

**Email:** [**jiaog2017@gmail.com**](mailto:jiaog2017@gmail.com) **Website:** [**www.iaog.in**](http://www.iaog.in/)



## Official Journal *of*

**Indian Academy of Obstetrics *&* Gynaecology**

**JIAOG**

**Vol. 2 | Issue 1**

**July 2020**

**Journal *of***

**Indian Academy of Obstetrics *and* Gynaecology**

|  |
| --- |
| **Email: jiaog2017@gmail.com Website:** [**www.iaog.in**](http://www.iaog.in/) |

**Journal of Indian Academy of Obstetrics and Gynaecology**

**Vol. 2 | Issue 1 | July 2020**

**Official Journal *of***

**Indian Academy of Obstetrics *&* Gynaecology**



**Indian Academy of Obstetrics *&* Gynaecology**A – 9/7, Kalyani, Nadia, West Bengal 741235 India  
Email: [jiaog2017@gmail.com](mailto:jiaog2017@gmail.com)  
website: [www.iaog.in](http://www.iaog.in/)

Printed, Published and Owned by Dilip Kumar Dutta on behalf of Indian Academy of Obstetrics & Gynaecology and printed at Bishnupriya Printers, Market # 2, Shop # 70, Kalyani, Nadia, West Bengal and published at A-9/7, Kalyani, Nadia, West Bengal. Editor Dilip Kumar Dutta.

Indian Academy of Obstetrics & Gynaecology

A – 9/7, Kalyani, Nadia

West Bengal, India

PIN – 741235

Email: jiaog2017@gmail.com

website: www.iaog.in

*© All rights reserved.*

No part of this publication can be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic or mechanical, without written permission from the publisher.

*Disclaimer:*

The opinions and information expressed in this Journal reflect the views of the authors and not of the Journal or its Editorial board or the Publisher. Publication does not constitute endorsement by the Journal. Journal of Indian Academy of Obstetrics and Gynaecology is not responsible for the authenticity or reliability of any product, gadget, equipment or any claim by the medical establishments/manufacturers/ institutions or any training programme in the form of advertisements appearing in Journal of Indian Academy of Obstetrics and Gynaecology and also does not endorse or give any guarantee to such products or training programme or promote any such thing or claims made so after.

*Printed at:*

Bishnupriya Printers

Market # 2, Shop # 70

Kalyani, Nadia, West Bengal

bishnupriyaprinters@gmail.com

**JOURNAL OF INDIAN  
ACADEMY OF  
OBSTETRICS AND GYNAECOLOGY**

***Official journal of Indian Academy of Obstetrics & Gynaecology***

|  |
| --- |
| **Chief Editor** |
| **Dilip Kumar Dutta**  **Director, Gynaecological Institute of Clinical Excellance**  **Kalyani, Nadia, West Bengal**  **Email: drdilipdutta@yahoo.com** |
| **Executive Editor** |
| **Manidip Pal**  **Professor, Obs & Gyn, College of Medicine & JNM Hospital, WBUHS, Kalyani, WB**  **Email: manideep2b@yahoo.com** |

|  |
| --- |
| **Associate Editors** |
| **M K Saha**  **Professor, Obs & Gyn, Andaman Nicober Islands Institute of Medical Sciences, Port Blair**  **Email: mksaha@rediffmail.com** |
| **Soma Bandyopadhyay**  **Professor, Obs & Gyn**  **Katihar Medical College, Katihar, Bihar**  **Email: somapb@gmail.com** |
| **N Nabakishore Singh**  **Professor, Obs & Gyn, Regional Institute of Medical Sciences, Imphal, Manipur**  **Email: drnaba\_naorem@yahoo.co.in** |
| **Bharti Maheshwari**  **Senior Consultant Gynaecologist, Meerut, UP**  **Email:**  **bhartinalok123@gmail.com** |
| **Assistant Editor** |
| **Saubhagya Kumar Jena**  **Professor, Obs & Gyn, AIIMS, Bhubaneswar**  **Email: drsaubhagya@gmail.com** |
| **Indranil Dutta**  **Associate Professor, Obs & Gyn, IQ City Medical College, Durgapur, WB**  **Email: drindranildutta@gmail.com** |
| **Tripti Sinha**  **Associate Professor, Obs & Gyn, Nalanda Medical College and IGIMS, Patna, Bihar**  Email: **triptisinha0304@gmail.com** |
| **Lavanya Kumari Sarella**  **Professor, Obs & Gyn, Rangaraya Medical College, Kakinada, Andhrapradesh**  **Email: lavanyakumarisarella@yahoo.com** |

|  |
| --- |
| **Plagiarism Checking Committee** |
| **Shakuntala Chhabra**  **Emeritus Professor, Obs & Gyn, Mahatma Gandhi Institute of Medical Sciences, Wardha**  **Email: chhabra\_s@rediffmail.com** |
| **Gokul Chandra Das**  **Professor, Obs & Gyn, Tomo Riba Institute of Health & Medical Sciences, Naharlagun, Arunachal Pradesh**  **Email: gokulchandradas@rediffmail.com** |
| **Banasree Bhadra**  **Professor, Obs & Gyn, College of Medicine & JNM Hospital, WBUHS, Kalyani**  **Email: banasree22@yahoo.com** |
| **Mriganka Mouli Saha**  **Assistant Professor, Obs & Gyn, College of Medicine & JNM Hospital, WBUHS, Kalyani**  **Email: itsmemriganka@yahoo.com** |
| **Epidemiologist cum Statistician** |
| **Ritesh Singh**  **Associate Professor, Community Medicine**  **AIIMS, Kalyani**  **Email**: **drriteshsingh@yahoo.com** |

**Advisory Board**

|  |
| --- |
| **International** |
| **Christopher B Lynch, Emeritus Professor, Milton Keynes University Hospital (NHS Trust), UK**  **Email: christopherbl@aol.com** |
| **Paul Riss**  **Professor, Urogynaecology, Medical University of Viena, Austria**  **Email: paul.riss@gmail.com** |
| **Sayeba Akhter (Bangladesh), Ex Professor & Head, Obs & Gyn, Dhaka Medical College and Hospital, Dhaka, Bangladesh**  **Email: sayeba.akhter@gmail.com** |
| **Ashma Rana, Professor, Obs & Gyn, TU Teaching Hospital, Kathmandu, Nepal**  **Email: ashmarana2011@gmail.com** |
| **National** |
| **S N Basu**  **Sr Consultant, Obs & Gyn, Max Healthcare, New Delhi**  **Email: sn.basu@maxhealthcare.com** |
| **Ch Manglem Singh**  **Professor, Obs & Gyn, Jawaharlal Nehru Institute of Medical Sciences, Imphal, Manipur**  **Email: drcmsingh@hotmail.com** |
| **Arup Kumar Majhi**  **Professor, Obs & Gyn**  **R G Kar Medical College, Kolkata**  **Email: drarupkmajhi@yahoo.com** |
| **Tapan Kumar Bhattacharyya**  **Principal, Shri Ramkrishna Institute of Medical Sciences and Sanaka Hospital, Durgapur, WB**  **Email: tapan.bhattacharyya@gmail.com** |

**Editorial office**

A – 9/7, Kalyani, Nadia, West Bengal, India, PIN - 741235   
E-mail – [jiaog2017@gmail.com,](mailto:jiaog2017@gmail.com) Website: [www.iaog.in](http://www.iaog.in/)

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

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

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

**Contents**

#### **Editorial**:

Taking care of mother’s kidney

*Rajendra Pandey*

........................................................................................1

***Original Article*:**

Reduction in wastage of blood product: an interventional study in a teaching hospital of West Bengal

*Abhijit Halder, Mainak Nath, Abhijit Mondal, Manidip Pal*

##### ................................................................................................3

Modified prophylactic magnesium sulphate therapy in severe pre-eclampsia - A Randomised control study

