Emergence of Maternal Intensive Care Unit in Medical College Hospital

*Yasmin F,[1] Rashid M,[2] Sultana MT[3]

The present study was to done to observe the emergence of intensive care for the pregnant women who are critically ill due to eclampsia and reduction of mortality and morbidity. It was a longitudinal prospective study performed with critically ill eclamptic patient admitted in Eclampsia ward and Intensive Care Unit (ICU) of Dhaka Medical College Hospital (DMCH) from January 2004 to December 2004. Data included critically ill eclamptic patient admitted in eclampsia ward, number of patient requiring ICU support, number of critically ill eclamptic patient managed in eclampsia ward and ICU and their outcome. Among the eclamptic patient 8.85% was critically ill who was in need of intensive care support. Mortality due to eclampsia was 6.21%. Among them 70% was severely ill and died in ICU and eclampsia ward. Only one third of severely ill eclamptic patient was lucky to have intensive care support due to scarcity of beds and others were managed in eclampsia ward. Mortality in intensive care unit was lower than those in eclampsia ward. Maternal morbidity and mortality can be reduced by meticulous adaptation of safe motherhood initiative, provision of separate ICU services for critically ill obstetrical patients and early assessment and aggressive intervention through a team approach involving obstetricians, intensivists and anesthetists.

[Dinajpur Med Col J 2013 Jan; 6 (1):97-99]

Key words: Eclampsia, maternal morbidity, pregnancy complications, intensive care

Introduction

Maternal death is a particularly tragic event because pregnant women are usually young and healthy. Despite therapeutic advances during this century, deaths of pregnant women remain an important public health problem.[1] Maternal death has become an extremely rare event in developed countries[2]. Between 0.1% and 0.9% of deliveries developed pregnancy related complications requiring admission to an intensive care unit (ICU).[3] Eclampsia is a pregnancy specific hypertensive syndrome associated with significant morbidity and mortality in mother and baby. Pre-eclampsia and obstetric hemorrhage are the leading causes of obstetric admissions to the ICU in the Western world and Asia.[4,5] There is a growing evidence that admission of high risk obstetric patients to the ICU is associated with a fall in maternal mortality[5]. Some centers have obstetric ICUs but most use general ICUs to manage critically ill obstetric patients.[4] One of the indicators of maternal morbidity is transfer to an ICU.[6] Relatively few studies concerning obstetric ICU patients have been published.

1. **Dr. Fowzia Yasmin, Consultant Gynecology, Tongibari Upa-zilla Health Complex, Munshigong*
2. *Professor Dr Maliha Rashid. Professor of Gynecology and Obstetric, Dhaka Medical College*
3. *Dr. Mst. Touhida Sultana, Consultant, Gynae & Obs, Mohammad Ali Hospial, Bogra*

** For correspondence*

Methods

It was a longitudinal prospective study performed with very critically ill eclamptic patient admitted in eclampsia ward of Dhaka Medical College Hospital (DMCH) and referred to intensive care unit (ICU) from January 2004 to December 2004. Among the 67 eclamptic patient who needed ICU support 47 was managed in eclampsia ward in scarcity of beds and 20 in ICU was included in the study. Eclampsia ward in DMCH established in 1991 with total number of 8 beds for all critically ill patient with some improved support and trained doctors and nurses. No separate maternal ICU is developed.

Results

Among the 8,501 obstetric patients admitted in DMCH during the study period 757 (8.91%) were due to eclampsia. Among the eclamptic patients 8.85% were severely ill who was in need of intensive care support. Among the maternal mortalities 43.11% was due to eclampsia. 70% of the severely ill eclampsia patient died in ICU and eclampsia ward. Out of 67 severely ill patient 20(29.85%) was lucky to have intensive care support due to scarcity of beds and 47(70.15%) were treated in eclampsia ward. Mortality due to eclampsia in ICU was 60% and in eclampsia ward was 75%.

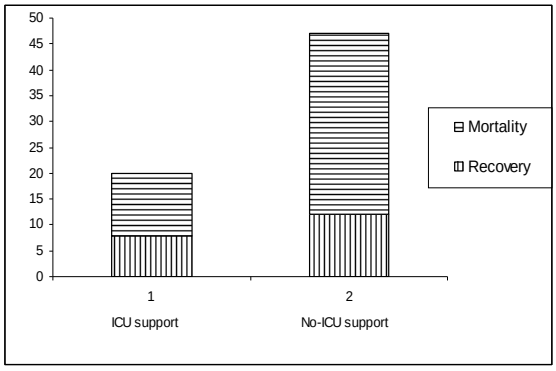

Figure 1. Comparison of maternal outcome between ICU support receivers and non-ICU support receivers

Out of 67 critically ill eclamptic patients, 20 patients received ICU support and mortality was 12(60%), but among those 47 patients not received ICU support mortality was 35(75%).

