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Original Article

Referral of obstetric cases: Reasons and outcome in a tertiary care setting in Sukkur, Sindh.

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Abstract:

Introduction: The onset of pregnancy till its culmination is a critical care period for the mother because any negligence during the nine months can have dire consequences both for the mother and the child.

Objective: The objective of this study is to document the reasons for which women at the time of delivery are referred and their outcome for both mother and new born.

Methodology: A cross-sectional study was conducted in the Obstetrics and Gynaecology Unit 1, Department of a tertiary care teaching hospital in Sukkur, Sindh. Full-term pregnant females who were referred in the period of May 2018 to April 2019 were included. Total referrals accounted for n=99. Data was analysed on SPSS version 23. Frequencies and percentages were calculated for the reasons and the outcome. Kruskal Wallis test was applied for finding differences in mean gestational age among maternal and foetal outcomes. P-value less than 0.05 was taken as significant.

Results: Total n=99 females were referred during one-year period. The most prevalent medical reason for referral was postpartum haemorrhage (19%) and Eclampsia (18%). Anaemia as an indirect cause was seen in (41%) referrals. For the majority, the mode of delivery was Caesarean Section (49.5%). Maternal deaths were (12%) whereas Intra Uterine Deaths accounted for (41%).

Conclusion: The most common reason for referral was postpartum haemorrhage and eclampsia. Increase maternal mortality and intrauterine deaths are observed.

Keywords: Maternal outcome, foetal outcome, referrals, high-risk pregnancies, Anaemia.

Introduction:

Motherhood is an experience that is highly rewarding and fulfilling; yet for many it is besieged with suffering and poor health. Though a physiological phenomenon if not properly handled can be disastrous for both mother and child.[1] Every day, nearly 830 females perish from causes that are termed as avertable in pregnancy and childbirth.[2] Third world countries bear the major brunt of these deaths as the health systems are not functioning properly neither there is integration among the different tiers of the health system. Ninety-nine percent of these deaths occurring in Asia and Africa during pregnancy and childbirth have major contributing causes towards hostile maternal and perinatal outcomes. Evidence is most for lack of trained birth attendants, lack of education, low status of women in society, poor families, financial dependency of women, and delay in seeking medical treatment.[3] The major direct causes of maternal morbidity and mortality among others include hemor-

rhage and obstructed labor.[4] High-risk pregnancy has now emerged as a new forte and involves multidisciplinary management and a higher level of care.[5] The Safe Motherhood initiative of WHO has developed policies to help reduce the burden of maternal morbidity and mortality through skilled birth attendants, family planning services, proper antenatal care and essential obstetrics care.[5,6]

In a study conducted by Garhwali, Uttarakhand, India among 154 referred cases outcome was assessed, maternal mortality was zero whereas live births were 80%.[7] Another study conducted by Bindal et al in India highlighted 2.2% maternal deaths in all referred cases[8]. In a study conducted in Nepal, out of the total admissions 4% of the live birth had early neonatal death.[1] Several studies conducted showed that as many as 92% of deaths are because of the three-delay model as delay in referral and management. The first delay is in delaying the decision to seek care, the second delay in identifying the appropriate medical facility and the third delay in getting the requisite care necessary in achieving a positive outcome after reaching the medical facility.[9,10] A study conducted by Ayesha et al in Karachi reported 3% maternal mortality and 13% perinatal mortality as outcome of 234 referral cases.[11] A similar study conducted by Rathi Charu et al. gave a staggering 28% perinatal mortality as the outcome of 100 referral cases in the obstetrics' unit of a tertiary care hospital.[12] A study conducted in India report 6% perinatal deaths in the refereed population.[13] Another study conducted in KPK, Pakistan identified multiple reasons for the referral of obstetric cases of which the majority were during the intrapartum period.[14]

Methodology:

This cross-sectional study was conducted in department of Obstetrics and Gynecology Unit 1, of a tertiary care teaching hospital in Sukkur, Sindh. The target population was full-term pregnant females which were referred from other districts of Sindh Province. Data was collected in the period of May 2018 to April 2019. A total of n=99 referred patients were inducted into the study. They were selected through a non-probability consecutive sampling technique. The inclusion criteria were referred cases both booked and non-booked from other clinics, hospitals and BHUs located in other districts adjoining Sukkur.