*Anurag Mallick*

##### ................................................................................................7

Acceptance of IUCD in the Industrial area of Kalyani, Nadia, West Bengal

*Dilip Kumar Dutta, Ranita Roy Chowdhury*

##### ................................................................................................13

Prevalence of Anaemia In Antenatal Patients in A Tertiary Care Hospital

*Banasree Bhadra, Dhrubajyoti Sarkar, Mohsina Ahmed*

##### ................................................................................................16

Clinical outcome in emergency peripartum hysterectomy at a tertiary care centre

*Ramaraju H.E., Prakrutha S*

##### ................................................................................................20

***Review Article:***

Pregnancy Induced Hypertension - in context of Afghanistan

*Malalai Jamshid Nejaby*

##### ................................................................................................24

Pre-eclampsia scenario in India

*Ruchika Garg, Vishy Agarwal*................................................................................................29

***Video Presentation:***

Modification of mid-urethral sling procedure - “Sling on string” without using commercially available trans-obturator tape

*Mriganka Mouli Saha, Abhijit Halder, Nayan Chandra Sarkar, Abhijit Mondal, Mainak Nath*

##### ................................................................................................33

***Author’s Guidelines***

........................................................................................38

***Subscription Form***

........................................................................................41

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

**Guest Editorial**

**TAKING CARE OF MOTHER’S KIDNEY**

### Rajendra Pandey

### Hon’ble Vice-Chancellor, The West Bengal University of Health Sciences

### DD-36, Sector 1, Salt Lake City, Kolkata -700064

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 judicial 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.

*Received:* 1 June 2020

*Accepted:* 1 June 2020

*Published online:* 1 July 2020

*Citation:* Pandey R. Taking care of mother’s Kidney. J Indian Acad Obstet Gynecol 2020; 2(1): 1-2

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

**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 discomforting 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](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR1)]. 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](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR2),[3](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR3),[4](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR4)]

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](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR5)]. 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](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR6),[7](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR7)].

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**

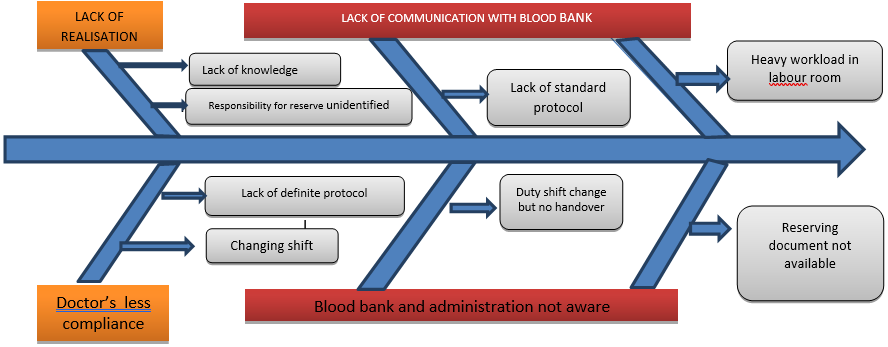
Blood and blood components availability in hospital blood bank, determines the capacity of the hospital to combat any Obstetrics as well as surgical emergency situation of acute haemorrhage.

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)**

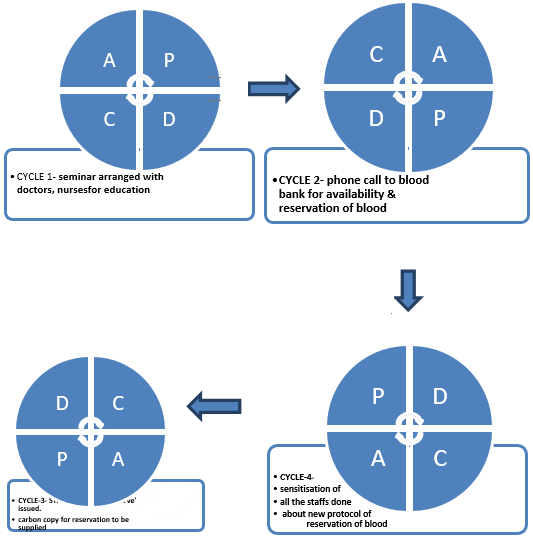


The problem was identified as follows:

1. Procedure: No definite protocol for reservation of Blood present at our hospital.
2. Place: In labour room and in Gynae emergency, most of the blood requisition was advised by treating doctors.
3. 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)**

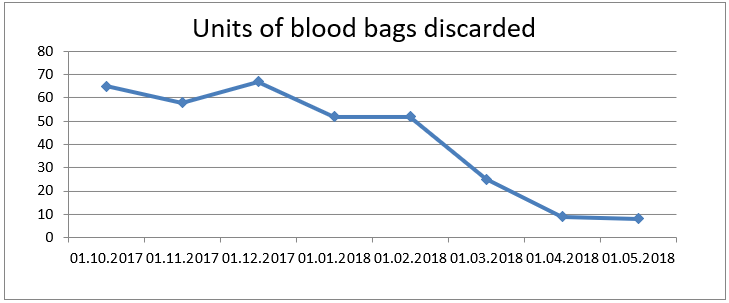
1. **First change**: - Seminar arranged involving our doctors and the nurses of O &G department to properly asses the necessity of blood for the index patient and then do the requisition if only it is very necessary (last week of October). It was ensured to them in acute emergency the blood will be available if wastage decreases.
2. **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.
3. **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.
4. **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 dramatically 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, outdating 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 outdating of components in blood bank is accepted[[8](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR8)]. 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](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR9),[10](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR10),[11](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR11)]. Globally only 106 countries have national guidelines on the appropriate clinical use of blood and blood products[[12](https://link.springer.com/article/10.1186/s13104-016-2112-5#CR12)].

**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.

**Acknowledgement**: We are very much thankful to Dr Smita Chakraborty, Blood Bank Medical Officer, COMJNMH, Kalyani, for her co-operation to implement the project.

**References**

1. World Health Organization. Availability, safety and quality of blood products. Report by the Secretariat. Sixty-third world health assembly A63/20 Provisional agenda item 11.17 25 March; 2010.

2. Bugge HF, Karlsen NC, Oydna E, Rake MM, Wexels N, Bendabenda J, et al. A study of blood transfusion services at a district hospital in Malawi. Vox Sang. 2013; 104:37–45.

3. Schneider WH. History of blood transfusion in sub-Saharan Africa. Transfus Med Rev. 2013; 27:21–8.

4. Mafirakureva N, Khoza S, Hassall O, Faragher BR, Kajja I, Mvere DA, et al. Profiles of blood and blood component transfusion recipients in Zimbabwe. Blood Transfus. 2015;13(4):600–9. doi: 10.2450/2015.0019-15.

5. British Committee for Standards in Haematology. Guideline on the administration of blood components, 2009. http://www.bcshguidelines.com/documents/Admin\_blood\_components\_bcsh\_05012010.pdf [SD-008].

6. UK blood transfusion services. Transfusion procedures. In: Handbook of transfusion medicine. 4th ed. Norwich: The Stationery Office; 2009. http://www.transfusionguidelines.org.uk/Index.aspx?Publication=HTM&Section=9&pageid=1114.

7. Susan Brunskill, Thomas S, Whitmore E, McDonald CP, Doree C, Hopewell S, Staves J, Cardigan R, Murphy MF. What is the maximum time that a unit of red blood cells can be safely left out of controlled temperature storage. Transfus Med Rev. 2012;26(3):209–23.

8. Clarke JA. Blood and component wastage report: Aquality assurance function of the hospital transfusion committee. Transfusion. 1989;29(2):139-142.

9. Stanger SH, Yates N, Wilding R, Cotton S. Blood inventory management: hospital best practice. Transfus Med Rev. 2012;26(2):153–63.

10. Baesler F, Nemeth M, Martinez C, Bastias A. Analysis of inventory strategies for blood components in a regional blood center using process simulation. Transfusion. 2014; 54:323–30.

