2) Cardiopulmonary resuscitation (1)
Respiratory	Acute cyanosis (1) Gasping. (2) RR >50 or <6 (3)	SaO2 <90% for >1 hr (8) Pao2/fio2 < 200 mm Hg (1)	Intubation and ventilatory support not related to anesthesia (6)
Renal	Oliguria not responsive to diuretics (1)	Creatinine > 3.5 mg/dl (2)	Dialysis for ARF (2)
Hemat/coagulation	Failure to form clots (6)	Acute severe thrombocytopenia <50,000 (10)	Transfusion of > 5 blood /red cells (100)
Hepatic	Jaundice in presence of PIH (3)	Bilirubin >6 mg/dl (1)	
Neurologic	Loss of conciousness (8) Stroke (0) Status epilepticus (13) Total paralysis (0)		
Alternative severity			Hysterectomy following infection or haemorrhage (11)

Table 8:-Organ specific

Coagulation failure	116
Liver dysfunction	2
Renal dysfunction	3
Uterine rupture	6
Stroke/cerebral hhge	0
Blindness	0
Total	127 / 13177

Table 9:-Treatment specific

Use of vasoactive drugs	2
Cardiopulmonary resuscitation	1
Intubation/ventilation	6
Dialysis	2
Transfusion of blood	100
Hysterectomy	11
Total	122 /13177

DISCUSSION:

Due to the wide variation in identification of near-miss cases, it has been difficult to make a summary estimate of the global near-miss prevalence. As per 2004 systematic review, prevalence of near-miss varies between 0.8 to 8.23% using disease specific criteria, between 0.38 to 1.09% using organ system criteria and between 0.01 to 2.99% using management criteria. (5) Another review published in 2012 quotes the prevalence of maternal near-miss between 0.6 to 14.8% for disease specific criteria, between 0.04 to 4.45 % for management based criteria and between 0.14 to 0.92 % for organ based dysfunction.The rates are higher in the low income and middle income in countries of Africa and Asia.Based on meta analysis, estimate was 0.42 % (95 CI 0.40 – 0.44) for the organ dysfunctional criteria. (7)

In our series, the rate of maternal near-miss was 2.42 % for disease specific criteria, 0.96 % for organ dysfunction criteria, and 0.925 % for management based criteria.

Cause of maternal near-miss shows a great variation according to the geographical area of the world. There are also variations within different areas in the same country. Haemorrhage, sepsis, hypertensive disorders and obstructed labor are the leading causes in developing countries. Causes of near-miss are the same as that of mortality for the same area. Haemorrhage was the leading cause of mortality in Africa (33.9%) and Asia (30.8). In Latin America and the Caribbean, hypertensive disorders were responsible for 25% of deaths. Anaemia was reported as an important cause of death in 12.8% in Asia, 3.7% in Africa and none in the developed countries. (8)(9) Studies from India have also reported anaemia as a major contributor to maternal mortality and morbidity. (10)

In our series, the rate of haemorrhage was 36.88%, hypertensive disorders 26.24% and sepsis 1%. The percentage of anaemia was 8.5%.

Three delays have been identified which lead to the severe maternal morbidity and mortality. First is the delay in seeking care by woman and family as they are unaware of the need for care. This occurs as the danger signs are not recognised or there is lack of support from the family. Second is the delay in reaching an adequate health care facility as the services may not exist or be inaccessible due to reasons such as lack of transport facilities, cost or socio economic barriers. The third delay occurs in receiving adequate care due to errors in diagnosis and clinical decision making or a lack of medical supplies and of staff proficiencies in managing obstetric emergencies.(11)(12) About 75% of women with severe morbidity are in a critical condition upon arrival in developing countries. This emphasises the first 2 reasons of the delay. (13)

Availability and accessibility of health care and behavorial factors thus play an important role in the utilisation of maternal health care services.

In our series, a total of 135 patients (95.74 %) can be said to have morbidity due to the first 2 delays and a total of 6 patients (4.26 %) and be due to the third cause of delay.