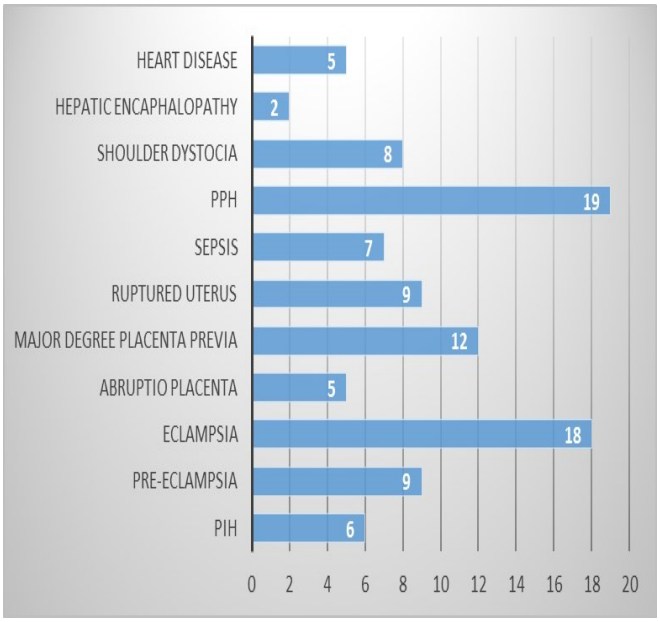
Statistical Package for Social Sciences (SPSS version 23) used for analysis. Continuous variables presented as mean and standard deviation; for categorical variables frequencies and percentages were calculated. For finding the mean difference in gestational age between the maternal and fetal outcomes Kruskal Wallis test was applied as the outcome variable was found to be skewed and heterogeneous. p-value less than 0.05 was taken as significant.

Results:

A total of n=99 referred cases were recruited during period of the study. The majority of cases were referred from district Gotki n=22 (22%) and district Shikarpur n=15 (15%). The mean age of participants was 26.7±5.9 years. The majority of cases (n=66) were unbooked The mode of transport used for shifting the patient to the health facility was mostly private transport n=67 (67.7%) while remaining n=32 (32.3%) utilized ambulance service as means of transportation. The mean gestational age was 35.2 ±2.9 weeks. Diagnosis at the time of arrival at the health facility is shown in Graph 1. Majority of the cases were referred because of postpartum hemorrhage and eclampsia (n=19, n=18 respectively)

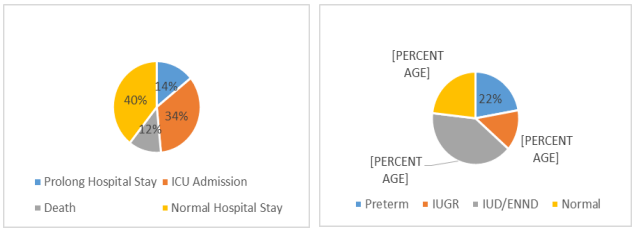
Graph 1: Diagnosis at the time of arrival at the Health Facility (%).

Anemia, an indirect cause was prevalent among 41.4% cases. Underlying causes of bad governance were identified as non-availability of blood by n=31 (31.3%) cases, non-availability of obstetrician in 1% cases and non-availability of ICU n=8 (8.1%) cases.



The majority n=49 (49.5%) ended up with a caesarean section, whereas n=40 (40.4%) delivered through normal vaginal delivery and n=10 (10.1 %/) had to undergo a caesarean hysterectomy. The maternal and fetal outcomes are shown in Graph 2.

Graph 2: Maternal and Fetal Outcome (%).



ICU-Intensive care Unit, IUGR-Intrauterine Growth Retardation, IUD/ENND-Intrauterine Death/Early Neonatal Death.

A significant difference in mean gestational age was observed among the different maternal outcome categories when the Kruskal Wallis test was applied (p=0.035). Mean gestational age in weeks was found to be the least 33.8±2.7 where death was the outcome. However, no significant difference was observed in mean gestational age among the different fetal outcomes yet the least mean 34.8±2.5 was observed in Intrauterine deaths (IUD) and early neonatal deaths (ENND). In un-booked cases n=31 (47%) delivered through vaginal delivery; caesarean section was done in n=31 (47%) while remaining n=4 (6%) had a cesarean hysterectomy. In booked cases majority went through cesarean section n=18 (54.6%), n=9 (27.3%) delivered through normal vaginal delivery and n=6 (18%) had a cesarean hysterectomy. When the maternal outcome was seen with reference to the booking status of the mother, n=10 (15%) mothers died during the process of childbirth, n=22 (33%) got admitted in the intensive care unit, n=9(14%) had prolonged hospital stay while n=25(38%) had a normal hospital stay. When fetal outcome in un-booked cases was reviewed, intrauterine death (IUD) was the outcome in n=25 (38%) cases, early neonatal deaths were seen in n=6 (9%) cases, Preterm deliveries were n=13(20%) and Intrauterine Growth Retardation (IUGR) was seen in n=7 (11%). In booked cases intrauterine death (IUD) was the outcome in n=8 (24%) cases, early neonatal death was seen in n=1 (3%) cases, Preterm deliveries were n=9(27%) and Intrauterine Growth Retardation (IUGR) was seen in n=7 (21%).