11. Heddle NM, Liu Y, Barty R, Webert KE, Whittaker S, Gagliardi K, et al. Factors affecting the frequency of red blood cell outdates: an approach to establish benchmarking targets. Transfusion. 2009;49(2):219–26.

12. Zoric L, Daurat G, Demattei C, Martine M, Christophe B, Olivieet B, et al. Blood wastage reduction: a 10-year observational evaluation in a large teaching institution in France. Eur J Anaesthesiol. 2013; 30:250–5.

13. WHO 2011. Waste of healthcare activities. http://www.who.int/mediacentre/factsheets/fs253/en/. Accessed on 15 Mar 2018.

*Received:* 5 November 2019

*Accepted:* 11th January 2020

*Published online:* 1st July 2020

*Citation:* Halder A, Nath M, Mondal A, Pal M.Reduction in wastage of blood product: an interventional study in a teaching hospital of West Bengal. J Indian Acad Obstet Gynecol 2020;2(1): 3-6

|  |
| --- |
| 1. Dept of Obstetrics & Gynaecology, College of Medicine & JNM Hospital, WBUHS, Kalyani, WB  2. Dept of Obstetrics & Gynaecology, Tata Central Hospital, Jamadoba, Jharia, Jharkhand   Email: maink.nath.nbmc.mn@gmail.com |

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

**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.

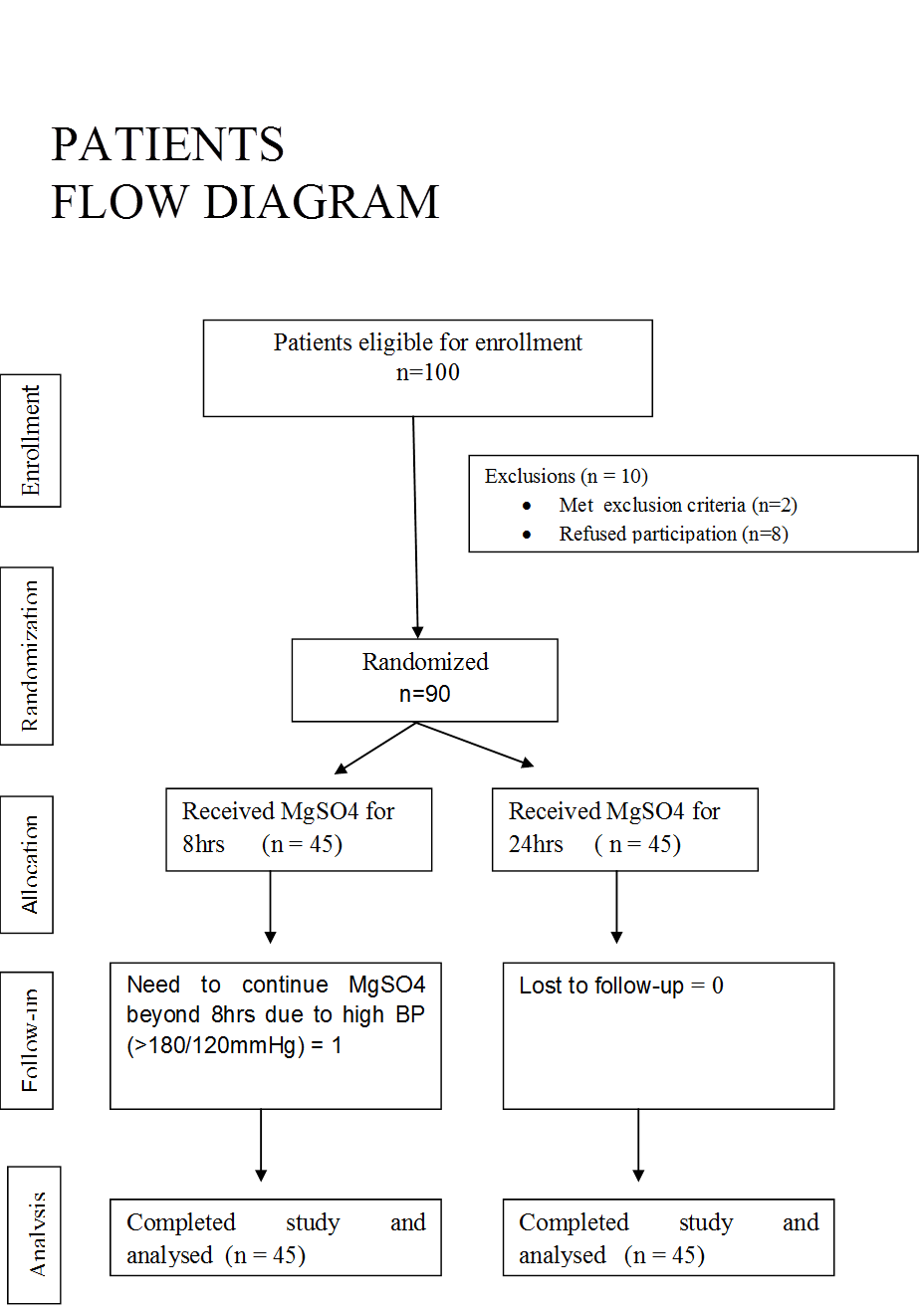
(1 = very satisﬁed, 2 = satisﬁed, 3 = not very satisﬁed, 4 = dissatisﬁed, and 5 = very dissatisﬁed)

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

**

**

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).



**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 8hours and 45 were randomized to receive magnesium sulphate for 24hours. Among the women randomized to receive MgSO4 for 8hours, one woman had to continue MgSO4 beyond 8hours 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 24hours.

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 24hours. The duration of anti-convulsant therapy was significantly shorter among the women receiving Magnesium sulphate for 8hoursresulting 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 8hours. 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 6hours 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 (%)]  PRIMIPARA  MULTIPARA | 33 (73.3)  12 (26.7) | 39 (86.7)  6 (13.3) | 0.1183 |
| GESTATIONAL AGE AT  DELIVERY [Mean (SD)] | 35.85 (0.89) | 35.79 (0.94) | 0.7487 |
| Types of Hypertension[n(%)]  Chronic HTN  Gestational HTN  Pre-Eclampsia | 1 (2.2)  2 (4.4)  42(93.3) | 1 (2.2)  1 (2.2)  43(95.6) | 0.8415 |
| MODE OF DELIVERY [n(%)]  C-Section  Instrumental  Normal | 36 (80)  2 (4.4)  7 (15.6) | 33 (73.3)  3 (6.7)  9 (20) | 0.7481 |
| 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, 8hours 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 8hours 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% to1.8%) 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 clearence was obtained.

**Acknowledgements**: Dr. Shyamal Dasgupta, Associate Professor, R.G.Kar Medical College, Kolkata.

**References**

1. Wagner LK. Diagnosis and management of preeclampsia. *Am Fam Physician* 2004; 70(12):2317–24.

2. WHO Library Cataloguing-in-Publication Data. WHO recommendations for Prevention and treatment of pre-eclampsia and eclampsia. WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland. [http://whqlibdoc.who.int/publications/2011/ 9789241548335\_eng.pdf](http://whqlibdoc.who.int/publications/2011/%209789241548335_eng.pdf). Published 2011

3. Steegers EA, von Dadelszen P, Duvekot JJ, Pijnenborg R. Pre-eclampsia. *Lancet* 2010; 376(9741): 631–44.

4. Duley L. The global impact of pre-eclampsia and eclampsia.*SeminPerinatol* 2009; 33(3):130–7.

5. Sibai BM. Diagnosis, prevention, and management of eclampsia. *ObstetGynecol* 2005; 105(2):402–10.

6. Kullima AA, Kawuwa MB, Audu BM, Usman H, Geidam AD. A 5-year review of maternal mortality associated with eclampsia in a tertiary institution in northern Nigeria. *Ann Afr Med* 2009; 8(2):81-4.

7. Magpie Trial Follow-Up Study Collaborative Group. The Magpie Trial: a randomized trial comparing magnesium sulphate with placebo for pre-eclampsia. Outcome for women at 2 years. *BJOG* 2007; 114(3):300–9.

