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To
All Medical Fraternity

As Editor of Journal of Indian Academy of Obstetrics & Gynaecology I feel proud and glad to inform you that 2nd edition of Journal of Indian Academy of Obstetrics & Gynaecology is going to release on 1st July 2020. It gives me immense pleasure to publish the second volume on this auspicious Doctors' Day.

We have focused on many evidences based scientific research papers covering original article, review article, video presentation etc.

It is the total team effort of IAOG to make this Journal one of the best medical journal in the world in future.

My sincere and wholeheartedly believe that scientific world of our fraternity namely post graduate students, residents, teachers as well as practitioners will be benefited from this journal.

Our sole intention is to reduce the maternal mortality by innovative, evidence based scientific paper which will be acceptable to the obstetricians and gynaecologists.

Thanking you

Dilip Kumar Dutta

Chief Editor

Journal of Indian Academy of Obstetrics & Gynaecology

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Guest Editorial

TAKING CARE OF MOTHER'S KIDNEY

Rajendra Pandey

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There can be no denial of the fact that despite of much improvement of Antenatal care and extend of institutional deliveries much still remains to be done to acclaim Sustainable Developmental Goals in term of Maternal Mortality Ratio (MMR). One of the major reasons of mortality in perinatal period is Acute Kidney Injury (AKI) due to various reasons. A pregnant mother's kidney is more vulnerable to ischemic insult and insult to different exotoxins and endotoxins, which may result into different types of cortical necrosis from where renal recovery may not be possible. It has been lately observed that spinal anaesthesia is becoming a popular mode of regional anaesthesia for caesarean section where inability to avoid hypotension and proper fluid management may result in patchy or diffuse cortical necrosis leading to AKI.

Post-partum haemorrhage (PPH) giving rise to prolonged hypotension and ischemic injuries leading to AKI and subsequent correction and blood transfusion at times also causes intravenous haemolysis and renal failure. Puerperal sepsis along with septicaemia and disseminated intravascular coagulation is another cause of AKI. Here it should be pertinent to mention that at a critical care set up in present of ARF adversely affect the mortality rate. Most of the complications are avoidable if timely intervention can be done. We will suggest that NSAIDs should be avoided for purpose of post-operative analgesia which greatly increases the chance of AKI. It is also advisable that fluid administration should be judicious due to massive perfusion of all organs including kidney.

Another important area, to which our obstetrician friends may not sensitive, is an appreciable incidence of thrombotic micro-angiopathic hemolysis, which may range from HELLP (Hemolysis Elevated Liver Enzymes Low Platelet Count) to HUS (Hemolytic-uremic syndrome). To remind that not only the target kidney but also coronary artery involvement may occur which may lead to development of fatal post-partum cardiomyopathy leading to severe disability. So, a general sense of awareness amongst the obstetricians is needed to generate to keep this entity in mind when post-partum recovery is not as expected.

The other important aspect which can never be ignored, taking care of pregnant mothers with lupus. In our socio-economic status many of the patients who premaritally diagnosed of SLE and taking teratogenic medications may conceive after marriage. They are unaware of the fact that the pregnancy may cause a flare of lupus and deterioration of renal functions. I shall ponder whether or not inclusion of questioning for disease and drugs intake should be made at primary interview by the medical and paramedical professionals while they are evaluating and assessing a pregnant mother. Family consensus should be included all patient of lupus is to have normal serum creatinine level prior becoming pregnant.

Our centre having a large population base is not immune to have infection related to glomerulonephritis. While such suspected patient is pregnant, they would require a multidisciplinary approach for safe continuation of pregnancy and

labour. With the incrementing increase DM, HTN in the society and growing number of late marriages, women are becoming pregnant in advanced ages. It is becoming a cause of disease related organ dysfunction and associated with co-morbidities in pregnancy which requires more cautious approach for healthy outcomes of pregnancy. We would expect obstetricians should take instant measure with people of other disciplines in order to

make pregnancy safe and manageable for both the mother and the child.

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Original Article

REDUCTION IN WASTAGE OF BLOOD PRODUCT: AN INTERVENTIONAL STUDY IN A TEACHING HOSPITAL OF WEST BENGAL

Abhijit Halder ¹, Mainak Nath ^{1✉}, Abhijit Mondal ¹, Manidip Pal ¹,

ABSTRACT

Background: Poor planning and non-judicial uses of blood and blood products lead to wastage which in turn compromises the ability of a hospital to fight against any acute surgical or medical emergencies. At our Hospital the crisis in blood bank was very common and discomfoting to treat emergency obstetrics cases.

Methods: To prevent that, in our hospital, we had started an interventional prospective analytical study based on a project POCQI. Wastage of blood and blood products between 01.10.17 - 31.12.17 was calculated and it was 190 bags of blood unused. Probable reasons of that wastage were tried to find out. After that, doctors, nursing staffs, other hospital staffs, and blood bank technicians were sensitized via several interactive sessions and specific blood and component requisition and transfusion protocols had been set (Intervention period 01.01.18 to 30.04.18). Proper implementation of the protocols at different levels had been followed up in regular intervals and occasional modification of protocols was done according to the situation.

Result: At the end of the study period the reduction of wastage of blood and blood components analyzed and plotted on an analytical graph. Fifty-two (52) bags of blood were in freeze on 1st February. At the end of second month wastage was 28 bags. At the end of the third month it was 09 bags of blood wasted.

Conclusion: Result of reduction of blood & blood components wastage was surprisingly successful. A little initiative and small steps can bring a lot of change to get a fruitful result.

Keywords: Blood reserve, POCQI, Point of Care, Quality Improvement

Background

Blood and its components are very significant for human life and therefore blood transfusion can be a life-saving intervention. There are multiple factors that contribute to shortfall in provision of blood including deficient donor

recruitment, poor stock management and transportation. The demand for blood surpasses the blood supply in many countries. World Health Organization (WHO) data indicated that 87.5 % of developing countries collect less than half of the blood needed to meet the transfusion requirements of their populations^[1]. Studies on developing countries reported that most of the limited blood supplies are used

for complications of pregnancy and childbirth, trauma and severe anaemia. [2, 3, 4]

Many factors lead to wastage of blood products in obstetrics like broken bag, broken seal, expired units, returned after 30 min, clotted blood or miscellaneous reasons which is most importantly due to lack of proper knowledge and awareness. According to the “30-minute rule” and guidelines for blood transfusion in the UK recommend that if RBC units are out of controlled temperature storage for more than 30 min, they should not be put back into storage for reissue^[5]. The justification for this rule is that once RBC units are out of controlled temperature storage, the component warms up, and the risk of bacterial proliferation increases with time^[6, 7].

Reducing blood wastage through optimal blood management and good blood utilization practice may therefore reduce the impact of low blood donation rates. Physicians, nurses and laboratory personnel are responsible for the wastage, with physicians being responsible for most of the wastages

Methods

Blood and blood components availability in hospital blood bank, determines the capacity of the hospital to combat any Obstetrics as well as surgical emergency situation of acute haemorrhage.

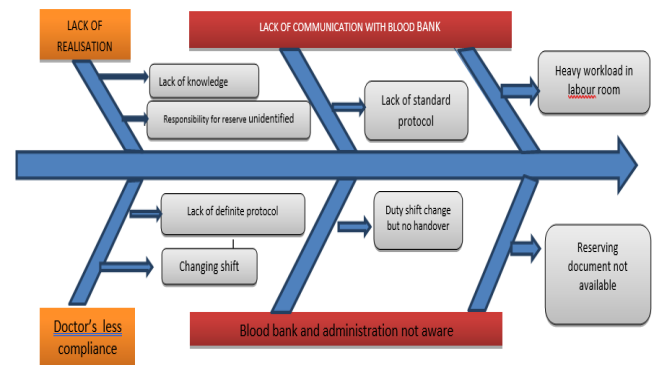
In our hospital in the department of O&G, it was found that from October to December 2017, 190 bags of blood (65+58+67), were discarded on 1st January, 2018 due to no transfusion even after issuing from blood bank for emergency conditions. The problem was realised when in emergency situation our blood bank failed to provide blood and blood components due to lack of their storage lots off same group of blood bags were found to be of no use in our refrigerator.



Solution of this problem was needed and our aim was to increase the blood availability by decreasing number of wasted bloods. We had started an interventional prospective analytical study based on a project Point of Care

Quality Improvement (POCQI) by Swasthya bhavan, West-Bengal. Following steps were taken.

Root Cause Analysis (Fishbone)

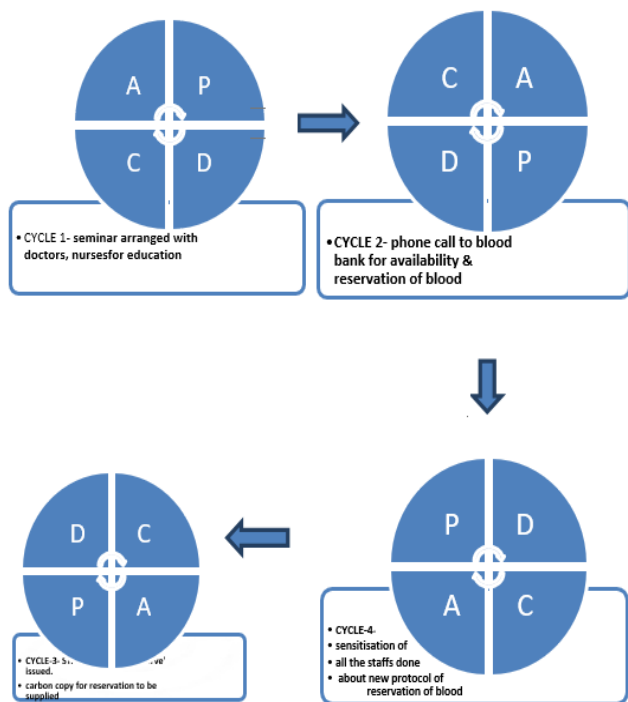


The problem was identified as follows:

- I. Procedure: No definite protocol for reservation of Blood present at our hospital.
- II. Place: In labour room and in Gynae emergency, most of the blood requisition was advised by treating doctors.
- III. People: The on-duty doctors even when transfusion was actually not needed, used to bring blood from blood bank being worried of the fact that in emergency blood may not be available.

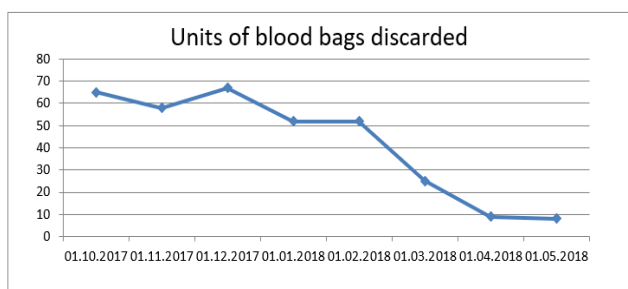
Intervention (PDCA –Plan Do Cause Action Cycle)

- A. **First change:** - Seminar arranged involving our doctors and the nurses of O & G department to properly assess the necessity of blood for the index patient and then do the requisition if only it is very necessary (last week of October). It was ensured to them in acute emergency the blood will be available if wastage decreases.
- B. **Second change:** - The doctors, nurses were asked to contact the blood bank by phone and ask them if the particular group of blood is available at that particular time or not. If available not to issue immediately but to keep it in reserve for 3 days.
- C. **Third change:** - As there was no written document of already reserved blood for a particular patient, the next shift doctors continued to requisition for blood and reserve it again. So, team leader arranged a meeting with the Blood Bank MO and decision taken to make a stamp mentioning ‘KEPT IN RESERVE’ on the **carbon copy of the blood requisition form**. It was decided to send the carbon copy of the requisition form if the blood was intended for reserving.
- D. **Fourth change:** The procedure was conveyed to all the treating doctors personally by our teams’ programme implementer.



