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PATTERN OF TERM OBSTETRIC EMERGENCIES REFERRED FROM HEALTH CENTERS TO RIMS

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ABSTRACT

Introduction: Lack of specialist services and transport facilities at the periphery further results in delayed referral to tertiary centers, thus increasing the foetal and maternal morbidity and mortality. The present study was undertaken in the Department of Obstetrics & Gynaecology, Regional Institute of Medical Sciences, Imphal to evaluate & analyze the pattern of referral with associated maternal and perinatal outcome of the term obstetric emergencies referred to RIMS hospital. **Aims & Objective:** To identify the pattern of Obstetric emergency case referral from health centers to RIMS hospital & to evaluate the outcome in these cases. **Results:** The study includes 153 cases of obstetric emergency referred to RIMS, giving a proportion of referral cases as 0.90%. 101 cases (66.01%) were referred from rural health centers. Maximum referral were from PHCs accounting 76.47% (n=117). Most of the patients utilized local transport to reach the hospital accounting 76.47% (n=117). The total number of births were 150, of which 92% were live births (n=138), still births were 1.33% (n=2), intrauterine deaths were 7.33% (n=11), neonatal deaths were 8.66% (n=13), giving a total perinatal mortality of 17.33%. NICU admission was done in 46 babies (due to birth asphyxia and septicaemia mainly). No maternal mortality recorded. **Conclusion:** After assessing the condition, it is the need of the hour to strengthen the peripheral health centers with specialists, improve transport facilities for better access to tertiary centers, to create awareness among rural population to avail them and develop attitude & will of the patients to go to the tertiary centre.

KEYWORDS: Safe motherhood, maternal mortality.

INTRODUCTION

An "OBSTETRIC EMERGENCY" is defined as an obstetric complication or situation of serious and often dangerous in nature, developing suddenly and unexpectedly and demanding immediate attention in order to save life.[1]

As per World Health Organization, ICD-10[2]: India has 22% of its population in child bearing age group (15- 45 years). So this makes it a vulnerable special group. Major risk group is that residing in rural places. The factors that influence the maternal mortality & morbidity profile in country includes place of residence (urban /rural), economic status, educational background.

In developed countries, the maternal mortality ratio (MMR) is 27 per 100,000 live births as compared to 480 in developing countries. The Maternal Mortality Ratio of India has declined from 254 deaths in 2004-2006 to 212 deaths in 2007-2009 and 178 deaths per 100,000 live births in 2012. The decline has been most significant in EAG States & Assam from 375 to 308.[3]

As per World Health Organization "Obstetrical Emergencies" are the leading causes of maternal mortality, particularly in developing countries due to lack of awareness, poverty, literacy, poor transport facilities, inadequate equipment/staffing. These all things combine to elaborate the problem.[4]

India is rich in its social, cultural, & geographical heritage. About 80% population still lives in rural areas. Disproportionate concentration of health services in urban areas & ineffective access of rural population to these services results in huge proportion of obstetric emergencies being referred to referral hospitals and institutions. Lack of specialist services and transport facilities at the periphery further results in delayed referral to tertiary centers, thus increasing the foetal and maternal morbidity and mortality. The present study was undertaken in the Department of Obstetrics & Gynaecology, Regional Institute of Medical Sciences, Imphal to evaluate & analyze the maternal and perinatal outcome of the term obstetric emergencies referred. The MMR according to 2011 census is 178 /100,000 live births. Manipur has MMR of 60- 80 per 100,000 live

births.

AIMS AND OBJECTIVE
- To identify the pattern of referral from health centers to RIMS hospital.
- To evaluate the maternal & perinatal outcomes.

MATERIAL AND METHOD
O STUDY DESIGN
- A Prospective Observational Study.

O STUDY DURATION
- Study was conducted during the period of November 2014 to September 2016.

O STUDY SETTING
- hospital based study
- Study in a tertiary hospital of Manipur (RIMS),
- Referral centre for all 9 districts of Manipur.

O STUDY POPULATION
- all pregnant women with obstetric emergencies
- at term in labour (both latent and active).

INCLUSION CRITERIA
- Referred cases to RIMS, Imphal.
- Obstetric emergencies.
- Gestational age >37 weeks.
- Established labour (both latent & active phases)
- Primigravida/multigravida.

EXCLUSION CRITERIA
- All antenatal patients with < 36 weeks of gestation.

- All booked patients at RIMS, Imphal.
- All patients with no obstetric emergencies.
- Surgical complications associated with pregnancy: acute appendicitis, acute cholecystitis, etc.
- Medical emergencies associated with pregnancy: hepatitis, heart failure, SLE, epilepsy, etc.