8. Khan KS,Wojdyla D, Say L, Gülmezoglu AM, Van Look PF.WHO analysis of causes of maternal death: a systematic review. *Lancet* 2006; 367(9516):1066–74.

9. Amorim MMR, Katz L, Ávila MB, Araújo DE, Valença M, Albuquerque CJM, et al. Admission profile in an obstetric intensive care unit in a maternity hospital of Brazil.*Rev Bras SaúdeMatern Infant* 2006;6(1):S55–62.

10. Altman D, Carroli G, Duley B, Farrell B, Moodley J, Neilson J, et al. Do women with pre-eclampsia, and their babies, beneﬁt from magnesium sulphate? The Magpie Trial: a randomised, placebo-controlled trial. *Lancet* 2002;359(9321):1877–90.

11. Duley L, Gülmezoglu AM, Henderson-Smart DJ, Chou D. Magnesium sulphate and other anticonvulsants for women with pre-eclampsia. *Cochrane Database Syst Rev* 2010; 11:CD000025.

12. Noronha Neto C, de Souza ASR, Amorim MMR. Pre-eclampsia treatment according to scientific evidence. *Rev Bras GinecolObstet* 2010; 32(10):459–68.

13. ACOG Committee on Practice Bulletins–Obstetrics. ACOG practice bulletin. Diagnosis and management of preeclampsia and eclampsia. Number 33, January 2002. *Obstet Gynecol* 2002; 99 (1) :159–67.

14. Sibai BM. Magnesium sulfate prophylaxis in preeclampsia: Lessons learned from recent trials. *Am J ObstetGynecol* 2004; 190(6):1520–6.

15. World Health Organization.Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors. http://whqlibdoc.who.int/publications/2007/9241545879\_eng.pdf.Published 2003.Accessed February 4, 2012.

16. Isler CM, Barrilleaux PS, Rinehart BK, Magann EF, Martin Jr JN. Postpartum seizure prophylaxis: using maternal clinical parameters to guide therapy. *ObstetGynecol* 2003; 101(1):66–9.

17. Ascarelli MH, Johnson V, May WL, Martin RW, MartinJr JN. Individually determined postpartum magnesium sulfate therapy with clinical parameters to safely and cost-effectively shorten treatment for pre-eclampsia. *Am J ObstetGynecol* 1998; 179(4):952–6.

18. Duley L, Matar HE, Almerie MQ, Hall DR. Alternative magnesium sulphate regimens for women with pre-eclampsia and eclampsia. *Cochrane Database Syst Rev* 2010; 4: CD007388.

19. Conde-Agudelo A, Belizan JM, Diaz-Rossello J. Kangaroo mother care to reduce morbidity and mortality in low birthweight infants. *Cochrane Database Syst Rev* 2011;3: CD002771.

|  |  |
| --- | --- |
| 40, ARABINDA NAGAR, KOLKATA – 700104  EMAIL ID – mallickanurag47@gmail.com |  |

20. Ehrenberg HM, Mercer BM. Abbreviated postpartum magnesium sulfate therapy for women with mild preeclampsia: a randomized controlled trial. *ObstetGynecol* 2006; 108(4):833–8.  
21. Darngawn L, Jose R, Regi A, Bansal R, Jeyaseelan L. A shortened postpartum magnesium sulfate prophylaxis regime in pre-eclamptic women at low risk of eclampsia. *Int J GynecolObstet* 2012; 116(3):237–9.  
21. Darngawn L, Jose R, Regi A, Bansal R, Jeyaseelan L. A shortened postpartum magnesium sulfate prophylaxis regime in pre-eclamptic women at low risk of eclampsia. *Int J GynecolObstet* 2012; 116(3):237–9.

22. Maki DG, Tambyah PA. Engineering out the risk for infection with urinary catheters.*Emerg Infect Dis* 2001;7(2):342–7.

23. Bates SM, Greer IA, Pabinger I, Sofaer S, Hirsh J, American College of Chest Physicians. Venous thromboembolism, thrombophilia, antithrombotic therapy, and pregnancy: *American College of Chest Physicians Evidence-Based Clinical Practice Guidelines* (8th Edition). Chest 2008; 133 (6 Suppl.): 844S–86S.

24. Bhargava A, Pant R, Nimmi C, Singh SK. In search of accelerated recovery from eclampsia. *J ObstetGynecol India* 2006;56(5):402–5.

25.Maia SB, Katz L, Noronha NC, Caiado BVR, Azevedoana PRL, Amorim MR, et al. *Int J Gynecol and Obstet* 2014; 126:260-264

ABBREVIATIONS:

MgSO4 - Magnesium Sulphate

HRS - Hours

HTN - Hypertension

C- section - Caesarean Section

LDH - Lactate Dehydrogenase

AST - Aspartate Transaminase

*Received:* 26th September 2019

*Accepted:* 10th January 2020

*Published online:* 1st July 2020

*Citation:* Mallick A. Modified prophylactic magnesium sulphate therapy in severe pre-eclampsia - a randomised control study. J Indian Acad Obstet Gynecol 2020; 2(1): 7-12

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

**Original Article**

**Acceptance of IUCD in the Industrial area of Kalyani, Nadia, West Bengal**

### Dilip Kumar Dutta 1, Ranita Roy Chowdhury 2

###### 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 4children 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 earnng 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 sterilsation 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.

**References:**

1. Kent MM, Larson A. Family size preferences: evidences from World Fertility surveys. Washington, D.C. population references bureau, April, 1982 (Reports on world fertility survey):44
2. Sathar Zeba A., Chidambaram. V.C. Differentials in contraceptive use Voorburg, Netherlands: International Statistical Institute, Sept. 1984. (World Fertility Survey Comparative studies cross national summaries no. 36) :106
3. United nations Department of International economic and social affairs population division. Recent level and trends of contraceptive use as assessed in 1983, New York, UN:1984:119
4. Way AA and Wardlaw T. Changing patterns in use of family planning: evidence from worldwide program of contraceptive prevalence surveys. In. American statistical Association. Proceedings of social statistics section, Washington, D.C. American statistical Association, 1981:482-487

*Received: 01.11.2019*

*Accepted: 02.02.2020*

*Published online: 01.07.2020*

*Citation:* Dutta DK, Roy Chowdhury R. Acceptance of IUCD in the Industrial area of Kalyani, Nadia, West Bengal. J Indian Acad Obstet Gynecol 2020;2(1): 13-15

1. Senior Gynecologist, Kalyani

2.Dept of Obs. & Gyn, College of Medicine & JNM Hospital, Kalyani, Nadia

Email: drdilipdutta@yahoo.com

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

**Original Article**

**Prevalence Of Anaemia In Antenatal Patients In A Tertiary Care Hospital**

### Banasree Bhadra 1, Dhrubajyoti Sarkar 1, Mohsina Ahmed 3

###### 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 Anlaakuu 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 informtion 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 hygeine (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.