ANALYSIS AND RESULTS

The collected data within the study period was analysed once the period was over. It was found that there was a dramatic change of blood wastage at the end of the first month. 52 bags of blood were in freeze on 1st February. The reduction was noticeable. But still reduction at the end of second month was 28 bags. At the end of the third month it was 09 bags of blood wasted. The number of blood bag wastage was followed up in the consecutive months. It was a baseline but didn't reach zero for the consecutive months. Thereby we conclude that the blood and blood component wastage was avoidable and it can be reduced significantly by a protocol.



DISCUSSION

After the study period it was found that the wastage of blood and blood products had reduced dramatically though in some cases the wastage was inevitable. For that reason, in spite of every measure to decrease wastage to zero, a minimum number of bloods were wasted and that is

acceptable. The project increased the ability of our hospital to react against emergency medical and surgical situations by increasing the number of blood of different groups available in blood bank. Reduction of wastage increased the supply and more patients were benefited. Awareness among doctors, nursing staff and others were increased. Blood Bank became more prepared to any unprecedented situations. Many patients are being benefited by adequate supply of blood in need. So, it is evident that, a fixed and planned protocol can be developed by this project to decrease judicial usage of blood and blood products and are to be followed to facilitate a smooth run of a Tertiary hospital. Ideally in a proper setting, outdated and wastage of blood and blood products would never occur. Due to the inherent need to have blood stocks at all times and also often unpredictable demands on the inventory, a very limited and inevitable outdated of components in blood bank is accepted^[8]. Studies claim that through target interventions and adherence to strict guidelines, a significant reduction in the wastage of blood components could be achieved and maintained^[9, 10, 11]. Globally only 106 countries have national guidelines on the appropriate clinical use of blood and blood products^[12].

Conclusion

From the study done on the basis of a project we get a good result to decrease blood wastage in our hospital which had a good effect on patient care. Trivial changes in the hospital protocol may have an extraordinary effect for management of critical patients. The reserved blood which were not transfused to the index patient, was helpful for another patient to save life.

Recommendation

So, we conclude that every Hospital should have a protocol to reduce blood wastage according to their existing system.

Limitations of the study

The study did not include other Departments of the Medical College and Hospital, who also have been using significant amount of blood and blood components from our blood bank. Inclusion of other Departments in the study would have been more appropriate and comprehensive. Other Hospitals who have been already using a blood utilisation protocol and having wastage of blood may consider the study result and apply the same. But different Hospital may come up with their own studies as our study result may not be applicable to all health care set up.

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Original Article

MODIFIED PROPHYLACTIC MAGNESIUM SULFATE THERAPY IN SEVERE PRE-ECLAMPSIA - A RANDOMISED CONTROL STUDY

Anurag Mallick

ABSTRACT

Background - The primary aim of treatment in preeclampsia is to prevent eclamptic seizures, and resultant morbidity and mortality. Magnesium Sulfate has proved to be the optimal drug for seizure prophylaxis.

Methods: A randomized controlled trial for MgSO₄ prophylaxis was conducted between July 2015 to June 2016. Randomization = Sequence generation - Computer generated random numbers. Allocation concealment mechanism - opaque sealed envelopes. Informed consent obtained, subjects were randomly assigned to any of the group. Intervention Group A – received MgSO₄ for 8 hrs. Control Group B – received MgSO₄ for 24 hrs.

Results: Out of 45 women in the intervention group A, magnesium sulphate was continued in only 1 woman beyond 8 hours (2.2) [$p < 0.001$]. The time that doctors spent monitoring the women was significantly less in the group A than in the control group B [$p < 0.001$]. Time spent by the nurses in giving MgSO₄ injections and care thereafter was significantly less in the group A ($P < 0.001$). Pain felt by the women due to MgSO₄ injection was found to be significantly less in the group A ($P < 0.001$), and women in the intervention group were better able to look after themselves. In group A significant reduction was observed in duration of postpartum Foley's catheter and time to early ambulation.

Conclusion: The abbreviated regime of is a suitable alternative to the traditional regime and is associated with less exposure to the drug, both in terms of duration and total dose but with similar clinical outcomes.

Key Words: severe pre-eclampsia, MgSO₄ prophylaxis, eclampsia, abbreviated regime

Introduction: Pre-eclampsia, a pregnancy specific multisystem disorder, is characterized by the development of hypertension and proteinuria after 20 weeks of gestation⁽¹⁾. Pre-eclampsia occurs in 2-8% of pregnancies^(2,3,4). An important complication of severe pre-eclampsia is eclampsia, which may occur prior to, during, or following delivery and is associated with an increased risk of maternal death^(5,6,7,8). The primary aim of treatment in preeclampsia is to prevent eclamptic seizures, and resultant morbidity and mortality. Magnesium Sulfate has proved to be the optimal drug for seizure prophylaxis⁽¹⁰⁾. Eclampsia can be prevented with magnesium sulfate, which decreases the risk of seizures by 50%, along with a reduction in maternal mortality^(2,11,12,13). Although magnesium sulfate administration is recommended for all

women with severe pre-eclampsia⁽¹³⁾, there is no consensus regarding the ideal duration of prophylactic postpartum anticonvulsant therapy⁽¹⁴⁾. Traditionally, the use of magnesium sulfate has been recommended for 24 hours following delivery, the period of greatest risk for the occurrence of eclampsia^(2,15). Nonrandomized studies have used clinical criteria for stopping magnesium sulfate earlier in some women with pre-eclampsia^(16,17). By reducing the duration of therapy, the frequency of monitoring maternal blood pressure and urinary output may be curtailed and early ambulation and care for her newborn may be increased. However, a systematic review⁽¹⁸⁾ found that some women who received a short-duration magnesium sulfate treatment regimen required a prolongation or re-institution of therapy, although this finding was not statistically

significant. In economically developing nations like India, the use of magnesium sulfate is also effective ⁽²⁾. However, unnecessarily prolonged use of magnesium for seizure prophylaxis in resource-constrained regions might delay a mother's return to normality and thus preclude such recommended practices as kangaroo care ⁽¹⁹⁾.

Materials and Methods

Study was done in the Department of Obstetrics and Gynaecology, R.G.Kar Medical College from 1st July 2015 to 30th June 2016 in Severe Stable Pre-eclamptic patients admitted in Department of Obstetrics and Gynaecology of RGKMCH. The study was Interventional Prospective Randomized Controlled Study. Purpose was intention to treat. Randomization and Sequence generation was done by Computer generated random numbers. Allocation concealment mechanism was through Opaque sealed envelopes. Once informed consent is obtained, subjects will be randomly assigned to any one of the intervention group. Intervention Group A received MgSO₄ for 8 hrs. and Control Group B received MgSO₄ for 24 hrs.

Severe pre-eclampsia was defined as a systolic blood pressure of 160 mm Hg or more and/or a diastolic blood pressure of 110 mm Hg. Pre-eclampsia was deemed to be "stable" in the absence of visual signs or symptoms (scotomata or blurred vision), frontal and/or occipital headache, hyperreflexia, and either epigastric or right hypochondrium pain. Women with eclampsia were excluded from the study, as were those with evident hemolysis, elevated liver enzymes, and low platelet count (HELLP) syndrome, pre-existing diabetes mellitus, epilepsy, renal disease, a contraindication to the use of magnesium sulfate such as known hypersensitivity to the drug, or anuric or oliguric urinary output under 25 mL/hour. All women were already receiving magnesium sulfate before and during delivery. Postpartum, all participants received an 8-hours of magnesium sulfate. Approximately 4 hours after delivery, eligible women were invited to participate in the trial. Those who provided written informed consent were enrolled and assigned a randomization number.

The participants were randomized 1:1 to receive an ongoing (24-hour) or abbreviated (8-hour) magnesium sulphate. Randomization was achieved using a sequential list of random numbers ranging from 1 to 45. The group allocation was concealed in opaque, sequentially numbered envelopes, which remained sealed until randomization. At 8 hours, after completion of the initial period of magnesium sulfate, each woman's study envelope was opened. If she was assigned to 24 hours of treatment, her MgSO₄ was continued for another 16hours. If she was assigned to 8 hours of treatment, her MgSO₄ was stopped and normal saline was used. As a safety measure, in the rare situation where a woman was assigned to the abbreviated magnesium protocol and she had very high blood pressure (systolic blood pressure of 180 mm Hg or

more and/or a diastolic blood pressure of 120 mm Hg or more), her urine output was under 25 mL/hour, and/or she had signs of imminent eclampsia, she was maintained on magnesium sulfate for the duration deemed necessary by her attending physician. These women were described as "need to continue magnesium sulfate treatment after 8 hours" and were not considered to belong to the abbreviated treatment group. In the 24-hour treatment group, the attending physician was also permitted to extend magnesium therapy if he/she deemed this to be necessary. Clinical and laboratory measures were assessed in both groups until at least 24 hours following delivery. The women were evaluated every 4 hours for heart rate, respiratory rate, blood pressure, and urine output. Deep tendon reflexes were evaluated every 4 hours and laboratory tests to screen for the HELLP syndrome were evaluated every 24 hours. At approximately 24 hours after delivery, each woman's satisfaction with her care was evaluated on a scale of 1–5.

(1 = very satisfied, 2 = satisfied, 3 = not very satisfied, 4 = dissatisfied, and 5 = very dissatisfied)

Laboratory investigations used for monitoring were Hb%, TC, DC, ESR, Platelet Count, Plasma Glucose level, Urea, Creatinine, Uric Acid, Liver Function Test, and Proteinuria.

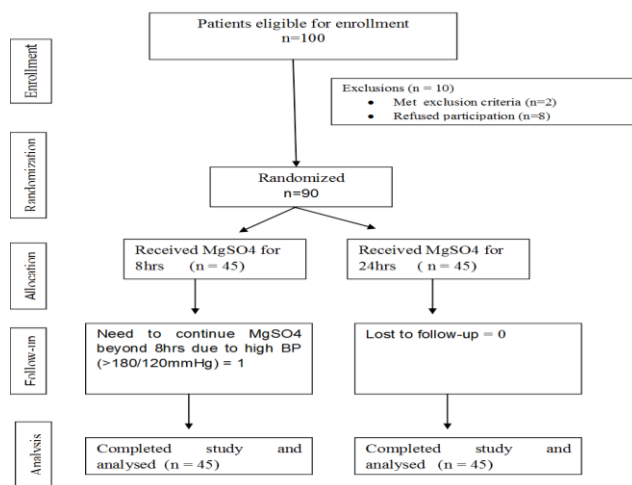
STUDY VARIABLES

DEMOGRAPHIC	AGE RELIGION
OBSTETRIC	PARITY GESTATIONAL AGE AT DELIVERY MODE OF DELIVERY
CLASSIFICATION OF HYPERTENSION	SEVERE GESTATIONAL HYPERTENSION SEVERE PRE-ECLAMPSIA CHRONIC HYPERTENSION WITH SUPERIMPOSED PRE-ECLAMPSIA
INCLUSION CRITERIA	Post partum Women with Stable Severe Pre-Eclampsia
EXCLUSION CRITERIA	*HELLP Syndrome *Epilepsy *Class A2 Gestational Diabetes *Oliguria *Refused Participation

Sample size was calculated using SPSS 20.0. 1.Based on previous data ⁽¹⁷⁾, it was assumed that the mean duration of magnesium sulfate treatment in the abbreviated group would be 18 ± 9 hours, whereas women in the 24-hour treatment group would receive therapy for 24 ± 6 hours. To detect this 6-hour difference in the duration of treatment with a statistical power of 90% and a two-sided P value 0.05, 35 women were needed per group.

Considering possible drop-outs, the sample size was increased by 20%, resulting in a total of 45 women per group (total 90).