DATA COLLECTION
O Database software SPSS 21.0 VERSION.
O Analysis was carried out.
O Test of significance using Chi-square test was done and p value < 0.05 was considered significant.

ETHICAL APPROVAL
O Taken from Research & Ethics Board, RIMS.

RESULTS AND OBSERVATION
During study period from November 2014 to April 2016:
- Total number of deliveries: 16968.
- Term obstetric emergencies: 153
- Proportion of referral cases: 0.90%
(included only term obstetric emergencies)

Out of the 153 patients, youngest patient was 18 years old and the oldest was of 42 years. Maximum numbers of patients were in the age group 26-30 years (55 cases) followed by 44 cases in 21-25 years, 20 cases in 16-20 age group, 18 cases in 31-35 age group, 15 cases in 36-40 age group and 1 patient in more than 40 age group. The mean age of the study group was 26.96 and a standard deviation of 5.94.

TABLE 1a: AGE DISTRIBUTION

AGE GROUP	FREQUENCY	PERCENTAGE
16-20	20	13.07
21-25	44	28.75
26-30	55	35.94
31-35	18	11.76
36-40	15	9.80
40+	1	0.65
Total	153	100

TABLE 1b: AGE DISTRIBUTION

TOTAL CASES	MINIMUM AGE	MAXIMUM AGE	MEAN	STANDARD DEVIATION
153	18	42	26.96	±5.94
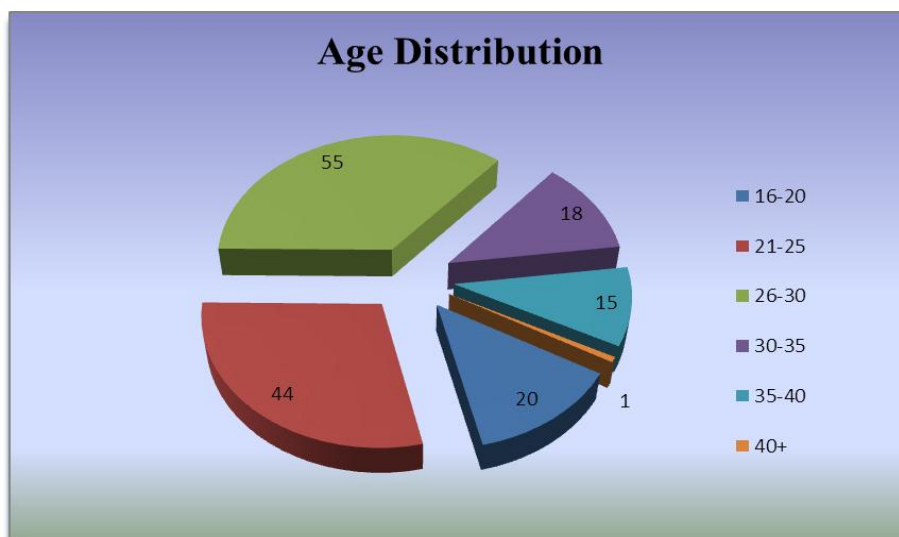
Age Distribution

Out of 153 patients, 77 patients (50.32%) were primigravida, 70 patients (45.75%) were multigravida and 6 (3.92%) were grand multipara.
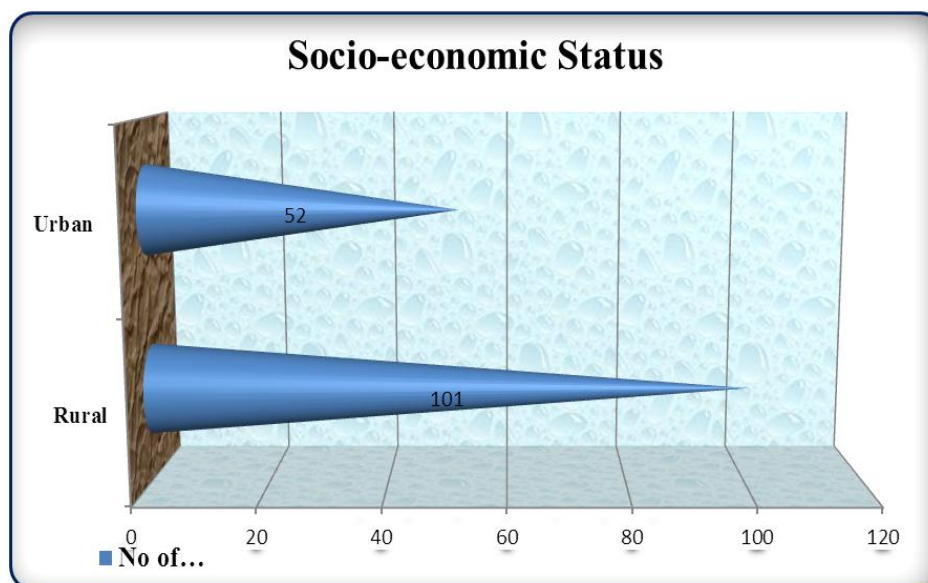
TABLE 2: PARITY DISTRIBUTION