**Reference**

1. World Health Organization (WHO) The prevalence of Anaemia in women: a tabulation of available information. Geneva, Switzerland: WHO; 1992. WHO/MCH/MSM/92.2.
2. CDC. WFP. A manual: measuring and interpreting malnutrition and mortality. Atlanta: Center for Disease Control and Prevention and World Food Programme; 2005
3. NFHS-3. National Nutrition Monitoring Bureau Survey (NNMBS); 2006.
4. Reveiz L, Gyte GMI, Cuervo LG. Treatments for iron- deficiency anemia in pregnancy. The Cochrane Database of Systematic reviews 2007(2).
5. van den Broek NR, Rogerson SJ, Mhango CG et al. Anaemia in pregnancy in southern Malawi: prevalence and risk factors. BJOG. 2000; 107:437–438.
6. Adinma JIB, Ikechebelu JI, Onyejimbe UN, Amilo G, Adinma E. Influence of antenatal care on the haematocrit value of pregnant Nigerian Igbo women. Trop J Obstet Gynaecol. 2002; 19:68–70.
7. Tolentino K, Friedman JF. An Update on Anemia in less developed countries. Am J Trop Med Hygiene 2007;77(1): 44-51.
8. Gedefaw L, Ayele A, Asres Y, Mossie A. Anemia and Associated Factors Among Pregnant Women Attending Antenatal Care Clinic in Wolayita Sodo Town, Southern Ethiopia. Ethiop J Health Sci. 2015 Apr; 25(2): 155–162.
9. Anlaakuu P, Anto F. Anaemia in pregnancy and associated factors: a cross sectional study of antenatal attendants at the Sunyani Municipal Hospital, Ghana. BMC Res Notes 2017; 10: 402.
10. Mandve P, Nawale K, Motghare MV, Pajai S. Study of anemia in antenatal care patients: a retrospective study. J South Asia Feder Obstet Gynecol 2014; 6(3): 129-32.
11. Maternal Mortality in India 1997-2003, Registrar General of India. Available at: http://www.censusindia.net/. Accessed on: December 15, 2008.
12. Fred Arnold, Sulabha Parasuraman, P. Arokiasamy, Monica Kothari. 2009. Nutrition in India. National Family Health Survey (NFHS-3), India, 2005-06. Mumbai: International Institute for Population Sciences; Calverton, Maryland, USA: ICF Macro.
13. Toteja GS, Singh P, Dhillon BS et al. Prevalence of anemia among pregnant women and adolescent girls in 16 districts of India. Food Nutrition Bull 2006;27(4):311-15.
14. Agarwal KN, Agarwal DK, Sharma A et al. Prevalence of anemia in pregnant and lactating women in India. Ind J Med Res 2006 Aug;124(2):173-184.
15. Rajamouli J, Ravinder A, SCK Reddy, Sujatha Pambi. Study on prevalence of anemia among pregnant women attending antenatal clinic at rural health training centre (RHTC) and chalmeda anand rao institute of medical sciences teaching hospital, karimnagar, Telangana, India. International Journal of Contemporary Medical Research 2016;3(8):2388-91.
16. Jin L, Yeung LF, Cogswell ME, et al. Prevalence of anemia among pregnant women in South-east China. Public Health Nutr 2010;13(10):1511-1518.
17. Preziosi P, Prual A, Galan P, Daouda H, Boureima H, Hercberg S. Effects of iron supplementation on the iron status of pregnant women:consequences for newborns. Am J Clin Nutr. 1997;66(5):1178-82.

*Received:* 26th November 2019

*Accepted:* 10th February 2020

*Published online:* 1st July 2020

*Citation:* Bhadra B, Sarkar D, Ahmed M. Prevalence of anaemia in antenatal patients in a tertiary care hospital. J Indian Acad Obstet Gynecol 2020; 2(1): 16-19

|  |
| --- |
| **1.** Dept of Obstetrics & Gynaecology, College of Medicine & JNM Hospital, Kalyani, WB  **2.** Dept of Anaesthesiology, Tomo Riba Institute of Health & Medical Sciences, Naharlagun, Arunachal Pradesh  **3.** Dept of Obstetrics & Gynaecology, Silchar Medical College, Silchar, Assam  Email: drdsarker\_2006@rediffmail.com |

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

**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. (Range20-28 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/ colporrehxis 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 from0.24-5.09 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 ofpatients 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 para2 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 requiredto 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 Indianstudies [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.

**References**

1. Umezurike CC, FEYI‐WABOSO PA, Adisa CA. Peripartum hysterectomy in Aba southeastern Nigeria. Australian and New Zealand Journal of Obstetrics and Gynaecology 2008;48(6):580-2.

2. Shetty S. Emergency Peripartum Hysterectomy: A one-year review at a tertiary care hospital. Int J Med Sci Public Health. 2013; 2(4): 1050-53.

3. Wong TY. Emergency peripartum hysterectomy: a 10-year review in a tertiary obstetric hospital. The New Zealand Medical Journal (Online) 2011; 124: 1345.

4. Glaze S, Ekwalanga P, Roberts G et al. Peripartum hysterectomy. Obstet Gynecol 2008; 111 (3): 732-8.

5. Whiteman MK, Kuklina E, Hillis SD, Jamieson DJ, Meikle SF, Posner SF, et al. Incidence and determinants of peripartum hysterectomy. Obstet Gynecol 2006; 108:1486–92.

6. Clark SL, Yeh SY, Phelan JP, Bruce S, Paul RH. Emergency hysterectomy for obstetric hemorrhage. Obstetrics and gynecology 1984;64(3):376-80.

7. Allahabadia G, Vaidya P. Obstetric hysterectomy (A review of 50 cases from January 1987 to August 1990). J Obstet Gynecol India 1991; 41:634-7.

8. Barclay DL, Hawks BL, Frueh DM, Power JD, Struble RH. Elective cesarean hysterectomy: a 5-year comparison with cesarean section. American Journal of Obstetrics & Gynecology 1976;124(8):900-11.

9. Ferreira Carvalho J, Cubal A, Torres S, Costa F, Carmo O do. Emergency peripartum hysterectomy:A 10-Year Review. ISRN Emerg Med. 2012:01–07

10. Tapisiz OL, Altinbas SK, Yirci B, Cenksoy P, Kaya AE, Dede S, Kandemir O. Emergency peripartum hysterectomy in a tertiary hospital in Ankara, Turkey: a 5-year review. Archives of gynecology and obstetrics 2012; 286(5):1131-4.

11. Özden S, Yildirim G, Basaran T, Gurbuz B, Dayicioglu V. Analysis of 59 cases of emergent peripartum hysterectomies during a 13-year period. Archives of gynecology and obstetrics 2005; 271(4):363-7.

12. Baskett TF. Emergency obstetric hysterectomy. Journal of Obstetrics and Gynaecology 2003; 23(4):353-5.

13. Singla A, Mundhra R, Phogat L, Mehta S, Rajaram S. Emergency Peripartum Hysterectomy: Indications and Outcome in a Tertiary Care Setting. Journal of clinical and diagnostic research: JCDR 2017;11(3):QC01.

14. Wright JD, Devine P, Shah M, Gaddipati S, Lewin SN, and, Herzog TJ et al. Morbidity and mortality of peripartum hysterectomy. Obstetrics & Gynecology 2010; 115(6):1187-93.

15. Shah M, Wright JD. Surgical intervention in the management of postpartum hemorrhage. Seminars in perinatology 2009; 33(2): 109-115.

16. Oyelese Y, Scorza WE, Mastrolia R, Smulian JC. Postpartum. Obstet Gynecol Clin Am 2007; 34(3):421-41.

17. Kant A, Wadhwani K. Emergency obstetric hysterectomy: J Obstet and Gynecol India 2005;55:32-4.

*Received:* 1st December 2019

*Accepted:* 20th March 2020

*Published online:* 1st July 2020

*Citation:* Ramaraju HE, Prakrutha S. Clinical outcome in emergency peripartum hysterectomy at a tertiary care centre. J Indian Acad Obstet Gynecol 2020; 2(1): 20-23.

|  |
| --- |
| Dept of Obstetrics & Gynaecology, Vijayanagar Institute of Medical Sciences, Bellary, Karnataka  Email: drramaraju678@gmail.com |

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

**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 ≥ 90mmHg) and substantial proteinuria (>0.3g/24hours). 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.