PATIENTS FLOW DIAGRAM



Results

During the study period from July 2015 to June 2016, a total of 100 women were approached but 10 women were excluded as 8 of them refused to participate, one was a known case of Epilepsy and another one was also a known case of gestational diabetes. Of the remaining 90 women who fulfilled the eligibility criteria, 45 were randomized to receive magnesium sulphate for 8 hours and 45 were randomized to receive magnesium sulphate for 24 hours. Among the women randomized to receive MgSO₄ for 8 hours, one woman had to continue MgSO₄ beyond 8 hours because of persistent hypertension (BP >180/120 mmHg). She received 10mg Nifedipine orally and her blood pressure dropped to 166/110 mmHg after 45 minutes. Thus, the intramuscular regime was continued up to 24 hours.

Baseline variables such as age, gestational age at delivery, parity, and mode of delivery were comparable in both groups. (Table 1) Most clinical and laboratory parameters like Heart Rate, Respiratory Rate, Platelet Count, Creatinine, Uric acid, Serum LDH, AST (Aspartate Aminotransferase), Total Bilirubin at admission were similar, with no differences in the severity of the disease. (Table 1)

During the study, no statistically significant differences were found between the groups with respect to blood pressure or urine output. None of the women had to interrupt anticonvulsant therapy because of adverse effects of the drug. There were no occurrences of eclampsia, acute pulmonary edema, thromboembolic complications, kidney failure, liver failure, disseminated intravascular coagulation, cerebrovascular accidents or maternal deaths. Minor complications like urinary tract infection were found statistically significant among the

women receiving MgSO₄ for 24 hours. The duration of anti-convulsant therapy was significantly shorter among the women receiving Magnesium sulphate for 8 hours resulting in reduction of total dose of Magnesium sulphate.

The total duration of indwelling urinary catheter use was also significantly shorter in the group of women receiving MgSO₄ for 8 hours. Similar results with significant reduction in time from delivery to ambulation were seen among the women receiving MgSO₄ for 8 hours. A significant reduction in time from delivery to contact with the newborn infant was also found in the abbreviated regime (8 hours) group. Monitoring time by doctors, time required for nursing care and for injections was significantly reduced among the women receiving MgSO₄ for 8 hours (Table 2).

Discussion: In the present study, Magnesium sulphate was continued for only 1 woman beyond 8 hours, out of 45 women (2.2%) in the intervention group [p < 0.001]. In a study of 503 women, Isler et al. ⁽¹⁶⁾ used clinical symptoms to guide postnatal MgSO₄ therapy, and reported a 7.6% need for reinstitution of MgSO₄. A more recent randomized controlled trial by Ehrenberg et al. ⁽²⁰⁾ examined disease progression during a 12-hour and 24-hour postpartum MgSO₄ regime for mild pre-eclampsia, and reported the need to extend MgSO₄ administration among 6.9% of women in the 12-hour group.

In a randomized control trial by Darngawn et al ⁽²¹⁾, comparing a shortened 6 hours magnesium sulphate prophylaxis regime versus 24 hours in pre-eclamptic women at low risk of eclampsia, only one woman out of 75 (1.3%) in the 6 hours intervention group needed to continue magnesium sulphate because of worsening hypertension nine hours following delivery.

Regarding the secondary outcomes, no eclampsia occurred in either group, a finding consistent with those of Isler et al. ⁽¹⁶⁾ and Ascarelli et al. ⁽¹⁷⁾.

The time that doctors spent monitoring the women was significantly less in the intervention group (8 hours group) than in the control group (24 hours group) [P<0.001].

Similarly, time spent by the nurses in giving MgSO₄ injections and care thereafter was significantly less in the intervention group (P<0.001). Intramuscular injections are associated with a lot of pain at the injection site; thus, it is our standard practice to mix MgSO₄ with 2% xylocaine. The resultant 10 mL of preparation can cause abscesses; so, hot fomentation is applied to the injection site after each injection. The time saved by shortening the MgSO₄ regime would be of great significance in low-resource countries such as India, which has a nurse-to-patient ratio of 1:4 and a doctor-to-patient ratio of 1:5. ⁽²¹⁾

Table 1. COMPARISON OF BASELINE CHARACTERISTICS

VARIABLES	GROUP A (n=45)	GROUP B (n=45)	p VALUE
AGE [Mean (SD)]	19.84 (2.66)	19.93 (2.38)	0.8680
PARITY [n (%)]	33 (73.3)	39 (86.7)	0.1183
PRIMIPARA	12 (26.7)	6 (13.3)	
MULTIPARA			
GESTATIONAL AGE AT DELIVERY [Mean (SD)]	35.85 (0.89)	35.79 (0.94)	0.7487
Types of Hypertension[n(%)]	1 (2.2)	1 (2.2)	0.8415
Chronic HTN	2 (4.4)	1 (2.2)	
Gestational HTN	42(93.3)	43(95.6)	
Pre-Eclampsia			
MODE OF DELIVERY [n(%)]	36 (80)	33 (73.3)	0.7481
C-Section	2 (4.4)	3 (6.7)	
Instrumental	7 (15.6)	9 (20)	
Normal			
HEART RATE [Mean (SD)]	86.44 (3.69)	86.57 (4.48)	0.8780
RESPIRATORY RATE [Mean (SD)]	15.88 (1.55)	16.02 (1.33)	0.6641
URINE OUTPUT (in ml/hr) [Mean (SD)]	81.88 (15.56)	81.22 (15.78)	0.8406
PLATELET COUNT (in lakhs/cmm) [Mean (SD)]	2.08 (0.21)	2.14 (0.26)	0.2425
SERUM CREATININE (mg/dl) [Mean(SD)]	0.51 (0.08)	0.53 (0.07)	0.3861
URIC ACID (mg/dl) [Mean (SD)]	5.19 (0.36)	5.21 (0.40)	0.7873
SERUM LDH (U/L) [Mean (SD)]	265.64 (8.70)	264.04 (8.79)	0.3880
AST (U/L) [Mean (SD)]	23.20 (4.74)	23.00 (4.30)	0.8345
TOTAL BILIRUBIN (mg/dl) [Mean (SD)]	0.44 (0.16)	0.46 (0.17)	0.6165

TABLE 2. COMPARISON OF OTHER SECONDARY VARIABLES

VARIABLES	GROUP A (n=45)	GROUP B (n=45)	p VALUE
MONITORING TIME BY DOCTORS (in minutes) [Mean(SD)]	20.00 (0.82)	30.46 (1.14)	<0.0001
INJECTION TIME (in minutes) [Mean (SD)]	6.77 (2.17)	18.46 (1.14)	<0.0001
NURSING CARE TIME (in minutes) [Mean (SD)]	32.40 (1.72)	88.88 (6.09)	<0.0001
NEED TO CONTINUE MgSO4 BEYOND 8HRS [n(%)]	1 (2.2)	45 (100)	<0.0001
MINOR COMPLICATIONS [n(%)]	10 (22.2)	25 (55.6)	0.001

Pain felt by the women due to MgSO₄ injection was found to be significantly less in the intervention group than in the control group ($P < 0.001$), and women in the intervention group were better able to look after themselves.

A significant reduction was found in the duration of postpartum indwelling urinary catheter use, which may account for the reduction in the risk of urinary tract infection⁽²²⁾ and the decrease in postpartum discomfort reported by the women in women receiving MgSO₄ for 8 hours.

A reduction was found in the time to ambulation with the shorter regimen of postpartum magnesium sulfate. Early ambulation is important for the prophylaxis of deep vein thrombosis⁽²³⁾. The shorter, 8 hours magnesium sulfate therapy enables women to benefit from this prophylactic practice.

Another benefit associated with shorter magnesium sulfate therapy was the possibility of earlier contact with the newborn, improving the likelihood of establishing breastfeeding. It is common practice during magnesium sulfate administration for the woman to remain in an intermediate or intensive care unit, which may contribute towards preventing the mother from breastfeeding her infant. In the present study, a significant reduction was found in the time from delivery until contact with the newborn in the 8-hour group.

Moreover, more well-designed studies should be conducted with larger sample sizes to avoid hasty conclusions based on a single study.

Conclusion

In our study, time from delivery to ambulation, Time from delivery to contact with newborn infant, Duration of indwelling urinary catheter use, Time spent by doctors for monitoring, Time spent by nurses for giving injections and associated care and minor complications like urinary tract infections was significantly less in the women receiving magnesium sulphate for 8 hours than those women receiving for 24 hours. There is also reduction in total dose of Magnesium sulphate and the pain relief or satisfaction of the patients were significantly more in the women receiving Magnesium sulphate for 8 hours than those receiving for 24 hours.

Limitations

The study has some limitations. First, eclampsia was not taken as the primary outcome because of its low incidence (0.5% to 1.8%) in India⁽²⁵⁾, of which only a quarter occurs in the postpartum period. In addition, we did not monitor the effects of the regime co-morbidity by any of known scales of morbidity. Although not powered to detect the difference of the incidence of Eclampsia, the present

randomized control trial indicates that the abbreviated (8 hours) regime of postpartum Magnesium sulphate for seizure prophylaxis is a suitable alternative to the traditional (24 hours) regime and is associated with less exposure to the drug, both in terms of duration and total dose but with similar clinical outcomes. So, a larger number of women with Pre-eclampsia should be studied to come to a robust conclusion about the abbreviated postpartum Magnesium sulphate regime.

Conflict of interest: Authors declare that they have no conflict of interest.

Ethical Approval: Institutional ethical committee clearance was obtained.

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ABBREVIATIONS:

- MgSO₄ - Magnesium Sulphate
 HRS - Hours
 HTN - Hypertension
 C- section - Caesarean Section
 LDH - Lactate Dehydrogenase
 AST - Aspartate Transaminase

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Original Article

ACCEPTANCE OF IUCD IN THE INDUSTRIAL AREA OF KALYANI, NADIA, WEST BENGAL

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ABSTRACT

One thousand family of industrial workers were interviewed between January 2010 and April 2015 from Family Planning clinic of College of Medicine and JNM Hospital, Kalyani, Nadia, West Bengal to find out various socio-economic factors responsible for high fertility rate and failure of IUCD programme. 83% women were married before 20 years of age and 82% had 4 or more children. About 91% did not have any basic education. Economic status of 90% were found to be very poor. 70% were reluctant to undertake any family planning program. Acceptance rate was 11% tubectomy, 9% vasectomy, 5% oral contraceptive pills, 33% intra uterine copper device and 2% condom cases were reported. The reasons for non-acceptance of IUCD were found to be desire for more children (38%), fear of ill health (20%), fear of cancer (12%), objection from husband (10%), fear of perforation (8.5%), fear of menstrual disturbances (7.5%) and no acceptable reason (4%). It appeared that success of family planning program in the industrial area depends mainly on the socio-economic status which has to be improved to reduce the high fertility rate.

Key words: acceptance, family planning, IUCD, industrial area

Introduction

The socio-economic factors were possibly responsible for increasing the fertility rate in the industrial area. Therefore, it was decided to study how these factors exert their influence on increase in population of this sector and at the same time acceptance of Family Planning Program (IUCD).

Materials and methods

This survey was undertaken in the family planning clinic of College of Medicine and JNM Hospital, Kalyani, Nadia, West Bengal since January 2010 to April 2014. During this period 1000 families of industrial workers were interviewed and analyzed to find out various socio-economic factors responsible for high fertility rate and

failure of I.U.C.D. Program.

A complete history regarding types of workers, age of women at marriage, parity, literacy rate, economic status, nutritional status, pregnancy wastage, I.U.C.D. Program and lastly reason for failure of I.U.C.D were evaluated in details. These findings were tabulated and correlated with one another.

Out of 1000 families, 80 percent were from male worker families whereas 20 percent were female workers. Most of the women (85%) were married before 20 years of age (Table-1) and having 4 or more children (82%), 18% of women workers were having less than 4 children indicating lower fertility in employed women as compared to the unemployed ones

TABLE -1 AGE OF MARRIAGE

Age in years	Number	Percentage
10-15	350	35%
16-20	500	50%
21-25	100	10%
26-30	30	3%
31-35	20	2%
35 and above	-	-

TABLE -3 PARITY DISTRIBUTION

Parity	Number	Percentage
1-2	30	3%
2-3	50	5%
3-4	100	10%
4-5	250	25%
5-6	270	27%
6 and above	300	30%

On further evaluation it was revealed that (table 3) 91% do not have any basic education as compared to 9% primary school level. Most of them have no knowledge as regards to fertility concerns and family planning program.