Many patients in urban areas register for delivery at a private nursing home. These stand alone maternal units are managed by a single obstetrician with semi skilled support personnel. There is often no back up in case the doctor is busy elsewhere. The early warning signs are often missed and the patient is transferred to the institute in a critical condition very late. Also in some communities the fear of doctors doing unnecessary Caesarian section prevents them from seeking medical help.they call local birth attendants who have received no formal training and are likely to miss the warning signs.

Lack of protocol based monitoring is another cause of delay in noticing danger signs.this is proved by the fact that None of the patients had an accompanying partograph.

CONCLUSION:-

Between 1990 and 2015, maternal mortality has dropped by 44%. (WHO south East Asia) Recently, WHO has recommended India for its ground breaking success in reducing MMR by 77%, from 556 per 100000 births in 1990 to 130 per 100000 births in 2015. The present MMR in India is below the millennium development goal target and puts the country on track to achieve the sustainable development goal of less than 70 by 2030.

Since 2005, coverage of maternal health services has doubled, institutional deliveries in public facilities has tripled from 18% in 1990 to 52% in 2016. (Niti Ayog)

The Government launched Janani Shishu suraksha karyakram allows free transport and no expense delivery including Caesarian section to all mothers. Overall 75% of rural births are now supervised as compared to 89% urban deliveries.

Campaigns like Pradhan Mantri surakshit Matritva Abhiyan have been introduced allowing women access to antenatal check-ups and to track high risk deliveries. However, still 25% of rural births and 11% urban deliveries are still unsupervised. Also supervision of delivery still accounts for taking care of only the first 2 delays. There is no standardised and mandatory protocol for monitoring of the peripartum patients.Many signs are still missed.There is a need for implementation of standard protocols for monitoring of the parturient in the stand alone and other maternity clinics. FOGSI (federation of gynaecological societies of India) has published clinical standards to ensure safe delivery. It is important for all health care providers to ensure implementation of these minimum standards of care so as to achieve the sustainable millennium developmental goal.

REFERENCES

1. Khan KS, Wojdyla D, Gulmezoglu AM, Van Look PFA WHO analysis of causes of maternal deaths : A systematic review Lancet 2006 ;367:1066-74 doi:10.1016/S0140-6736(06)68397 PMID : 16581405
2. Ceccatti JG, Souza JP, Parpinelli MA, De Sousa MH, Amara E Research on severe maternal Morbidities and near-misses in Brazil: what we have learnt Reprod Health Matters 2007;15:125-33
3. Report of the WHO working group on the classification of maternal deaths and severe maternal morbidities, Geneva: WHO; 2009
4. SayL, Souza JP, Pattison RC, Maternal Near-miss – towards a standard tool for monitoring quality of Maternal Health Care Best Pract Res Clin 2009;23:287-96 doi: 10.1016/j.bpobgyn.2009.01.007 PMID:19303368
5. Say L, Pattison RC, Gulmezoglu AM, WHO systematic review of maternal morbidity and mortality: the prevalence of severe acute maternal morbidity – Near-miss Reprod Health 2004; 1:3
7. Tuncalp O, Hindi MJ, Souza JP, Chou D, Say L, The prevalence of Maternal Near-miss: A systematic Review, BJOG .2012;119:653-61
8. Khan KS, Wojdyla D, SayL, Gulmezoglu AM, Van Look PF WHO analysis of causes of maternal death: A systematic review. Lancet .2006; 367: 1066-74
9. Walraven G, Telfer M, Rowell J, Ronsman C, Maternal Mortality in Rural Gambia : levels causes and contribution.Bull World Health organ 2000;78:603-13
10. Rajaram P, Agrawal A, Swain S, Determinants of Maternal Mortality: A hospital based study from South Asia, Indian J Matern child health 1995; 6:7-10
11. Romans C, Fillipi V Beyond The numbers: reviewing maternal deaths and complications to make pregnancy safer Geneva, Switzerland: World Health Organisation 2004: reviewing severe maternal morbidity: learning from survivor from life threatening complications; PP.103-24.
12. Pattison RC, Buchanan E, Mantel G, Schoon M, Rees H, Can enquiries into severe acute maternal morbidity act as a surrogate for maternal enquiries? BJOG .2003; 110: 889-93
13. Mustafa R, Hashmi H, Near-miss Obstetrical events and maternal Deaths J Coll Physicians Surg PAK 2009;19:781-5