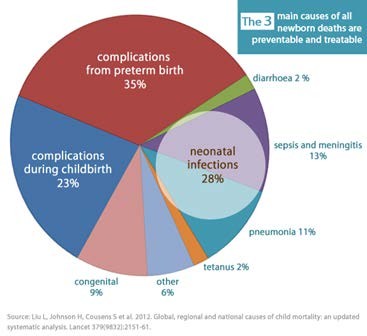
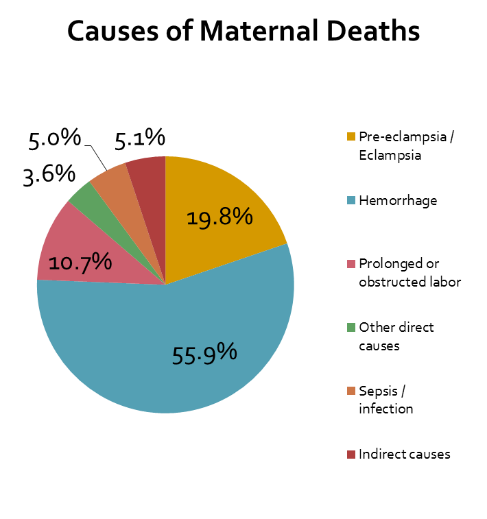
Pregnancy and birth-related complications are leading causes of death among women of reproductive age in developing countries. In 2008 alone, an estimated 358,000 women worldwide died from complications related to pregnancy or childbirth (WHO et al. 2010). The vast majority of maternal deaths occur in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



**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, 7days/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

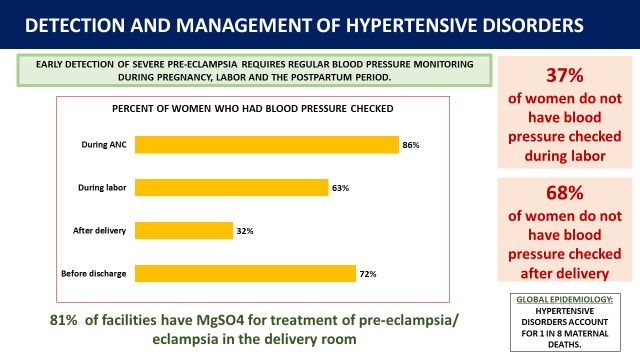
• 34% of postpartum women have their blood pressure checked before discharge from facility after childbirth

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



FACILITIESAVAILABLE-PERIPHERAL HOSPITALS/TEACHING INSTITUTIONS/HDU/ANY PECIALISTINSTITUTE

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.

• RaisecommunityawarenessonPE/Edangersignsandestablishthereferralandlinkagebetween 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 frequent lyper 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.

## **Management protocol for PIH:**



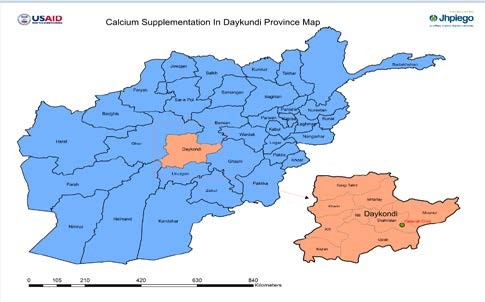
NEW INNOVATION/CLINICAL RESEARCH (IF ANY) LAST FIVE YEARS

Available evidence shows that calcium supplementation prevents Pre-eclampsia (PE), specifically calcium supplements reduce the average risk of high blood pressure (BP) and of PE with the greatest effect in high-risk women and those with low baseline calcium intake [17].

Considering the high prevalence and mortality caused by PE/E in Afghanistan, the need for an additional preventive strategy is a priority and calcium supplementation was in traduced for primary prevention PE/E in Shahristan district of Daikundi province.

Major focus of the pilot is on the prevention of PE/E. Calcium is distributed through health facilities, by health care providers. It’s distributed as far possible at first ANC visit by healthcare providers who received training on PE/E prevention, detection and management and calcium at the start of the pilot in October2016 [18].

The calcium dashboard developed and WHO procured 300,000 calcium carbonate tablets (1,250 mg each tablet) which was transported to Daikundi in April 2017 [6], and calcium supplementation initiated in Shahristan District Hospital by mid-April 2017. The provided calcium tablets provide for pregnant women and still is going on.



**Number of Health Providers Received Calcium Supplementation Training [18]**

**Number of Women received Calcium Tabat…19**



**37**

**21**

OCTOBER to NOVEMBER

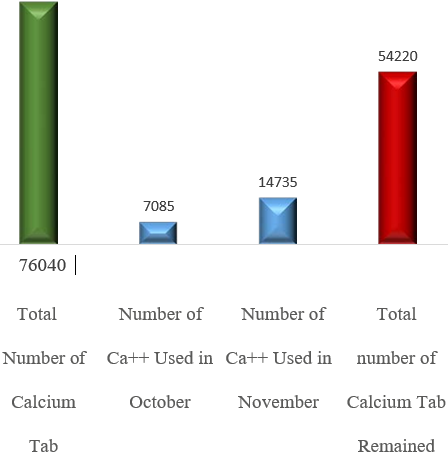


20

25

**Female Male**

**Consumption of Calcium Tab Monthly base [20]**

****

**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.

**References:**

1. Islamic Republic of Afghanistan Ministry of Public Health. A Basic Package of Health Services for Afghanistan, 2009, section 2. page7

2. Afghanistan Mortality Survey 2010. Calverton, Maryland, USA: APHI/MoPH, CSO, ICF Macro, IIHMR and WHO/EMRO. Available at: http://dhsprogram.com/pubs/pdf/FR248/FR248.pdf

3. Ministry of Public Health Afghanistan. National reproductive maternal newborn child and Adolescent health strategy 2017-2021, section 1 page8.

4. Ministry of Public Health Afghanistan. National Maternal and Newborn Health Quality of Care Assessment Key Findings and Recommendations, prevention and management of preeclampsia and Eclampsia page2

5-Linda A. Bartlett et al. Where giving birth is a forecast of death: maternal mortality in four districts of Afghanistan, 1999–2002. Lancet 2005; 365:864-70.

5. Socio-Demographic and Economic Survey (SDES) 2011–2016 by the Afghan Central Statistical Office and UNFPA; and Linda Bartlett et al. Progress and inequalities in maternal mortality in Afghanistan: findings from the RAMOS–II study. Lancet Global Health2017

6. Calcium Supplementation protocol as Primary Prevention of PIH among Pregnant Women in Afghanistan 2016

7. Ministry of Public Health Afghanistan. National reproductive maternal newborn child and Adolescent health directorate. Ca supplementation for prevention of PIH pilot study 2016-2017 RHNACH/MOPH

8. Ca supplementation for prevention of PIH dash board JHPIGO /HEMAYAT project.2017.

9. Ministry of Public Health General Directorate of Curative Medicine Protocol of management of pregnancy Induced Hypertension. 2017, Wall chart.

10. Ministry of Public Health Afghanistan. National reproductive maternal newborn child and Adolescent health directorate. Management of Hypertension in Pregnancy RHMNACH (Maternal Heath Protocols).

11. L Sayetal. (2014) Global causes of maternal death: a WHO systematic analysis. Lancet Global

Health.

12. MICS 2003, AHS 2006, NRVA 2007-8, AMICS 2010-11, NRVA 2011–2012, NRVA 2013-14,

And AfDHS 2015.

13. Trends in Maternal Mortality: 1990 to 2015Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division Executive Summary.

14. WHO website maternal mortality in Afghanistan www.who.int.

15. Maternal Health Care Trends in Afghanistan Mohammad Iqbal Aman, Bashir Noormal, Co-authors Khwaja Mir Islam Saeed Mohammad Hafez Rasooly. July 2013 p1,6.