TABLE -3 LITERACY RATE

	Number	Percentage
Illiterate	910	91%
Primary School level	90	9%
High School level	-	-
College level	-	-

Economic status of 90% were found to be poor (table -4). They include 80% male workers and 10% female workers. Only 9% female workers were enjoying average economic status because of more earning members in the family.

TABLE-4 ECONOMIC STATUS

	Number	Percentage
Poor	900	90%
Average	90	9%
Good	10	1%

As regards the acceptance of family planning program, it is interesting to note that 70% family were reluctant to undertake any methods of family planning program. Only 3% I.U.C.D, 5% oral tablets and 2% condom (nirodh) acceptance respectively (table -5). There is slightly better acceptance of tubectomy 10% and vasectomy 9% operation were reported, as compared to other contraceptive methods. But overall acceptance was very poor.

TABLE -5 ACCEPTANCE AND NONACCEPTANCE OF FAMILY PLANNING PROGRAM

	Number	Percentage
Non-acceptance	700	70%
Tubectomy	110	11%
Vasectomy	90	9%
I.U.C.D	30	3%
Oral Tablet	50	5%
Condom	20	2%

On further analysis from 700 non-acceptance cases, it was revealed that all of them refused to undergo sterilisation operation because of various reasons. But alternatively, when IUCD was advised, they refused to accept it because of various reasons such as (1) Desire for more children-38%, (2) Fear of ill health- (20%), (3) Fear of cancer- (12%), (4) Opposition from husband – (10%), (5) fear of perforation- (8.5%), (6) fear of menstrual disturbance – (7.5%) (7) no

acceptable reason-(4%).

TABLE -6 REASON FOR NON-ACCEPTANCE OF I.U.C.D (N=700)

	Number	Percentage
Desire for more children	266	38%
Fear of ill health	140	20%
Fear of cancer	84	12%
Opposition from husband	70	10%
Fear of perforation	60	8.5%
Fear of menstrual disturbances	52	7.5%
No reason	28	4%

Discussion:

This study has shown that acceptance of I.U.C.D are very poor in industrial worker (who in spite of the high fertility rate refused sterilization operation.

The reasons for high fertility rate in industrial worker have been seen in the present study. There is still a great desire to marry early because of customs and taboos and early sexual desire. 85% of women who married before 20years of age, have 4 and more children. These young married women showed lack of contraceptive knowledge as compared to older married women and were reluctant to discuss family planning with the interviewers. Hence raising the age of marriage of women above 20 years could have significant effect in curtailing the effective reproductive span of women and thereby, reduction in fertility could be achieved because of better understanding of family planning measures by older women⁽¹⁾.

Another factor which has a profound influence on reducing fertility is the literacy rate of a couple, particularly that of wife. In the present study, 91% female were illiterate. Only 9% had attended the primary school level. Therefore, all women should be educated as it is seen that the better educated women are more likely to use contraceptive.^(2,3,4)

Economic status has profound influence on the fertility of an industrial worker. High fertility rates were observed in families of workers with poor economic status (90%) as compared to low fertility rates in families having average (9%) and high (1%) economic status respectively.

Family planning program in industrial area were found to be very poor. 70% of families were reluctant to undergo any operative methods, alternatively when I.U.C.D was advised they refused it too. Main reasons for non-acceptance of I.U.C.D in the present study were a great desire for more children (30%) which leads to more employed hand in the family which indirectly increases the fertility rate.

The general ill health phobia is a big problem in this region. 7.5% cases in the present study were afraid of disturbance of menstrual cycles and 20% fear of ill health. All the above problems were well predicted before the I.U.C.D insertion.

Fear of cancer (12%), opposition from husband (10%) and fear of perforation (8.5%) in the present study is a real problem and that has to be overcome by proper education and

counselling. The husband should be taken into confidence from the initial stage of counselling for I.U.C.D.

Conclusion:

It appeared from this study that success of family planning program in an industrial area depends mainly on the socio-economic status of the worker's family which has to be improved to reduce the high fertility rate.

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Original Article

PREVALENCE OF ANAEMIA IN ANTENATAL PATIENTS IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: In many developing countries anaemia continues to be a major health problem and is associated with increased rates of both maternal and perinatal mortality, premature delivery, low birth weight besides other adverse outcomes. Anemia in pregnancy is defined by the World Health Organization (WHO) as a hemoglobin concentration below 11 g/dL. Maternal mortality rates show a steep increase when maternal hemoglobin levels fall below 5.0 g/dl.

Materials & Methods: This is a retrospective hospital-based study carried out in the department of Obstetrics and Gynaecology, College of Medicine and JNM Hospital, Kalyani (West Bengal). All antenatal women who were delivered in our institute from 1st January 2017 to 31st December 2017 were included in the study. Data, in the form of hemoglobin percentage, registration status, age and parity of patients, address, baby weight, was collected.

Results: A total of 8107 patients delivered in the study period. Out of them, 7,153 (88.23%) were found to be anemic. As per WHO criteria, 4086 patients (57.12%) had mild anaemia, 2525 patients (35.3%) had moderate anaemia while 7.57% women had severe anaemia. 2406 patients (33.63%) were unregistered cases and 80.8% of the severe anaemia were unregistered. Most of the pregnant women (31.7%) were within the age group of 21–25 years. 54% patients were multigravida and 78% patients belonged to rural area. Out of the 7153 patients, 27 women delivered dead babies. 49% patients had baby weight in group of 2.1 to 2.5 kg.

Conclusion: Despite the various measures taken to control anaemia in pregnancy in the last few years, the severity of anaemia continues to remain a major public health issue. A high prevalence of anemia in pregnant women apparently increases the maternal and fetal risks. The present setup infrastructure has to be strengthened so that every woman gets antenatal care.

Key words: Anemia, pregnancy, antenatal care

Introduction

In many developing countries anaemia continues to be a major health problem and is associated with increased rates of both maternal and perinatal mortality, premature delivery, low birth weight besides other adverse outcomes. Anemia in pregnancy is defined by the World Health Organization (WHO) as a hemoglobin concentration

below 11 g/dL ^[1]. Anemia in pregnancy is also defined based on the level of pregnancy. For first and third trimesters hemoglobin levels <11 g/dl and for second trimester <10.5 g/dl are considered anaemic ^[2]. The National Family Health Survey-3 (NFHS-3) data suggests that anemia is widely prevalent among all age groups, and is particularly high among the most vulnerable— nearly 58% among pregnant women, 50% among nonpregnant

nonlactating women, 56% among adolescent girls (15 to 19 years) [3]. During pregnancy 30-50% of women become anaemic. The most common causes of anaemia in pregnancy include iron deficiency, folate deficiency, vitamin B12 deficiency, hemolytic diseases, bone marrow suppression, chronic blood loss and underlying malignancies [4]. The predisposing factors include grandmultiparity, low socioeconomic status, malaria infestation, late booking, Human Immunodeficiency Virus (HIV) infection, and inadequate child spacing among others [5,6]. Maternal mortality rates show a steep increase when maternal hemoglobin levels fall below 5.0 g/dl. In World Health Organization/ World Bank Ranking, iron deficiency anaemia is the third leading cause of disability-adjusted life years for females aged 15 to 44 years [7]. In most of the cases, anaemia is largely preventable and easily treatable if detected in time. Effective management of anaemia includes treatment of the underlying causes, restoration of the hemoglobin concentration to normal levels, and prevention and treatment of complications [8]. Present study was carried out to study the prevalence of anaemia among pregnant women and to study the associated risk factors associated with anaemia.

Materials & Methods

This is a retrospective hospital-based study carried out in the department of Obstetrics and Gynaecology, College of Medicine and JNM Hospital, Kalyani. Data was collected from the medical record section from 1st January 2017 to 31st December 2017. All antenatal women who were delivered in our institute were included in the study. Data, in the form of hemoglobin percentage, registration status, age and parity of patients, address, baby weight, was collected. Anaemia in pregnancy was defined and classified as per WHO classification as Mild anaemia (Hemoglobin - 10 to 10.9 gm%), Moderate anemia (Hemoglobin - 7 to 9.9 gm%) and Severe anemia (Hemoglobin <6.9 gm%).

Association of anaemia with factors like age of mother, registration status (registered or not), parity, residence, baby weight was studied and data analysis was done.

Results

A total of 8107 patients delivered in the study period. Out of them, 7,153 (88.23%) were found to be anemic. As per WHO criteria, 4086 patients (57.12%) had mild anaemia, 2525 patients (35.3%) had moderate anaemia while 542 women (7.57%) had severe anaemia (Table 1).

Table 1: Degree of anaemia (as per WHO)

Degree of anaemia	Number of patients	Percentage (%)
Mild	4086	57.12%
Moderate	2525	35.3%
Severe	542	7.57%
Total	7153	

As seen in Table 2, 2406 patients (33.63%) were unregistered cases and 80.8% of the severe anaemia were unregistered.

Table 2: Association between degree of anaemia and registration status

Degree of anaemia	Unregistered cases (%)	Registered cases (%)	Total
Mild	329(8.05%)	3757 (91.94%)	4086
Moderate	1639 (68.12%)	886 (35.08%)	2525
Severe	438 (80.8%)	104 (19.18%)	542
Total	2406 (33.63%)	4747 (66.36%)	7153

Most of the pregnant women (31.7%) were within the age group of 21–25 years as seen in Table 3. Table 3 shows that 54% patients were multigravida and 78% patients belonged to rural area.

Table 3: Demographic analysis of anaemic pregnant women

		Number of cases	Percentage (%)
Age	>20 years	1867	26%
	21-25 years	2268	31.7%
	26-30 years	2105	29.42%
	>30 years	913	12.76%
Parity	Primi	3296	46%
	Multi	3857	54%
	Rural	4950	69.2%
	Urban	2203	30.8%

Out of the 7153 patients, 27 women delivered dead babies. Hence the baby weight of the rest 7126 patients was taken into consideration. 49% patients had baby weight in group of 2.1 to 2.5 kg (Table 4).

Table 4: Distribution of anaemic patients according to baby weight

Weight of baby	Number of cases	Percentage (%)
<2 kg	2175	30.5%
2.1-2.5 kg	3496	49%
2.6-3 kg	1408	19.75%
>3 kg	47	0.65%

Discussion

Anaemia in pregnancy is an important public health problem as it impacts not only on the pregnant woman but also significantly affects the unborn child [9]. Anaemia gives rise to various problems ranging from lethargy, preterm delivery, postpartum hemorrhage, low birth weight, menorrhagia, decreased quality of life to congestive cardiac failure [10]. Anaemia directly causes 20% of maternal deaths in India and indirectly accounts for another 20% of maternal deaths [11]. The ministry of Health, Government of India has recommended intake of

100mg of elemental iron with 500 mcg folic acid tablets in second half of the pregnancy for a period of at least 100 days.

The prevalence of anemia ranges from 33% to 89% among pregnant women and is more than women from 60% among adolescent girls with wide variations in different regions of the country [12]. In our study 88.23% pregnant women were anaemic. Toteja GS et al and Agarwal KN et al also found prevalence of anaemia to be 84.9% and 84% respectively [13, 14]. Some studies found lower prevalence around 58.36% and 56.4% respectively [15,12]. A study in South east China reported significantly low prevalence of anaemia (39.6%) [16].

We found that majority (57.12%) of the women had mild anaemia, 35.3% had moderate anaemia and 7.57% had severe anaemia. This is in contrast to the findings of Mandve P et al where majority (93.8%) had moderate anaemia and only 0.8% had mild anaemia [10]. 2406 patients who delivered in our hospital were unregistered and 80.8% of the severe anaemia group had no antenatal checkups. Many studies have shown that anaemia is more common in unregistered patients [10,7].