Discussion

Eclampsia is a serious and relatively frequent complication of pregnancy. It is still associated with substantial morbidity and mortality.[6] Emergence of transferring critically ill eclamptic patient here is much higher then other developed Asian and western countries is mostly due to unavailability of ICU support in most tertiary hospital in our country and all critically ill such patient is transferred here. Bibi et al observed that 1.34% of obstetrics patients were transferred to general ICU in Pakistan,[8] corresponding to 1.45% of developing countries reports. However rate seems to be slightly raised from 0.26% and 0.17% documented from developed world[9,10] where all such patient is admitted in ICU on prior basis but in our cases among the critically ill patient the most complicated patients are referred to ICU in scarcity of beds. In present study maternal mortality of severely ill eclamptic patient is 70% which is far higher than 33% in Pakistan and 25% in Indian study but negligible in western countries (1.34-3.34%).[10-12]

Current study revealed that only 29.85% critically ill eclamptic patient received ICU support which is inconsistent to finding of Dao-B[12] where all such patient received ICU support. The main constancy here was due to lack of insufficient bed or separate maternal ICU which is available in some countries.[13] This study showed major obstetric indication of transferring to ICU was eclampsia related

complication which is similar to Balders-penna et al.[14-15]

Conclusion

Pregnancy is a natural physiological process and in the majority of women, proceeds uneventfully. However, physiological and anatomical changes can cause severe morbidity and mortality in few women. Maternal mortality is the most extreme adverse effect on the health of pregnant women. Once eclampsia occurs, it has a train of complications. Many patients come to the hospital at the terminal stages, not only with primary but also with secondary complications. They are delayed at every step of their journey. Therefore, a last minute best management effort should be given to everyone. An intensive care unit offers the opportunity to improve patient care. Close observation in the ICU allows problems to be detected and in some cases, the complications may be prevented so the patient can recover more quickly. Critically ill eclamptic patients can be managed more easily in the Maternal ICU which reduces maternal mortality and morbidity, so development of Maternal Intensive Care Units in tertiary hospital is advocated.

References

1. Martin SR, Foley MR. Intensive care in obstetrics: An evidence- based review. Am J Obstet Gynecol 2006; 195: 673-89.
2. Zeeman GG. Obstetric critical care: A blueprint for improved outcomes. Crit Care Med 2006; 34: S208-S214.
3. Nagaya K, Fetters MD, Ishikawa M et al. Causes of maternal mortality in Japan. JAMA 2000 ; 283 : 2661-7.
4. Mahutte NG, Murphy-Kaulbeck L, Le Q, Solomon J,Benjamin A, Boyd ME. Obstetric admissions to the intensive care unit. Obstet Gynecol 1999; 94:263-6.
5. Okafor UV, Aniebue U. Admission pattern and outcome in critical care obstetric patients. Int J Obstet Anesth 2004;13:164-6.
6. Jenkins TM, Troiano NH, Graves CR, Baird SM, Boehm FH. Mechanical ventilation in an obstetric population: characteristics and delivery rates. Am J Obstet Gynecol 2003; 188:549-52.
7. Demirkiran O, Dikmen Y, Utku T, Urkmez S. Critically ill obstetric patients in the intensive care unit. Int J Obstet Anesth 2003 Oct; 12 (2):266-70.
8. Bibi S, Memon A, Sheikh JM, Qureshi AH. J Ayub Med Coll Abbottabad 2008;20(1).
9. Bernard GR, Artigas A, Brigham KL et al. The American-European Consensus Conference on ARDS. Definitions,mechanisms, relevant outcomes, and clinical trial coordination.Am J Respir Crit Care Med 1994; 149:818-24.
10. Munnar U, Karnad DR, Bandi VDP, Lapsia V, Suresh MS, Ramshesh P *et al*. Critically ill Obstetrics patients in an American and an Indian public hospital: Comparison of case mix, organ dysfunction, Intensive care requirements, and outcomes. Intensive Care Med 2005; 31:1087–94.
11. Karnad DR, Lapsia V, Krishnan A, Salvi VS. Prognostic factors in obstetric patients admitted to an Indian intensive care unit. Crit Care Med 2004; 32(6):1294–9.
12. Hakim A, Cleland J, Bhatti M. Main Report, Pakistan Fertility and Family Planning Survey 1996 -97; National Institute of Population Studies Islamabad, Dec 1998.
13. Dao B, Rouamba A, Ouedraogo D, Kambou T, Baize A J. Transfer of obstetric patient in pregnant and postpartum condition to an intensive care unit, Burkina faso: Gynecol-obstet –Fertil. 2003. P.123-6.
14. Ben L, Daouas N, Ben J, salma A. Jegham H. Maternal emergencies requiring controlled ventilation: epidemiology and prognosis: J-Gynacol-Obstet-Biol-reprod.2002.vol. 31(3):P.256-60.
15. Balders P,Canales M, JL Angulo, AnayaP, Gonzalez O. HELP syndrome- evidence of possible systemic inflammatory response in

pre- eclampsia: Ginecol-obstet-Mex.2002.70.P328-37.