16. Causes of Neo Natal death HBB (Helping Babies Breath), https://www.aap.org/en-us/advocacy-and- policy/aap-health-initiatives/helping-babies-survive/Pages/About.aspx

17. Islamic Republic of Afghanistan Ministry of Public Health. Essential Package of Health Services for Afghanistan, July, 2005, section 1. page 7

18. WHO Guideline: Recommendation for prevention and treatment of preeclampsia and eclampsia (PEE), 2011

19. WHO Guideline: Calcium supplementation in pregnant women. Geneva, World Health Organization,2013.

20. Afghanistan Mortality Survey 2010. Calverton, Maryland, USA: APHI/ MoPH, CSO, ICF Macro, IIHMR and WHO/EMRO. Available at: http://dhsprogram.com/pubs/pdf/FR248/FR248.pdf

21. WHO Guideline: Recommendation for prevention and treatment of pre eclampsiaandeclampsia (PEE), 2011

*Received: 20th October 2019*

*Accepted: 19th January 2020*

*Published online: 1st July 2020*

*Citation:* Malalai Jamshid Nejaby. Pregnancy Induced Hypertension – in context of Afganistan. J Indian Acad Obstet Gynecol 2020;2(1): 24-28.

|  |
| --- |
| Executive Board Member, Afgan Society of Obstetricians and Gynaecologists (ASOG), Afghanistan.  Email: afsog.afg@gmail.com |

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

**Review Article**

**PREECLAMPSIA SCENARIO IN INDIA**

### Ruchika Garg, Vishy Agarwal

###### 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 201512.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 arises 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% 14 to 9% [15]

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

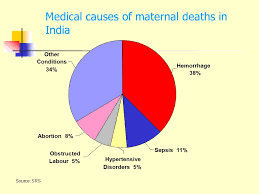
NULLIPARITY - In all the studies nulliparous women predominated (79%) followed by second gravid (12.3%)

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 thee clamptic 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 as 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 of 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 nifidepine. 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

**REFRENCES**

1. Roberts JM, Lain KY: Recent insights into the pathogenesis of preeclampsia. Placenta 2002, 23: 359 – 72

2. Al Ghamdi Saeed MG, Al Harbi AS, Khalil A. Hypertensive disorder of pregnancy: prevalence, classification and adverse outcomes in northwestern Saudi Arabia. Annals of Saudi Medicine Journal 1999; 19:557-60

3. Mehta B, Kumar V, Chawla S, Mahopatra D. Hypertension in pregnancy: A community-based study. Indian J Community Med 2015; 40(4): 273-78

4. Sachdeva PD, Patel BG, Bhatt MV. A study of incidence and management of pregnancy induced hypertension in central Gujarat, India. Int J Univ Pharm Life Sci. 2011; 1:61–70.

5. Nadkarni J, Bahl J, Parekh P. Perinatal outcome in pregnancy associated hypertension. Indian Pediatr. 2001; 38:174–8

6. Mohan BS. Pregnancy induced hypertension and prior trophoblastic exposure. J Obstet Gynecol Ind. 2004;54: 568–70.

7. Prakash J, Pandey LK, Singh AK, Kar B. Hypertension in pregnancy: Hospital based study. J Assoc Physicians India. 2006; 54:273–8.

8. Bangal VB, Giri PA, Mahajan AS. Maternal and foetal outcome in pregnancy induced hypertension: A study from rural tertiary care teaching hospital in India. Int J Biomed Res. 2011; 2:595–9.

9. Sajith M, Nimbargi V, Modi A, Sumariya R, Pawar A. Incidence of pregnancy induced hypertension and prescription pattern of antihypertensive drug in pregnancy Int J Pharma Sci Res 2014; 5(4): 163-70.

10. Rudra CB, Williams MA: Monthly variation in preeclampsia prevalence Washington State, 1987 – 2001: J Matern Fetal Neonatal Med 2005; 18: 319 – 21

11. Cassell KA, O Connell CM, Baskett TF: The origins and outcomes of triplets and quadruplets pregnancies in Nova Scotia 1980 to 2001 Am J Perinatal 2004, 21: 439-45

12. Alkema L, Chou D, Hogan D, Zhang S, Moller A, Gemmill A, et al. Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. Lancet. 2016;387(10017):462–74.

13. Abalos E, Cuesta C, Carroli G, Qureshi Z, Widmer M, Vogel J, et al. Pre‐eclampsia, eclampsia and adverse maternal and perinatal outcomes: a secondary analysis of the World Health Organization Multicountry Survey on Maternal and Newborn Health. BJOG 2014; 121(s1):14–24.

14. Vaidya PR, Shroff CP, Patkar VD. Pathological changes in eclampsia J Obstet Gynecol India 1982; 32: 325-29

15. Bhattacharjee PK, Pukayastha S et al. Caeserean section in eclampsia still indilemma J Obstet Gynecol India 1992; 42 (3): 343 – 8

16. Maternal mortality and child mortality and total fertility rates. Sample Registration System Office of RGI 2007.

17. Maternal mortality and child mortality and total fertility rates. Sample Registration System Office of RGI 2013.

18. Garg R, Agarwal N, Kumari SS, Agarwal P. Low – dose Magnesium Sulphate Regime for Eclampsia in India J South Asian Feder Obst Gynae 2017; 9(1):5 - 8

19. Directorate General of Health Services: Indian Public Health Standards (IPHS) for Primary Health Centre revised guidelines. In: Ministry of Health and Family Welfare. New Delhi Government of India; 2010.

20. Directorate General of Health Services: Indian Public Health Standards (IPHS) for Sub Centre revised guidelines. In: Ministry of Health and Family Welfare. New Delhi Government of India; 2010.

21. National Rural Health Mission Frame work for implementation

22. AbdouZahar, Wardla WT: Antenatal care in developing countries, promises, achievements and missed oppurtunities: an analysis of trends levels and differential, 1990 – 2001 Bulletin of World Health Organisation 2003; 67:13 -25

23. International Institute for Population Sciences: National Family Health Survey (NFHS -3) 2005 – 06 India: Vol 1 Mumbai, 2007

24. World Health Organization SEARO Region: Improving Maternal, Newborn and Child Health in the South-East Asia Region.2005

25. Payne B, von Dadelszen P, Bhutta Z, Magee L, Adetoro O, Sotunsa J, et al. Protocol 13PRT/9313: The Community Level Interventions for Pre-eclampsia (CLIP) Trials: four prospective cluster randomized controlled trials comparing a package of interventions directed towards improving maternal and perinatal outcomes related to pre-eclampsia with current standards of care (NCT01911494). Lancet. Expecting submission date January, 2018

26. Jariwal MC. Indian Scenario of Preeclampsia and its consequences & early prophylaxis. Pregnancy Hypertens 2012; 2(3): 333.

*Received:* 26th December 2019

*Accepted:* 1st March 2020

*Published online:* 1st July 2020

*Citation:* Garg R, Agarwal V. Preeclampsia scenario in India. J Indian Acad Obstet Gynecol 2020;2(1): 29-32.

|  |
| --- |
| Dept of Obstetrics & Gynaecology, Sarojini Naidu Medical College, Agra, UP  Email: ruchikagargagra@gmail.com |

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

**Video Presentation**

**Modification of mid-urethral sling procedure - “Sling on string” without using commercially available trans-obturator tape**

### Mriganka Mouli Saha 1, Abhijit Halder 1, Nayan Chandra Sarkar 1, Abhijit Mondal 2, Mainak Nath 1

###### 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 f 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-urethal 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**: Demonostration of Modified needle and attaching polypropylene suture with the mesh end

****

****

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

****

****

**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/m2) | | 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 H2O) | | 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)** |
| 1st Year | 0%  **(<.001)** | 0%  **(<.001)** |
| 2nd 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)** |
| 1st Year | 0.08 ± 0.9  **(<.001)** | 0.11 ± 0.9  **(<.001)** |
| 2nd 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)** |
| 1st Year | 91.8 %  **(<.001)** | 94.7 %  **(<.001)** |
| 2nd 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).**

*Received:* 21st November 2019

*Accepted:* 10th March 2020

*Published online:* 1st July 2020

*Citation:* Saha MM, Halder A, Sarkar NC, Mondal A, Nath M. Modification of mid-urethral sling procedure - “Sling on string” without using commercially available trans-obturator tape. J Indian Acad Obstet Gynecol 2020; 2(1) 33-37.

|  |
| --- |
| 1. Dept of Obstetrics & Gynaecology, College of Medicine & JNM Hospital, WBUHS, Kalyani, WB  2. Dept of Obstetrics & Gynaecology, Tata Central Hospital, Jamadoba, Jharia, Jharkhand  email: itsmemriganka@yahoo.com |

***Journal of Indian Academy of Obstetrics and Gynaecology*** July 2020

Vol. 2, Issue 1

**Author’s Guidelines**

Original quality works only deserves the acceptance. All manuscripts will be reviewed by two anonymous peer reviewers and Editorial members, unless otherwise specified. If the quality is not maintained and subject of work is beyond the scope of this journal, then the Editorial board will not consider the article for publication. Editorial Board’s decision is final.