In the present study majority (61.12%) of the anaemic women were of the age group 21-30 years while 12.76% were above 30 years of age. Mandve P et al found around 81.4% to be a of 21-30 years while Rajamouli J et al concluded that 72% were of age group 20 years to 29 years. Several studies have proved that prevalence of anaemia is maximum in the reproductive age group (mostly 21 to 30 years) and this badly affects the quality of life and increases morbidity.

We observed that 54% of the anaemic women were multipara which is similar to the findings of Anlaaku P et al. Increasing parity and short interconceptional period maximizes the chance of anemia in subsequent pregnancies. As babies of anemic mothers have low iron reserve, iron deficiency aggravates in adolescent and precipitates as anemia during pregnancy [10]. In our study the anaemic women mostly belonged to the rural areas (69.2%). Rural population is in general found to be ignorant toward the health and nutrition. Lack of education, lack of knowledge of health facilities and government health schemes prevent them from availing the health facilities [10]. Early marriage, worm infestations, poor quality of food intake, gender discrimination etc are some of the other causes of anaemia in rural areas. Unwanted pregnancies, abortions, recurrent deliveries deplete already jeopardized iron stores. Thus, various methods of contraception should be readily available. Social campaign for the awareness of antenatal care and contraception should be strengthened.

In our study, 49% of the babies were in the group of 2.1-2.5 kg which is comparable to the findings of Mandve P et al where 48.3% cases had baby weight 2.1-2.5kg. Anemia is a risk factor for the complications like low birth weight, intrauterine growth retardation, pre-term delivery, prenatal mortality, low Apgar score etc. Maternal iron

deficiency contributes to reduced fetal iron stores and infants born to anaemic mothers have low iron stores and are more likely to develop anaemia [17].

Prevention of anaemia should start from adolescent period. Regular intake of food rich in iron, iron tablets and deworming can help to reduce anaemia significantly. Menstrual problems (menorrhagia, metrorrhagia etc) should be treated early. Health care workers should provide information on anemia, iron deficiency/other causes to target populations. Fortification of food can be a cost-effective way to improve iron content. Promoting safe water, sanitation and hygiene (WASH) maybe important in anaemia prevention (WHO). Teenage pregnancy should be prevented. Pre-pregnancy counselling often helps to treat causes of anaemia and thus avert the complications during pregnancy. As part of routine antenatal care, emphasis should be on receiving more detailed dietary advice and ways to optimise nutritional status in pregnancy. This would be more effective if done in a personalized fashion.

Conclusion

Despite the various measures taken to control anaemia in pregnancy in the last few years, the severity of anaemia continues to remain a major public health issue. A high prevalence of anemia in pregnant women apparently increases the maternal and fetal risks. The present health setup infrastructure has to be strengthened so that every woman gets antenatal care. Prevention, early diagnosis, and treatment of anaemia in pregnancy needs priority to improve maternal and fetal outcome.

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Original Article

CLINICAL OUTCOME IN EMERGENCY PERIPARTUM HYSTERECTOMY AT A TERTIARY CARE CENTRE

Ramaraju HE , Prakrutha S.

ABSTRACT

Background: In modern obstetric practice, peripartum hysterectomy is a lifesaving procedure to control massive hemorrhage when medical treatment and conservative surgery fails. The reported incidence varies between 0.2 and 5.4 in 1000 deliveries.

Materials and methods: The present prospective study was carried out in Vijayanagar Institute of Medical Sciences (VIMS), a tertiary hospital and teaching institute at Bellary, Karnataka. Study was conducted for a period of one year from September 2014 to August 2015. Study source included all the patients delivering (vaginally and by cesarean section) at VIMS during the study period.

Results: During the study period of one year a total number of 9758 deliveries were conducted at the hospital out of which 5921 (60.7%) were vaginal deliveries and 3837 (39.3%) were cesarean deliveries. Emergency peripartum hysterectomy was performed in 13 cases. The incidence of peripartum hysterectomy was 1.3 /1000 deliveries. Most common indication for performing emergency peripartum hysterectomy was intractable obstetric hemorrhage due to atonicity, with an incidence of 53.84%. The most common risk factor was multiparity with an incidence of 69.23%.

Conclusion: Present study highlights the need for overall improvement in health care system, experienced surgeons to minimize the potential complications and use of proper guidelines and protocols to control obstetric hemorrhage. In the age of rising cesarean deliveries, here comes a responsibility and a challenge - to take into consideration of a woman's long-term reproductive outcomes.

Key words: peripartum hysterectomy, cesarean delivery, obstetric hemorrhage, atonicity, multiparity.

Introduction

Peripartum or obstetric hysterectomy is the removal of corpus uteri alone or with the cervix at the time of cesarean delivery or shortly after a vaginal delivery. The removal of uterus at cesarean section is referred to as cesarean hysterectomy while the removal after vaginal birth is called postpartum hysterectomy. It has been described as one of the most dramatic operations in modern obstetrics and therefore associated with significant maternal morbidity and mortality^[1]. The mortality of peripartum hysterectomy

is 25 times than that of hysterectomy performed outside pregnancy^[2].

In modern obstetric practice, peripartum hysterectomy is a lifesaving procedure to control massive hemorrhage when medical treatment and conservative surgery have failed³. The reported incidence varies between 0.2 and 5.4 in 1000 deliveries. Majority of studies quote an incidence of 1 per 1000 deliveries or less but much variation is reported in literature⁴. Higher incidence is reported from developing countries due to higher prevalence of unbooked cases, lack of adequate blood products which limits the time available

for examining the effectiveness of other conservative procedures¹. The most common indication is uterine hemorrhage but the underlying causes vary, and may be due to uterine atony, uterine rupture, abnormal placentation, leiomyomas, coagulopathy or lacerations of uterine vessel not treatable by conservative measures. The purpose of the study was to observe the incidence, indications, risk factors involved and maternal outcome with emergency peripartum hysterectomy.

Materials and methods

The present prospective study was carried out in Vijayanagar Institute of Medical Sciences (VIMS), a tertiary hospital and teaching institute at Bellary, Karnataka. Study was conducted for a period of one year from September 2014 to August 2015. Study source included all the patients delivering (vaginally and by cesarean section) at VIMS during the study period. Maternal characteristics like age, parity, previous cesarean delivery, mode of delivery, indications for peripartum hysterectomy and its complications and outcome were studied.

Results

During the study period of one year a total number of 9758 deliveries were conducted at our hospital out of which 5921 (60.7%) were vaginal deliveries and 3837 (39.3%) were cesarean deliveries. Emergency peripartum hysterectomy was performed in 13 cases. The incidence of peripartum hysterectomy was 1.3 /1000 deliveries. Of the 13 cases 12 had cesarean hysterectomy and 1 woman had hysterectomy following vaginal delivery. (Table 1)

Table 1: Incidence of peripartum hysterectomy.

Total no of vaginal deliveries	5921
Total no of cesarean deliveries	3837
Total no of peripartum hysterectomies	13
Incidence of peripatum hysterectomies	0.13%

The mean maternal age was 23.30 +_ 2.52 years. (Range 20-28 years). Amongst the 13 women who underwent peripartum hysterectomy 4 were nulliparous, 9 were multiparous out of which 4 were of parity three and above. Demographic characteristics of the patients are shown in table 2.

Table 2: Demographic characteristics of the patients

	Mean+_standard deviation	Minimum-maximum
Age (years)	23.30+_2.52	20-28
Gravida	2.38 +_ 1.44	1-5
Parity	1.31+_1.43	1-3
Gestational age (in weeks)	36.92+_3.69	36-41

Out of the 13 peripartum hysterectomies, 12 were following emergency cesareansection and one following vaginal delivery. Out of the 12 CS done, 46.15% cases were repeat

CS (all of them being previous one LSCS), 3 cases (25%) were placenta previa, 2 cases were taken up for nonreassuring fetal status, one case of obstructed labour in 2nd stage and one case for cephalopelvic disproportion.

Most common indication for performing emergency peripartum hysterectomy was intractable obstetric hemorrhage due to atonicity, seen in 7 out of the 13 cases, an incidence of 53.84%. To avoid hysterectomy pharmacological agents and surgical procedures were tried to control hemorrhage. All patients received oxytocin and prostadine/misoprostol and erogometrine. B lynch sutures was performed 4 cases, uterine artery ligation done in 2 cases and internal iliac artery ligation done in one case.

Other common indications for which hysterectomy was performed included placenta previa (3 cases) of which 2 were placenta accreta. Rupture uterus was seen in 2 cases and one case was due to traumatic PPH/ colporrhexis following vaginal delivery. Table 3 presents the indications for emergency peripartum hysterectomy.

Table 3: indications for emergency peripartum hysterectomy

Indication	No of cases	Incidence in %
Atonic uterus	7	53.84
Placenta previa	3	23.07
Rupture uterus	2	15.38
Traumatic PPH	1	7.69

The most common risk factor for peripartum hysterectomy in our study was previous cesarean delivery with an incidence of 46.15%. Other risk factors included placenta previa with an incidence of 23.07%, operative delivery (1 case) – use of outlet forceps leading to colporrhexis. Table 4 shows risk factors predisposing to peripartum hysterectomy. Subtotal hysterectomy was done in 12 cases whereas in one case total hysterectomy was done due to placenta previa type IV.

Table 4: Risk factors for peripartum hysterectomy

Risk factors	No of cases out of total cases	Incidence in %
Previous LSCS	5/13	46.15
Placenta previa	3/13	23.08
Abruption	2/13	15.38
Operative delivery	1/13	7.69

Postoperatively all 13 patients received blood transfusion with pre-operative incidence of anemia in these patients being 61.53%. Febrile illness was the commonest maternal morbidity. ICU care was required in 5 cases, an average hospital stay was for 8-12 days. Other complications included lower respiratory tract infection (23.07%) and one case of wound infection (7.69%). There was one maternal mortality secondary to septicemia (7.69%) and the perinatal mortality rate was 36.76%.

Table 5: Maternal morbidity and mortality

Postoperative outcome	No of cases	INCIDENCE (%)
Febrile illness	6	46.15
RICU care	5	38.46
Lower respiratory infection	3	23.07
Mortality due to septicemia	1	7.69
Wound infection	1	7.69

Discussion:

Peripartum hysterectomy has undergone tremendous change in terms of indications and frequency of the procedure. It is the final step in the treatment of life-threatening obstetric hemorrhage that cannot be controlled by conventional methods. Caesarean delivery is the most important risk factor for peripartum hysterectomy. Those who undergo caesarean delivery are six times more likely to require peripartum hysterectomy than who undergo vaginal delivery [5,6]. Similar findings were observed in our study. The risk of peripartum hysterectomy increases with the number of prior cesarean deliveries.

The incidence of peripartum hysterectomy was 1.3/ 1000 deliveries in our study similar to the frequency reported in other Indian studies [7]. The reported incidence varies from 0.24-5.09 per 1000 deliveries in literature⁴. Our incidence of 1.3/1000 is in agreement with recent studies.

Up to 54% of the patients were in the age group of 23-25 years. Maximum number of patients belonged to para 2 and above with patients of higher parity being at more risk and associated complications. Barclay in 1975 showed that 82.6% of patients undergoing cesarean hysterectomy were para 2 and above [8]; our results run in conformity.

The most frequent indication for peripartum hysterectomy in the present study was uterine atony, followed by abnormal placentation and uterine rupture. There has been significant change in the indication of peripartum hysterectomy over time and different regions. Traditionally atonic uterus was the most common indication for hysterectomy. Recent studies have indicated that abnormal placentation is replacing uterine atony as the most common indication [9,10]. In 2012 Joana et al. in a 10-year review reported that 76.92% of hysterectomies were due to uterine atony followed by placental abnormalities and rupture [9]. Similar results have been reported in a study by Ozden et al [11]. Baskett reported that main indications for peripartum hysterectomy were abnormal placentation (50%) and atonic postpartum hemorrhage (32.8%) [12]. We can conclude that there is considerable variability in the indications worldwide and varies from region to region and with obstetric practice in each center.

