High Dependency Units in Obstetric Care- Its Impact on the Maternal and Perinatal Outcome

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Short Communication

Abstract: This is a prospective descriptional study to evaluate the use of high dependency units in high risk pregnancy management and to assess the perinatal outcome and maternal mortality and morbidity among women admitted to HDU.350 High risk women with life threatening complications of pregnancy were admitted at HDU and treated for their critical conditions. When necessary they were transferred to ICU and the obstetric outcome was assessed. The incidence of HDU admission was 9.4%, maternal complications were Eclampsia, ARF, Septicaemia, DIC, hypovolemic Shock, ARF, CCF, HELLP syndrome. HDU mortality rate was 3.7%, with 69.2% preventable deaths, mean Duration of hospital stay was 11.47days.NICU transfer rate -29.71%, 19.2% were preterm, perinatal mortality-15.71%, with advantage of breast feeding to the neonate in HDU thereby promoting bonding.

Keywords: High dependency obstetric units (HDU), intensive care units (ICU), maternal mortality and morbidity, Perinatal outcome.

Introduction

High dependency Units are Emergency care units manned by a residents trained in critical care units, anaesthesia residents, paramedical staff, are skilled and equipped with life saving emergency care. The high risk pregnant women are admitted at High dependency units and given emergency care and managed accordingly by the Obstetricians. Availability of Emergency services at this unit including critical care may be practised as one of the Evidence based interventions in Emergency obstetric care in the journey towards SAFE MOTHERHOOD. The following is an ongoing, prospective, descriptive, clinical study undertaken at a tertiary care, multispecialty hospital to reduce the maternal, perinatal morbidity at SSIMS & RC, Davanagere over a period of 2 years and 10 months. (3430 admissions in labour room).

Aim

1) To deliver Emergency care to critically ill pregnant women at High Dependency Unit, by multi speciality health care personnel. 2) To assess the HDU utilisation rate by the predicting factors for maternal super speciality/IU care transfers, 3)To assess the Impact of HDU care on perinatal out come regarding birth weight, Gest. Age, neonatal intubations ,NICU transfer for sepsis, MAS , Birth Asphyxia, Need for Mechanical ventilation and Perinatal Mortality,4).To evaluate the Utilisation of HDU as step down ICU among critically ill High risk, pregnant women.

5) To analyse the preventable causes of Maternal and mortality, and to encourage bonding and initiate early Breast feeding by neonatal bedding-in practice among women in HDU.

Method

350 high risk pregnant women were given obstetric care through HDU with severe life threatening complications of pregnancy, medical diseases complicating pregnancy, complications of labour ,sepsis ,severe PIH and Eclampsia with complications to mother and baby, etc. & were later transferred to respective ICU's/CCU when indicated. The final obstetric outcome ,predictors for ICU transfer rate, maternal and perinatal morbibity and mortality were analysed .Data collected were analysed in Microsoft Excel2007 and stepwise logistic regression analysis adjusting for maternal factors to assess the potential risk factors for HDU admission & pregnancy outcome

Result

97.5%mothers were in reproductive age, 80% were booked antenatally. Incidence of admission in HDU..9.4%. Criteria for admission at HDU were-.High risk pregnancy with life threatening complications requiring admission for extended care such as frequent monitoring of vital signs, pulse oxymetric measurements, oxygen therapy, emergency resuscitative measures, cardiac monitoring Etc. the admission rate at HDU was.9.45%. Gestational age on admission were 19.2% were <33weeks of gestation, 80.8% were >33weeks of gestation. Maternal indications for HDU admission were Severe P.I.H with complications- 26%, placenta praevia APH- 3.14%, Abruptio placenta-5.7%, P.P.H 14%, P.R.O.M with sepsis 8% Medical complications in pregnancy 24.2%, and others. Maternal outcome were;- eclampsia-8.5%, ARF-5.4%, CCF-1.42%, Shock-14.8%, HELLP SYNDROME-1.71%, D.I C-5.1%,septicaemia-2.28%,Most deliveries were at tertiary hospital.

Maternal outcome

1) General condition–improved 90.6%, Mean duration of hospital stay was 11.47days.HDU mortality—13(3.70%). (69.2% maternal deaths were preventable) .perinatal outcome:-gestational Age--full term--196 (56 %) , gestational Age -32-36wks-108(32.85 %) , birth weight -- 1-2kg(16.85 %), 2-3kg—30%, Neonatal unit transfer rate among neonates born to women in HDU care were as follows--Neonatal intubation and ventilator support were needed in 27.42 %, transfer to NICU—29.71%, need for surfactant therapy among pre term neonates was..11.2%. PNM-- 15.71 %, Morbidity-1.68%

Conclusion

Periodic emergency obstetric drills are essential for all staff working at obstetric units to improve care in critically ill mothers. Infants born to the mothers admitted to ICU through HDU, had higher rates of NICU admission, neonatal intubations, LBW, RDS, perinatal deaths and lower Apgar scores compared with infants born to non-ICU admitted mothers. Emergency care at HDU followed by timely transfer and care at ICU was associated with marked objective and subjective improvement in maternal condition. Duration of stay at hospital was longer, but associated with lesser morbidity. Mothers were shifted to HDU at LR for continued care with advantage of bonding and encouraging breast feeding as baby is with mother. Most HDU admissions reduce the utilisation of ICU care, thereby reducing the bed occupancy at the ICU. No additional medical staffs are needed at HDU as the staffs at the HDU are also trained in emergency Obstetric and medical skills. The neonatal care and bonding is ensured by the nursing staff at maternity services in HDU, which is an additional advantage to the newborn that may be lacking in intensive care units.

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