**COVERING LETTER**

Covering letter should clearly mentioned that this article is not been submitted elsewhere for publication. If more than one author, then each author’s contribution should be quantified properly. All authors must approve the content of the article. Research work should have approval of the Ethics Committee of the respective institution, and within the provisions of the Declaration of Helsinki (current version). Everything should be done after obtaining informed consent and identity of the patient & human subject should not be disclosed – these have to be mentioned in the covering letter. All animal experiments should be within the respective country’s National Guidelines. Any conflict of interest, which may arise due to financial assistance or any other kind of help taken, should be informed.

**MANUSCRIPTS PREPARATION**

Manuscript is to be written in English. Use 12 font size for heading and 11 font size for others, in Times New Roman. Maximum word limit for an ORIGINAL ARTICLE AND REVIEW ARTICLE is 5000, inclusive of everything. The article has to be submitted in A4 paper format with double spaced lining and 30 mm margin all around. Numbering of the pages should be done in Arabic numerals using the ‘Footer’ at right corner; start from the title page. All the new paragraphs are to be indented. Don’t use hyphenation except where the word itself is hyphenated.

#### **caSe rePortS**

Interesting and rare cases are to be submitted and these should provide valuable information to the readers. The Case reports, without any significant carry forward message to the readers, will not be considered. Patient’s identification must not be disclosed. Maximum word limit for a case report is 2000.

**LETTER TO THE EDITOR**

Two types of Letter to the Editor will be accepted –

1) Referencing any article published in the recent past 3 consecutive issues of the Journal of Indian Academy of Obstetrics & Gynaecology.

2) Discourse that illuminates us on the various works on Obstetrics & Gynaecology, and other related arena.

Brief and precise communications are welcomed; maximum word limit is 400 with 1-4 references. Maximum three authors together can send a Letter to the Editor.

**STYLE**

1) Vancouver system is solicited. For guidance author can look at the International Committee of Medical Journal Editors’ revised ‘Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication’.

2) Only universally accepted standard abbreviation, acronyms and symbols are accepted. For other abbreviations, write the full form at least once at first use.

3) SI units are to be used for measurements.

4) Only generic names of the drugs are to be written.

5) Variables should be written in italics.

**PARTS OF MANUSCRIPTS**

The manuscripts should contain the following headings and arranged in this order –

1) Title page

2) Abstract and Key words

3) Text

4) Acknowledgments

5) References

6) Appendices

7) Tables

8) Figures

**TITLE PAGE**

It should contain –

1) Title of the article which should be precise and contain the major key words

2) Full name of author(s) with surname underlined

3) Designation of author(s)

4) Full address of corresponding author which should include e-mail ID, phone no.

5) Concise title (maximum 40 characters including spaces)

This information, except the title of the article, should not appear in any other part of the manuscript.

**ABSTRACT AND KEY WORDS**

A structured abstract of 250 words or less is needed for all original articles. The headings are Background/Objectives, Methods, Results and Conclusion. An unstructured abstract of 200 words or less for review article and 150 words or less for Case reports is to be submitted. No abbreviation and references should appear in this stage.

Title of the article should be written on the top and 3-5 key words are to be supplied at the end, in alphabetical order. If any doubt occurs regarding key words, then the help of US National Library of Medicine’s Medical Subject Headings (MeSH) browser list can be taken.

**TEXT**

It should be written under following subheadings –

1) Introduction

2) Materials & Methods

3) Results

4) Discussion (mention the limitation of the study, if any)

5) Conclusion

Use 12 font size for headings and 11 font size for others, in Times New Roman. Limit the conclusion within few sentences.

ACKNOWLEDGMENTS

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

**REFERENCES**

1. Vancouver system is to be followed

2. Number them according to their first appearance in the text by superscripting with Arabic numerals. Tables and figures referencing also should be numbered according to their appearance in the text.

3. Write all the name of the author’s up to six (6) authors.

4. In case of more than six (6) authors, write first three (3) author’s name and followed by et al.

5. Journal’s abbreviation is according to Index Medicus

6. Personal communication and unpublished data should be cited in the text (e.g. Manglem Ch, 2007, unpublished data); not in the references.

**Journal**

1. Frederick J, Fletcher H, Simeon D, Mullings A, Hardie M. Intramyometrial vasopressin as a haemostatic agent during myomectomy. *Br J Obstet Gynaecol* 1994; 101(5):435-7.

**booK**

1. Shaw RW, Soutter WP, Stanton SL (eds) *Gynaecology*, 3rd edn. Philadelphia: Churchill Livingstone, 2003.

**chaPter in a booK**

1. Menefeee 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.

**WebSite linK**

http://www.pfizer.com/files/products/uspi\_ gelfoam\_plus.pdf. accessed on 25-05-19

**aPPendiceS**

Abbreviation’s full form is to be written here. If any other kind of appendices are used, those are also to be mentioned here. The consequences should be their appearance in the text.

**tableS**

1. Table should have a small, precise heading.
2. Column headings may be supplemented by units, if applicable, in parentheses.
3. Full form of the abbreviations should be supplied in the footnote and refer to the table by superscripting a,b,c……
4. \*, \*\*, \*\*\* symbols are reserved for ‘p’ values

Consequences of the tables are according to their appearance in the text and number them in Roman numerals.

**FIGURES**

Figure means all illustrations (600 d.p.i.) – line drawing as well as photograph. Line drawing should be sharp and well defined. It can be professionally drawn and scanned or drawn on computer graphics. Proper labeling should be done. Photograph can be sent as jpeg file. All illustrations should bear heading at footnote and they should be numbered by Arabic numerals (e.g. Fig.1) according to their appearance in the text. Photograph is, preferably, to be associated with a linear scale or magnification mentioned.

**PEER REVIEW**

Double blind peer review. All the manuscripts will be peer reviewed by 2 independent peer reviewers. Decision of the manuscript will be communicated to the corresponding authors within 4-6 weeks.

**PROOF CORRECTION**

After checking, proof will be sent back to the corresponding author by e-mail for resubmission, if any correction needed. In case he/she is not available, then an alternative e-mail ID should be provided.

**PUBLICATION**

There will be online and print version of the journal. Online version is freely accessible and downloadable to the authors. The corresponding author will receive one hard copy of the journal.

**REPRINT REQUEST**

Reprints and additional copies are available on request after payment of requisite fees.

**Subscription Form**

I want to subscribe to Journal of Indian Academy of Obstetrics & Gynaecology.



1. Name –
2. Qualification –
3. Occupation –
4. Postal address –

5. -------------------------------------------------------------------------------------------------------

--------------------------------------------------------------------------------------------------------

--------------------------------------------------------------------------------------------------------

Ph No - Whattsapp No - Email ID -

6. Cheque No / DD No Cheque in favor of Indian Academy of

Obstetrics & Gynaecology, payable at Kalyani

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Subscription Rate | | | | |
| Journal of Indian  Academy of Obstetrics *&* Gynaecology | Periodicity | 1 issue | 1 year | 3 years |
| Half yearly | Rs. 200 | Rs. 400 | Rs. 1000 |

Subscription may increase if the periodicity of the journal increases.





**Indian Academy of Obstetrics *&* Gynaecology**

A – 9/7, Kalyani, Nadia, West Bengal 741235 India Email: [jiaog2017@gmail.com](mailto:jiaog2017@gmail.com)

website: [www.iaog.in](http://www.iaog.in/)