ABSTRACT

Maternal mortality has traditionally been the key measurement in the monitoring of maternal health and adequacy of obstetric services around the world including Sri Lanka. In Sri Lanka and other developed countries , the ability of maternal mortality to serve this purpose is reduce because of the rarity of maternal mortality, reflected in low maternal mortality ratios. Internationally, there has been increasing interest in severe maternal morbidity as an indicator to maternal health and maternity services. The objectives of the present study were to assess the proportion of severe maternal morbidity out of total number of deliveries , risk factors and consequences of severe maternal morbidity and to determine the morbidity: mortality ratio in the Central Province, Sri Lanka.

A cross sectional study was carried out in the Central province to assess the incidence of severe maternal morbidity . Total number of deliveries in the study sites of the Central Province during study period were taken as the denominator to calculate the proportion of SMM in this phase of the study. Total number of Severe Maternal Morbidity cases which occurred in the study period were taken as the numerator to calculate proportion. Information was collected from Bed Head Tickets and with the help of relevant documents using a check-list . The severe morbid conditions were defined using criteria developed by other countries and with the assistance of relevant specialists. An un matched case control study was conducted to assess the risk factors for severe maternal morbidity among the mothers in the three districts in the Central Province, which consisted of 165 cases and 330 controls. Data collection of this component of the study was done by principal investigator and three research assistants using an interviewer administered questionnaire. To find out the selected health consequence of severe maternal morbidity a prospective cohort study was conducted among 121 mothers exposed to severe maternal morbidity and 121 non exposed mothers. In this phase of the study data was collected using an interviewer administered questionnaire and self administered questionnaire (Edinburgh Postnatal Depression Scale) by principal investigator.

The study revealed that the proportion of severe maternal morbidity was 4.84 per 1000 deliveries in the Central Province , Sri Lanka .The proportion of

particular morbidities were :Severe Pregnancy Induced Hypertension (2.26 per 1000 deliveries), Eclampsia (0.22 per 1000 deliveries),Post Partum Haemorrhage (0.84 per 1000 deliveries) , Septicemia (0.32 per 1000 deliveries), HELLP syndrome (0.14 per 1000 deliveries), Ante partum haemorrhage (0.07 per 1000 deliveries),Heart Disease Complicating Pregnancy (0.64 per 1000 deliveries) ICU admission for reasons other than observation (0.07 per 1000 deliveries) and ruptured ectopic pregnancy (0.02 per 1000 deliveries).

During the study period there were 21 maternal deaths in the Central Province which works out to 9 severe obstetric morbidity cases for each maternal death. District wise morbidity mortality ratios were in Kandy 16:1, Matale 7:1,and Nuwaraeliya 6:1.

The case –control study revealed that following variables were the risk factors of Severe Maternal Morbidity in the Central Province, Sri Lanka; nationality other than Sinhala , religion other than Buddhism ,partners nationality other than Sinhala, partners religion other than Buddhism, no education or studied up to grade 5 only ,partner of mothers either with no education or studied up to grade 5 only ,employed before admission, partner unemployed status , monthly family income less than 10000 Rs, living in nuclear families ,previous no contraceptive history, not taken preconception folic acid, not taken rubella immunization, previous history of illegal abortion, previous history of still births, age more than 36 years, ,distance to hospital more than 5 Km, mode of transport to nearest hospital by estate lorry, registration during current pregnancy by PHMM other than mothers home, POA of registration after 12 weeks of gestation, no ante natal home visits by PHMM, ante-natal care at hospital clinic compare to the field clinic, and less than three ante natal clinic visit .

However, after adjusting for confounding factors using logistic regression analysis, distance to medical facility being more than 5 Km (adjusted OR 4.35 (CI 2.7-7.1), not taking contraceptive prior to the index pregnancy (adjusted OR 1.9 (CI 1.2-3.1) ,. Site of Registration other than mothers home (adjusted OR 1.7 (CI 1.04-2.78) and older age (adjusted OR 1.12 (CI 1.06-1.18)were emerged as the risk factors for severe maternal morbidity.

Some maternal and neonatal health consequences of severe maternal morbidity were assessed during the second phase (prospective cohort study) of the study. One neonatal death occurred in mothers exposed to SMM where as no death occurred among those not exposed to SMM group . Neonatal morbidity was three times higher among mothers' exposed to SMM than the non exposed group. Post Partum Depression among mothers exposed to SMM was approximately double among mothers exposed to SMM compared to the non exposure group. Practice of Exclusive breast feeding among both exposure and non exposure groups was more than 80% and there was no difference between two groups (RR=1).

The severe maternal morbidity/mortality ratio can possibly be used as a new indicator of maternal care and could be used to compare improvements in pre , intra and post partum care more accurately than mortality data alone. This major health risk to childbearing women is still relatively under investigated. Severe maternal morbidity is measurable and may be a more meaningful way to measure improvements in health care. Further work could identify the elements of the definition that are associated with poorer outcomes.