Peripartum hysterectomy is associated with high complication rates mainly due to need for massive blood transfusions, coagulopathy, injuries to the urinary tract and sometimes with need for reexploration due to persistent bleeding and febrile morbidity [9]. All our patients needed blood transfusion with at least one packed cell considering

that 69.53% of the patients had pre-operative anaemia. There were no urinary tract injuries associated in our study. Other complications included septicemia, wound infection as reported in other studies [13,14].

Subtotal hysterectomy was the commonly performed surgery in our study as was in other studies which may be due to the maternal condition requiring a speedy and a simpler procedure. A subtotal hysterectomy may control hemorrhage successfully in case of rupture or uterine atony. If there is no cervical involvement, a subtotal hysterectomy may be technically easier but may not reduce the complication rates [15]. In case of pathological placentation, particularly involving the cervix, a total hysterectomy is required to control the hemorrhage which is surgically more difficult and more likely to be associated with maternal morbidity if placental localization involves the bladder [16].

The maternal mortality in our study was 7.6% which is comparable to other Indian studies [17,13] 9.7 and 9.3% respectively but very high compared to the developed countries [1]. High mortality may be due to the delay in arriving at the hospital as in most of the developing countries health care system is poorly developed, most of the patients were unbooked, received to hospital from peripheral referral centers.

Conclusion

Present study highlights the need for overall improvement in health care system such as identifying high risk pregnancies and timely referral from the peripheral centers, ambulance facilities, and availability of adequate blood products, need experienced surgeons to minimize the potential complications and use of proper guidelines and protocols to control obstetric hemorrhage.

Newer alternatives in surgical techniques such as balloon tamponade, arterial embolization, and pelvic devascularization have been developed to arrest hemorrhage and to avoid hysterectomy. The choice of measure will be influenced by the availability of expertise.

Uterine rupture cases will decline if close monitoring of labour is done along with judicious use of oxytocics. In the age of rising cesarean deliveries with increased frequency of morbidly adherent placenta come a responsibility and a challenge to take into consideration of women’s long-term reproductive outcomes.

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Review Article

PREGNANCY INDUCED HYPERTENSION – IN CONTEXT OF AFGHANISTAN

Malalai Jamshid Nejaby

ABSTRACT

Just like many south asian countries, PIH is one of the major causes of maternal mortality in Afganistan. In many cases it is avoidable .in the present article the treatment protocol that is being followed in Afganistan and its comparison with many south Asian countries will be discussed. Recent advancements and their applications have also been reviewed. Above all our review article is directed to come up with new treatment protocol to reduce maternal mortality in Afganistan.

Keywords: PIH, incidence, risk factors, health setup, management.

Introduction

Maternal mortality is unacceptably high; about 830 women die from pregnancy- or childbirth- related complications around the world every day. It was estimated that in 2015, roughly 303000 women died during and following pregnancy and childbirth. Almost all of these deaths occurred in low-resource settings, and most could have been prevented. Please add something about maternal death in Afghanistan as well.

Pregnancy Induced Hypertension (PIH) is among the most common causes of maternal mortality. It is one of the most common form of pregnancy-related hypertensive disorder, which accounts approximately 10% of maternal deaths in Southern Asia and as high as 20% maternal deaths in Afghanistan [1]. Yet the majority of maternal and newborn deaths related to PE/E could be avoided if women received timely and effective care. Criteria for diagnosis of pre-eclampsia includes onset of a new episode of hypertension during pregnancy, characterized by persistent hypertension (diastolic blood pressure \geq 90mmHg) and substantial proteinuria ($>0.3g/24$ hours). Criteria for diagnosis of eclampsia includes generalized seizures, in addition to pre-eclampsia criteria.

Among the hypertensive disorders, PIH have the greatest impact on maternal and newborn morbidity and mortality. Dietary requirement for different nutrients increases during pregnancy. The dietary intake of many Afghan women,

however, is significantly below the recommended dietary requirements. Two of the most important nutrients are iron and calcium. Adequate calcium intake during pregnancy and lactation has the potential to prevent pre-eclampsia, pre-term birth, improve maternal bone mineral content, breast milk concentration and bone development of neonates. While there is national guideline available on calcium supplementation for different age groups, this protocol is developed to guide the proper calcium supplementation during pregnancy in order to prevent PIH.

Pregnancy and birth-related complications are leading causes of death among women of reproductive age in developing countries. In 2008 alone, an estimated 358,000 women worldwide died from complications related to pregnancy or childbirth (WHO et al. 2010). The vast majority of maternal deaths occur in developing countries, where hemorrhage, obstructed labor, eclampsia, abortion, sepsis, and infection are the main causes of pregnancy-related complications (WHO et al. 2010).

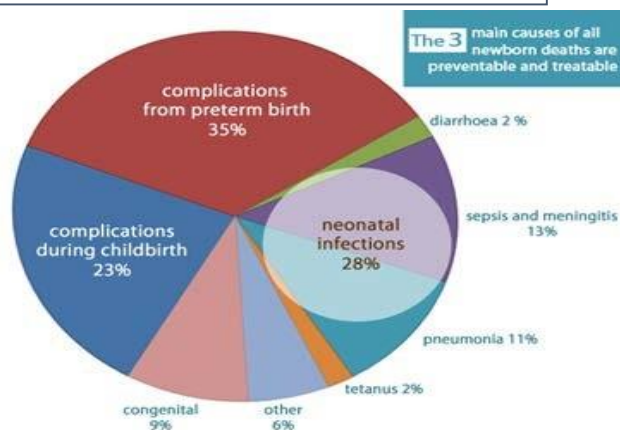
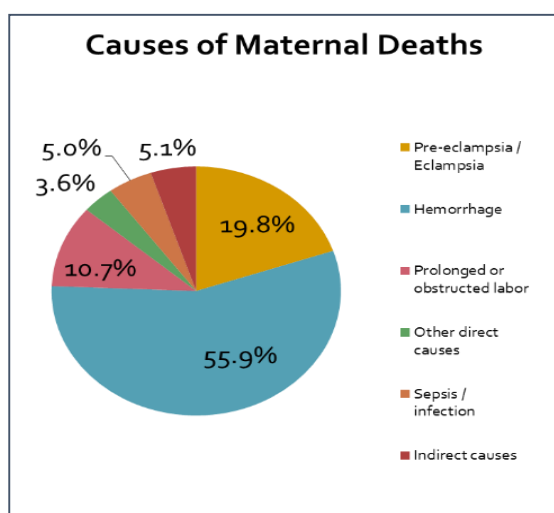
Afghanistan has long been recognized as having one of the highest levels of maternal and new born mortality in the world. And it was estimated 40% to 50% of women's death during the childbearing years are related to complications during pregnancy and childbirth [2].

Maternal mortality in Afghanistan has declined overall during the past 15 years but may have increased slightly since about 2010 because of increasing insecurity. The 2000–2002 MMR of 1,600 per 100,000 found in the Reproductive Age Mortality Study I (RAMOS I) is well

attested⁷. It is agreed that the MMR of 327 in the 2010 Afghanistan Mortality Survey (AMS) was too low and that the AfdHS 2015 MMR of 1,291 is too high, in both cases because of data problems. However, the lack of overlap of their confidence limits suggests that there was some increase in the MMR between the two studies.

An MMR of 661 per 100,000 is suggested instead of the 1,291 reported in the AfdHS (RMNCAH strategy 2017-2021)^[3].

The newborn mortality rate for the period 2011–2015 was 22 per 1,000 live births, this means that 40% of all under-five deaths occur in the first month of life⁴. Newborn mortality has continued to decline as access to and use of both SBA and child health services have improved, but this decline has been slower than the declines in post-neonatal and child deaths.



Source: Liu L, Johnson H, Cousens S et al. 2012. Global, regional and national causes of child mortality: an updated systematic analysis. Lancet 379(9832):2151-61.

INCIDENCE AND SPECTRUM OF THE DISEASE IN THE RESPECTIVE COUNTRY

PIH is among the most common causes of maternal mortality in Afghanistan after which account approximately 10% of maternal deaths in Southern Asia and as high as 20% maternal deaths in Afghanistan^[8]. There is no specific data in HMIS on PIH it included in pregnancy complications and still there is no research about exact data of PIH, but

According to quality of care study 2016 - 2017 in 246 health facility assessment in 34 provinces of Afghanistan below are major findings related to PIH^[9]:

- 806 interviews with Skilled Birth Attendant (SBAs)
- Facility Readiness to Prevent and Manage PE/E**
- 66% of facilities report providing delivery services 24 hours/day, 7 days/week
- 90% facilities have a functioning blood pressure apparatus
- 81% facilities have injectable magnesium sulfate (MgSO₄) available in the delivery room for management of PE/E
- 52% facilities have injectable calcium gluconate available in the delivery room in case of MgSO₄ toxicity

PE/E Prevention Practices Observed^[10]

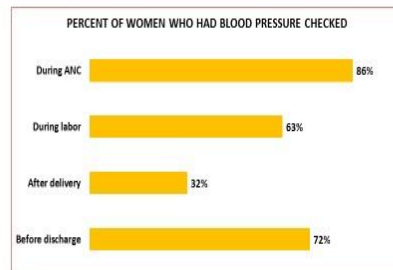
- 36% of pregnant women are asked about severe headaches and/or blurred vision
- 63% of women have their blood pressure checked at least once during labor
- 34% of postpartum women have their blood pressure checked before discharge from facility after childbirth

SBA Knowledge of How to Manage Severe Pre-eclampsia

- 83% of SBA know to administer magnesium sulfate
- 57% of SBA know to administer anti-hypertensive
- 43% of SBA know to deliver the baby within 24 hours of severe pre-eclampsia being diagnosed

DETECTION AND MANAGEMENT OF HYPERTENSIVE DISORDERS

EARLY DETECTION OF SEVERE PRE-ECLAMPSIA REQUIRES REGULAR BLOOD PRESSURE MONITORING DURING PREGNANCY, LABOR AND THE POSTPARTUM PERIOD.



37%
of women do not have blood pressure checked during labor

68%
of women do not have blood pressure checked after delivery

81% of facilities have MgSO₄ for treatment of pre-eclampsia/eclampsia in the delivery room

GLOBAL EPIDEMIOLOGY: HYPERTENSIVE DISORDERS ACCOUNT FOR 1 IN 8 MATERNAL DEATHS.

FACILITIES AVAILABLE-PERIPHERAL HOSPITALS/TEACHING INSTITUTIONS/HDU/ANY SPECIALIST INSTITUTE

In the basic package of health services (BPHS) and essential package of hospital services (EPHS) provision of maternal and neonatal health services are major part of health services provision, which also includes PIH prevention, diagnosis and management as per MOPH standardized protocols^[11].

The standardized classification of health facilities that provide the basic health services in the BPHS are as follows:

- Health posts
- Mobile health teams (MHTs)
- Health sub-centers (HSCs)
- Basic health center (BHC)
- Comprehensive health center (CHC)

- District hospital (DH)

The EPHS was endorsed by the MOPH in July 2005. For each of the three levels of hospitals— district, provincial, and regional and specialty hospitals

EPHS identifies ^[12].

- The hospital services provided;
- The diagnostic services that should be available;
- The equipment necessary for providing the services in the hospital;
- The elements of the Afghanistan Essential Drug List needed at each type of hospital

Beside provision of PIH prevention, management and referring PIH is integrated as major component of BEOC training in preservice training curricula of medical universities there are teaching hospitals from MOHE and of health and Science institutes and 22 Community midwifery Education and community health nursing education in which PIH is component of their curricula ^[13]

Also, beside government there are Private medical institutes and universities and 510 private hospital which includes 300 OPD private clinic who provide management and referral of PIH cases ^[5].