Discussion:

The study was conducted in Interior Sindh during a period of one year. The outcome of interest, in referred cases, was maternal and fetal outcome. The mean age of our study participants was 26.7±5.9 years; almost identical finding had been reported by other studies conducted elsewhere. In a study conducted by Bindal et al. in India similar age group was seen and another study conducted in Dacca by Morsheda et al., also reported their participant age range between 20-35 years.[8, 15] The study conducted in Aga Khan Hospital Karachi on the referral pattern of obstetrics emergencies in 2019 had a mean age of 28±4.7 years.[16]

In current study the number of un-booked cases outnumbered the booked cases; similar findings were also reported from the study of Bindal where the un-booked cases were 73%.[8] In our study, the majority of referrals were from districts outside Sukkur however the study conducted in Gwalior had the majority of 57% referrals coming from the same city.[8] The mean gestational age in weeks for our patients was 35±2 weeks, in a study conducted in Nepal the mean age was similar with 34 weeks.[1]

The three-delay model of WHO has apparently highlighted the core areas where intervention if timely done can change the course of events. Socio-economic factors and availability and accessibility of quality health care are interwoven with each other that ultimately end up in an emergency situation affecting both the maternal and fetal outcome.[17] In current study majority of referrals were brought through private transport highlighting the non-availability of ambulances as only 32% had utilized this mode of transport. It comes under the domain of prehospital services to identify the level of care required by the patients and timely intervention in shifting the patient to the nearest quality level of care.[18] Even where resources are scarce decreasing the time to shift the patient to an emergency care setting reduces both the morbidity and mortality.[19]

Anemia in referred case was found prevalent (41%) with Hb% below the recognized cutoff of 12.0 g/dl laid down in the guidelines.[20] A study by Bindal et al. from India, reported 25% anemic patients among referred cases.[8] Another study conducted in India by Goswami et al. reported the frequency of anemia in

referred cases to be 7%.[7] In a study conducted in Tanzania, anemia was seen in 2.7% of referred cases.[21] A review conducted in India by Prasad et al.[22] in 2018 quoted the figure of 17% severe anemia as the underlying cause of referral. Najam et al. reported that anemia was present in 7.2% of the referred cases.[23]

In current study, the reasons for referral at the time of arrival, were PPH (19%) and eclampsia (18%). A study conducted by Jyoti et al.[8] in India identified hypertensive crisis (27%) and hemorrhagic (21%). Divya from Garhwal region, India identified hypertension (22%), previous Caesarean section (15%) and antepartum hemorrhage (11%) as the most frequent causes of referral.[7] A study conducted in Brunei[24] for inter-hospital referrals indicated hypertensive crises as the main cause of referral (18.5%). A study conducted by Kiranmai from Hyderabad; India reported that the majority of referrals (45%) were due to medical conditions complicating pregnancy.[3] A study conducted in Nepal also highlighted medical conditions as the major cause of referrals.[1] A study conducted by Ayesha et.al from Karachi identified prolonged labor and the previous cesarean section as the main reason for a referral from adjoining localities.[11] An audit conducted in KPK listed hypertensive crisis as the leading cause of referral[14].

During current study, death as the maternal outcome was seen in 12% of referred cases. Studies from India[3, 7, 8] reported the figure between null to 2-5 %. A study conducted in Ghana reported 44% deaths among the referred cases.[25] A national study reported 2.5% maternal deaths[11].

Intrauterine deaths and early neonatal deaths during current study accounted for a staggering 41%. Ayesha et.al reported 13% stillbirths and 41% neonatal deaths.[11] The study conducted in Nepal reported 15% intrauterine deaths.[1] Two deaths were observed in the inter-hospital referrals study conducted in Brunei.[24] Umesh et al., reported 5.3% neonatal deaths.[13]

In the present study, the factor related to poor governance which accounted for maximum referrals was the non-availability of blood for transfusion (31%). Whereas study conducted in India reported only 8% referrals due to non-availability of blood and obstetricians.[13] A study conducted in Nepal identified no perinatal facility and lack of trained staff as the reasons for referral other than the medical conditions.[1]

In current study cesarean section, almost 50% was the mode of delivery. A study conducted by Jyoti et al. from India reported 48% vaginal deliveries in referred cases[8]. Identical findings to that of our study were seen in the study conducted at Abbasi Shaheed Hospital Karachi where 53.5% of cases were delivered through Cesarean section[11].

The main strength of our study is its novelty as these kinds of studies are scarce from interior Sindh and the epidemiological data collected may help in identifying the gaps and improvising the services to the best level of care possible. Further studies are recommended with larger sample size to have a clear perspective of the actual needs of the target population.

Conclusion:

Eclampsia and hemorrhagic conditions are among the main reasons for referral; however increased number of cesarean sections and poor maternal and fetal outcome and early neonatal deaths suggest a lack of specialized care even in the referral centers that are required for monitoring the condition of mother and child.

Conflict Of Interest:

None

Ethics Approval / Disclosure:

Approval was taken from the Hospital administration prior to data collection.

Funding:

None.

Patient Consent:

Patients prior permission was taken and were informed that there data may be utilized for research purposes.

Availability of Data:

The collected data is available in Gynae/Obs Department Unit 1 of GMMMC Hospital,
Sukkur.

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