MANAGEMENT STRATEGIES FOLLOWED IN THE COUNTRY

According to RHMNACH protocol Calcium Supplementation protocol as Primary Prevention of PIH among Pregnant Women in Afghanistan according to WHO 2013 guideline is providing high doses (>1gm/day) ^[14], especially in areas where dietary calcium intake is low the management strategies for PIH are:

- Train and orient all health care providers and Community Health workers (CHWs) on importance of calcium supplementation as a primary prevention of PE/E.
- Enhance the distribution and uptake of calcium tablets along with Iron Folic Acid tablets among all pregnant women during Ante Natal Care (ANC) visits.

- Raise community awareness on PE/E dangers and establish the referral and linkage between community and health facilities to contribute in timely prevention and management of PE/E.

- Strengthen ANC visits and encourage pregnant women to attend four ANC visits.

- Assure pregnant women, families and communities get awareness on PIH.

ANY HEALTH POLICY EXISTING IN THE COUNTRY IN RESPECT TO PIH AND ANY UP-GRADATION REQUIRED

According to current RHMNACH strategy 2017-2021 the raise strategic approaches for scaling up implementation of high impact evidence-based interventions Like ^[15].

- Introduction of calcium tablets during pregnancy for primary prevention of pre- eclampsia/eclampsia.

Also, there is another strategic approach that emphasis on maintaining and improvement the quality of midwifery and obstetric care in all public health facilities by strengthening and maintaining the availability of quality routine maternity

care, basic or comprehensive emergency obstetric and newborn care as appropriate in different levels of facility which includes below specifications:

- Maintain the regular use of the National Health Facility Integrated Monitoring Checklist to monitor facilities at the provincial level.
- Conduct periodic in-depth national EmONC assessment of facilities at all three levels of obstetric care.
- Scale up mentorship program for midwives across the country.

Routine maternity care should always include cleanliness of the facility and midwifery technique, use of the partograph to monitor progress of labor, and AMTSL. The provision of BEmONC services includes, but is not limited to, intravenous and intramuscular administration of drugs such as antibiotics, uterotonics, anti-hypertensive, and anticonvulsants; assisted vaginal delivery; manual removal of the placenta; manual vacuum aspiration; and stabilization and referral of obstetric emergencies not managed at the basic level. The provision of CEmONC services for mothers includes all the above services plus caesarean sections and blood transfusion services.

The RMNCAH Directorate advocates appropriate pre-service and in-service training of all cadres of health care providers in normal obstetric care, BEmONC, CEmONC, and respectful maternity care, post abortion care and other newly introduced refresher/initial trainings ^[16].

Specific actions will include:

- Strengthen pre-service and in-service training and follow-up after training through regular review and revision of learning packages, protocols, and guidelines.
- Advocate on provision of regular in-service and refresher training according to needs assessments and national policy.
- Develop job aids (checklists, wall charts and ...) for essential EmOC procedures, especially in facilities where they are not frequently formed ^[21].
- Support national professional associations and regulatory bodies in implementation of accreditation and certification programs.

According to MOPH technical guides below are policies for prevention and management of PIH:

- Supplementation of oral chewable calcium tablets as part of the antenatal care is recommended for all pregnant women after 14 weeks.
- Each calcium tablet should contain 500 mg elemental calcium.
- Dietary counselling during the Ante Natal Care visits to all pregnant women.

Discussion:

PIH is the cause of around 20% maternal deaths in Afghanistan and overall PIH complicates approx. 5% of pregnancies. Both maternal and neonatal morbidity and mortality are increased in pregnancies complicated by PIH, and it is the main maternal cause of pre-term birth. Optimizing health service delivery to prevent and treat women with PE/E is a necessary step towards reaching the targets set to end preventable maternal and newborn deaths due to PIH. Meanwhile, according to evidence-based standards, provision of quality Antenatal Care (ANC) services serve an important entry point for early identification and prevention of PEE. A functional and accountable health system with up to date competent staff who are able to provide the best care possible at the right time and in the right place play a key role in improved maternal and newborn health indicators.

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Review Article

PREECLAMPSIA SCENARIO IN INDIA

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ABSTRACT

In recent years, incidence of hypertension in pregnancy is increasing manifold. Termed as pregnancy induced hypertension (PIH), it is associated with generalized edema and proteinuria which is known as preeclampsia. It is one of the major reasons of maternal mortality and morbidity in India. Early diagnosis, proper management plays a vital role as this disease causes considerable morbidity and mortality in both the mother and fetus. The objective of our review article is to elaborate on treatment protocols and limitation on Indian scenario and give recent insights on the criteria’s used for taking clinical decisions at different levels of pregnancy care for patients with PIH & preeclampsia. Our article also highlights the newer diagnostic procedures and treatment modalities for the management of the above conditions.

Key words: PIH, Hypertension, Preeclampsia, Risk factors

Introduction

Preeclampsia was formerly defined as a multisystemic disorder characterized by new onset of hypertension (i.e. systolic blood pressure (SBP) ≥ 140 mmHg and/or diastolic blood pressure (DBP) ≥ woman. Recently, the American College of Obstetricians and Gynecologists (2013) has stated that proteinuria is no longer required for the diagnosis of preeclampsia. Preeclampsia was formerly defined as a multisystemic disorder characterized by new onset of hypertension (i.e. systolic blood pressure (SBP) ≥ 140 mmHg and/or diastolic blood pressure (DBP) ≥ 90 mmHg) and proteinuria

Preclampsia occurs in 5-8% of pregnancies worldwide and is the second leading cause of direct maternal and fetal death. The prevalence of preeclampsia varies in different population and different ethnic groups ^[1].

In India the incidence of preeclampsia is reported to be 8 - 10% of the pregnancies ^[2].

Prevalence of hypertensive disorder in pregnancy in different study

STUDY	PREVALENCE OF HTN DISORDER
Bharti Menta et al (2011-2012) ^[3]	6.9%
Sachdeva et al (2011) ^[4]	15%
Nadkarni J et al (2001) ^[5]	7.49%
Mohan BS et al (2004) ^[6]	15.5%
Prakash J et al (2006) ^[7]	5.38%
Bangal VB et al (2011) ^[8]	8.96%

Manjusha Sajith et al ^[9] had shown that the prevalence of preeclampsia is 5.4% in the study population and the prevalence of eclampsia is found to be 0.6% of pregnancies. In the study by Sutapa et al it was shown that the prevalence of preeclampsia was lowest in Haryana (33.3%) and highest in Tripura (87.5%). This potential difference can be explained on the basis that there was a very high rate of

smoking and poor access to health care facilities in the rural areas as in Haryana. The other possible explanation of this difference is the climacteric difference and alteration in the vitamin D regulated calcium metabolism due to difference in sunlight exposure [10,11]

Maternal mortality has decreased significantly across India with an estimated maternal mortality ratio (MMR) of 174 per 100,000 livebirths [139–217] in 2015, and an annual rate of reduction of 4.6% between 2000 and 2015. The major causes of maternal death and morbidity globally are hemorrhage, the hypertensive disorders of pregnancy, and sepsis [13].

The factors responsible for the maternal mortality due to preeclampsia in India are

1 Lack of and/or poor prenatal care

- delay in early diagnosis
- progression to severe eclampsia
- delay in treatment

2 Lack of access to hospital care

- Lack of access to transportation to clinic
- Lack of transport from clinic to hospital
- Lack of transport from hospital to tertiary centre

3 Lack of well-trained staff and personnel

4 Lack of proper resources

- Medicines
- Equipment's
- Intensive care unit

The complications arise due to severe preeclampsia are the disseminated intravascular coagulation, renal failure, pulmonary oedema, intracranial haemorrhage.

In 2010 the maternal mortality from eclampsia ranges from 2.2% to 9% [15]

In developing countries, the factors responsible for conversion to eclampsia are

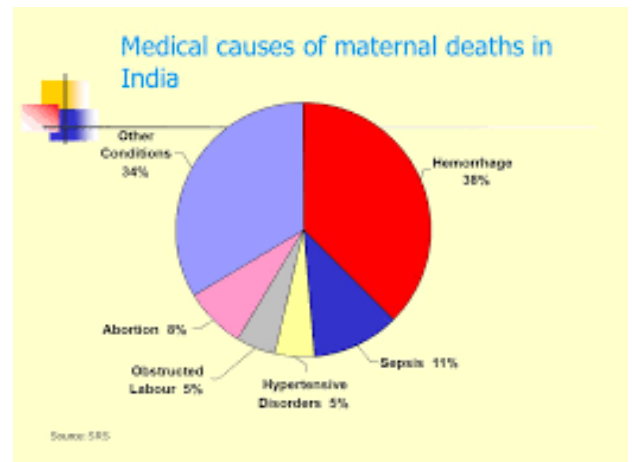
NULLIPARITY - In all the studies nulliparous women predominated (79%) followed by second gravid (12.3%)

AGE - About 93.9% of women were from the age groups up to 19 years but maximum number of women were in the age group of 20 - 25 years because of the fact that maximum number of women conceive in this age group

EDUCATIONAL STATUS- About majority of these eclamptic women are uneducated and hence illiteracy was the major risk factor for developing eclampsia.

ANTENATAL CARE - Majority of women in India do not receive antenatal care which is responsible for developing eclampsia

According to SRS 2010 - 2012 MMR of India is 178. Maternal Mortality ratio in India had shown an appreciable decline from 398/100000 live birth in the year 2001 - 2003 to 254/100000 live birth in the year 2004 - 2006 and 178 as per 2013. [16,17]



Ruchika Garg et al [18] had studied the role of low dose magnesium sulphate in 78 cases of eclampsia which is one of the leading causes of maternal mortality and it was found that eclamptic convulsions were controlled in 94.87% of the cases with the low dose regimen.

In the Indian public health system, primary health centres (PHC) serve as the first point of care. Each PHC is staffed by one doctor and three to five staff nurses, and each sub-centre is staffed by one auxiliary nurse midwife (ANM) [19,20]. ANMs provide health services including screening, management, and referral for pregnancy and new-born complications. Since 2005, the National Rural Health Mission (NRHM) has introduced innovative strategies to accelerate progress towards improving health outcomes. These strategies include mobilization efforts by frontline workers, namely the accredited social health activists (ASHA), and numerous initiatives to increase institutional deliveries [21].

Staff nurses, ANMs and ASHAs explained that to identify pre-eclampsia, blood pressure must be measured; this is the only method of identification as symptoms cannot be used reliably to diagnose. In addition to hypertension, ANMs claimed that dizziness, swelling, visual disturbances, sweating and restlessness, were danger signs associated with pre-eclampsia.

They had also been given the knowledge regarding the signs of eclampsia, such as jerky movements, shaking of hands and legs, frothing from the mouth and rolling of the eyes. Staff nurses and ANMs were suggested regarding the regular blood pressure measurements in pregnancy. If hypertension was detected they advised as follows: rest, decrease salt intake, iron supplementation, and tetanus vaccination and the regular follow up.

In addition to these recommendations, staff nurses claimed to provide antihypertensive medication and, in some cases, MgSO4. ASHAs also stressed the importance of medical adherence and the avoidance of home treatment to the preclamptic women

ANMs stated that they administered antihypertensive agents when indicated; by far the most common antihypertensive in use was nifedipine. It is important for skilled birth attendants to know about antihypertensive

drugs, their indications, contraindications, dosage and limitations for their use.

National guidelines authorize ANMs and nurses to administer MgSO₄ to women suffering from eclampsia; however, the majority of ANMs claimed not to have administered MgSO₄ themselves but they are quite familiar to the other anticonvulsive such as diazepam (calmpose), and phenobarbitone.

DISCUSSION:

It has also been found that the identification of the preeclampsia depends mainly on the frequency of the antenatal care visit^[22]. Due to the lack of the facilities of the antenatal care many patients of the preeclampsia are missed. In India there is marked difference between the urban and rural areas in accessing the antenatal care. There is only 62.4% of repeated antenatal visit of women in urban areas compared to only 27.7% in rural areas as a result of which many cases of preeclampsia are missed^[23].

The CLIP (Community level intervention for preeclampsia) trials^[24] conducted in India aims to reduce maternal and neonatal mortality and morbidity by the use of an evidence-based package of care for the community-level identification and emergency management of women at risk of developing eclampsia or pre-eclampsia.

The CLIP Pilot Trial in India was officially launched on 8 February 2014 and was successfully completed in October 2014, with an overall acceptance rate for referral of 85% with a combined urgent (<4 hr) and non-urgent (<24 hr) referrals and the primary indication for referrals has been severe hypertension^[25].

Jariwal^[26] had designed a prevention protocol with new concept to describe the etiology and cause of preeclampsia in which 800 cases who have developed preeclampsia during any phase of pregnancy were selected and aim is to reduce the severity of disease process by early prediction and treatment. The results of the study had shown that Jariwala's therapy is effective in mild to moderate cases of preeclampsia.

To this end, the Indian central government and other state governments should:

- Require that all healthcare providers, public and private, "notify" (formally report) all pregnancy-related deaths.
- Institutionalize under the NRHM a system of maternal deaths investigations. Investigations should identify systemic shortcomings and findings should be integrated into the planning and development of district and state-level plans.
- Revise the JSY monitoring indicators through a participatory and transparent process, ensuring that they track adverse pregnancy outcomes
- Strengthening the antenatal care facilities so that it can help in early detection of cases of preeclampsia

CONCLUSION:

Thus, it was concluded that preeclampsia is one of the major threats in the maternal morbidity and mortality globally.

Despite of the proper knowledge of the pathophysiology and etiology of the preeclampsia its management remains the challenge. One of the greatest change persuading preeclampsia scenarios is an early identification of it by strengthening the antenatal care facilities. This approach had increased the chances to diagnose the case which are often missed and also to save the lives of both the fetus and the mother

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Video Presentation

MODIFICATION OF MID-URETHRAL SLING PROCEDURE - “SLING ON STRING” WITHOUT USING COMMERCIALY AVAILABLE TRANS-OBTURATOR TAPE

Mriganka Mouli Saha¹, Abhijit Halder¹, Nayan Chandra Sarkar¹, Abhijit Mondal², Mainak Nath¹

ABSTRACT

Mid urethral sling operation is the most effective surgical procedure for the stress urinary incontinence. Unfortunately, cost is a major drawback for the commercially available slings. Most of the government hospitals in India doesn't provide commercially available sling but polypropylene mesh is widely available for the hernia surgery. If we cut a longitudinal strip of 1.5 cm breadth from the Polypropylene macroporous (>40 micron) mesh 6' X 3' mesh and apply over the mid urethra then the cost can reduce where the resource is limited. The rest part of the mesh for future use can be preserved aseptically. So, from a single mesh of 6' X 3' size we can serve up to five patients.

Key Words: Mid-urethra, sling, stress urinary incontinence

Description of technique:

Materials required < Polypropylene macroporous (>40 micron) mesh 6' X 3', Modified TOT (outside –in) needle (made at Dept of Obstetrics and Gynaecology, College of Medicine & J.N.M. Hospital), 1-0 Polypropylene suture < dissect mid-urethral region 1 cm < stab incision at the junction a line from clitoris touches labio-crural fold and 1.5 cm below the insertion of adductor longus < Remove the mesh from the packet and make a 1 cm longitudinal strip from the mesh< attach 1-0 Polypropylene suture thread on both side of the mesh end to make the cumulative length more as only 6' (15 cm mesh length with not pass through from one side to other side)< Insert modified TOT (outside –in) needle through stab incision side in right side from outside-in < when tip seen at suburethral region attach Polypropylene suture thread to needle tip < remove needle in reverse direction in the

same track of entry< the Polypropylene suture will comes out through the stab entry and hold the suture with an artery forceps < Insert modified TOT (outside –in) needle through stab incision side in opposite side (left) and similar way when tip seen at suburethral region attach Polypropylene suture thread of the opposite side to needle tip < remove needle in reverse direction in the same track of entry < similarly the Polypropylene suture will comes out through the stab entry of left side and hold the suture with an artery forceps < pull the Polypropylene string on both side simultaneously keeping an artery forceps in between urethra and Polypropylene mesh < cut the excess suture on both side a few mm below the skin level < close sub-urethral incision with 2-0 polyglactin suture or 2-0 polyglecaprone suture (Monocryl). In our institution we have closed the suburethral incision with 2-0 polyglactin suture as it was hospital supply.

Fig: Polypropylene macroporous (pore size more than 40 micron) mesh 6' X 3' and cutting of a mesh strip



Fig: Dissection of mid-urethral zone and insertion of modified needle through the stab incision



Fig: Demonstration of Modified needle and attaching polypropylene suture with the mesh end

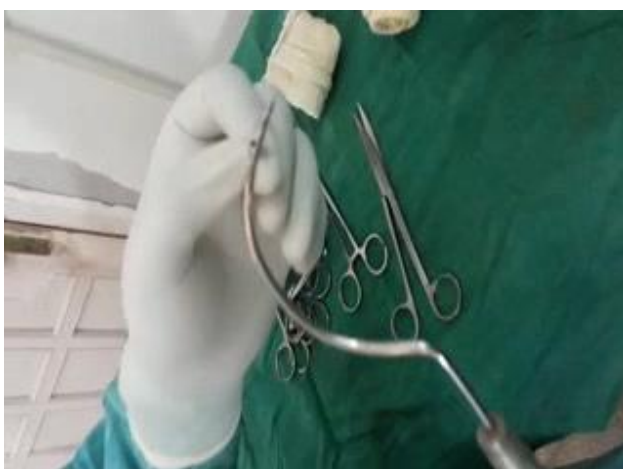


Fig: Removal of modified needle through the stab incision opposite side & placement of sling



Result:

The study included 71 women who met the inclusion criteria and signed informed consent. No significant intergroup differences noted in term of menopausal status, mean age, parity, mean BMI, utero-vaginal prolapsed, positive stress test, abdominal leak point pressure, Impact Incontinence Quality of life (IIQ-7) Score, Incontinence Severity Index (ISI) Category. No patients presented with detrusor over activity. The follow-up was at one, three and six month and thereafter at first and second year for both groups. Table 1, shows intra-operative and immediate post-operative data, which revealed significantly longer mean operative time for 'Sling on String' group i.e. 33.3 ± 10.9 minutes than the TOT group i.e. 19 ± 5.5 minutes. However the cost per patient was approximately INR 6000 for the TOT-O group availing the best price in the market, where as it was only INR 500 for the Sling on string group. As though the polypropelene maroporous mesh (supplied in hospitals for hernia operation) was available in free of cost in hospitals but the market price of 6' X 3' (15 cm X 7.5 cm) mesh is approximately INR 60013 which can be used for 5 patients as a 1.5 cm breadth longitudinal strip (Sling). Along with that one No 1 polyglactin suture (String) which costs about INR 150-20014 and another 2-0 polyglactin suture costing about INR 200-250 15 are also required for the closure of the sub-urethral incision. Two cases in 'Sling on String' group suffered from perineal pain (5.5%) in the immediate post-operative period. Single patient suffered from urinary retention in both groups who relieved by intermittent self-catheterization. During follow-up up to two years all patients were negative for stress test in both groups. In each group patient significantly improved on IIQ-7 questionnaire and Incontinence Severity Index (ISI). More than 80 % patients were dry as per ISI at three month follow up in both groups. During final follow up at 24 months more than 95% patients were dry ISI. There were no significant intergroup differences noted in clinical examination (stress test), questionnaires (IIQ-7 and ISI) in both groups during follow up.

Table 1: Baseline Pre-operative data in study groups

Parameters		'Sling on String' group (n=36)	'TOT-O' group (n=35)	P value
Post-menopausal		19 (52.7%)	17 (48.6%)	0.168
Mean age (years)		58.8 ± 6.1	60.6 ± 11.0	0.196
Parity (Vaginal)		4.0 ± 1.9	4.4 ± 2.7	0.642
Mean BMI (kg/m ²)		22.5 ± 3.1	22.8 ± 2.1	0.818
Prolapse (POP-Q –I)		14 (38.9%)	15 (42.8%)	0.952
Positive stress test		36 (100%)	35 (100%)	0.515
Abdominal Leak Point Pressure (ALPP) (cm H ₂ O)		45.2 ± 11.3	44.6 ± 14.7	0.147
Impact Incontinence Quality of life (IIQ-7) Score		23.6 ± 4.4	22.5 ± 5.2	0.582
Incontinence Severity Index (ISI) Category	Dry	0	0	0.667
	Slight	0	0	
	Moderate	20 (55.56%)	18 (51.4%)	
	Severe	16 (44.44%)	17 (48.6%)	

Table 2: Comparison of Peri-operative (intra – operative and immediate post-operative) parameters

Parameters	'Sling on String' group (n=36)	'TOT-O' group (n=35)	P value
Mean operative time (Min)	33.3 ± 10.9	19 ± 5.5	0.001
Intra operative bladder injury	0	0	-
Length of hospital stay	4.2 ± 1.2	4.6 ± 1.0	0.671
Urinary Retention	1 (2.78%)	1 (2.85%)	-
Perineal Pain	2 (5.5%)	0	
Procedure related cost (INR)	500	6000	< 0.0001

Table 3: Comparison of Post-operative parameters at follow up

		'Sling on String' group (n=36)	'TOT-O' group (n=35)
Positive Stress Test	Pre -OP	100%	100%
	1 Month	0% (<.001)	0% (<.001)
	3 Month	0% (<.001)	0% (<.001)
	6 Month	0% (<.001)	0% (<.001)
	1 st Year	0% (<.001)	0% (<.001)
	2 nd Year	0% (<.001)	0% (<.001)
Mean IIQ-7 Score	Pre -OP	23.6 ± 4.4	22.5 ± 5.2
	1 Month	0.71 ± 2.5 (<.001)	0.78 ± 2.7 (<.001)
	3 Month	0.35 ± 1.2 (<.001)	0.42 ± 1.1 (<.001)
	6 Month	0.18 ± 1.4 (<.001)	0.19 ± 1.2 (<.001)
	1 st Year	0.08 ± 0.9 (<.001)	0.11 ± 0.9 (<.001)

	2 nd Year	0.06 ± 0.92 (<.001)	0.05 ± 0.93 (<.001)
Dry ISI	Pre -OP	0 %	0 %
	1 Month	83.3 % (<.001)	82.6 % (<.001)
	3 Month	92.3 % (<.001)	90.6 % (<.001)
	6 Month	94.6 % (<.001)	93.9 % (<.001)
	1 st Year	91.8 % (<.001)	94.7 % (<.001)
	2 nd Year	95.4 % (<.001)	95.8 % (<.001)

* Data in parenthesis denotes *p*-values comparing pre-op and post-op parameters in same study group.

Video available trans-obturator tape journal online version. (www.iaog.in).

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ACKNOWLEDGMENTS

Contribution of colleague(s), institution(s), financial and other helps, if any, are to be acknowledged.

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3. Menefee SA, Wall LL. Incontinence, prolapse, and disorders of the pelvic floor. In: Berek JS (eds) *Novak's Gynecology*, 13th edn. Philadelphia: Lippincott Williams & Wilkins, 2002; p 645-710.

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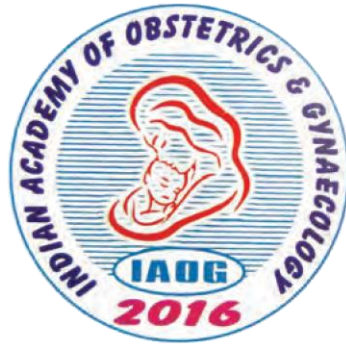
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