PARITY	FREQUENCY	PERCENTAGE
P0	77	50.32
P1-P3	70	45.75
P4+	6	3.92
Total	153	100

Parity Distribution
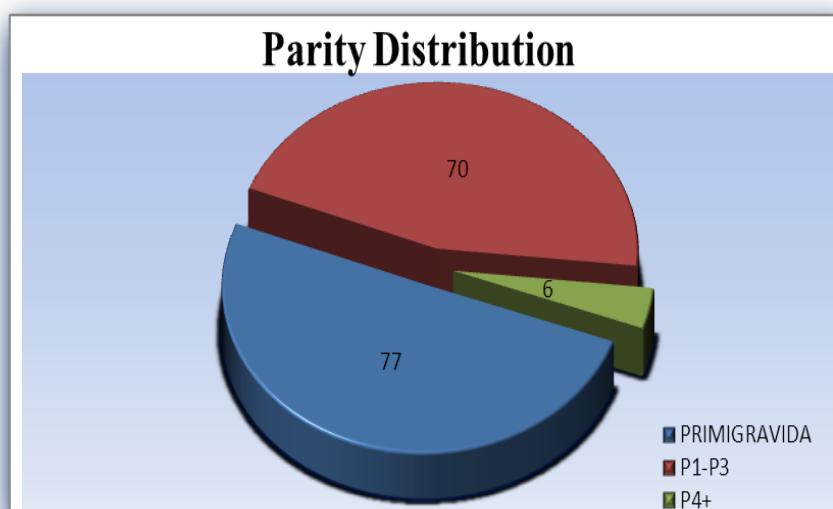
Most of the patients, 101 were from rural area accounting for approximately two-third of the cases.

TABLE 3: SOCIO ECONOMIC STATUS DISTRIBUTION

SOCIO-ECONOMIC STATUS	FREQUENCY	PERCENTAGE
Rural	101	66.01
Urban	52	33.98
Total	153	100

Out of the 153 referred cases, 117 cases (76.47%) were from PHCs, 23 cases (15.03%) were from CHCs and 13 cases (8.49%) were from district hospital.

TABLE 4: REFERRAL SECTOR DISTRIBUTION

REFERRAL SECTOR	FREQUENCY	PERCENTAGE
PHC	117	76.47
CHC	23	15.03
DISTRICT HOSPITAL	13	8.49
TOTAL	**153**	**100**
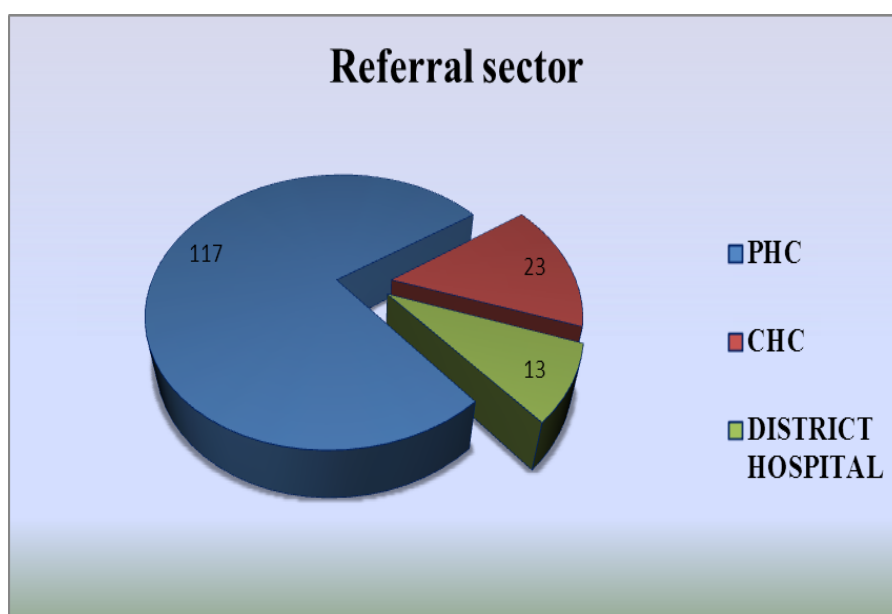
117 patients used local transport to reach the hospital whereas 36 patients used the service of ambulance.

TABLE 5: MODE OF TRANSPORT DISTRIBUTION

MODE OF TRANSPORT	FREQUENCY	PERCENTAGE
Local transport	117	76.47
Ambulance	36	23.52
Total	**153**	**100**
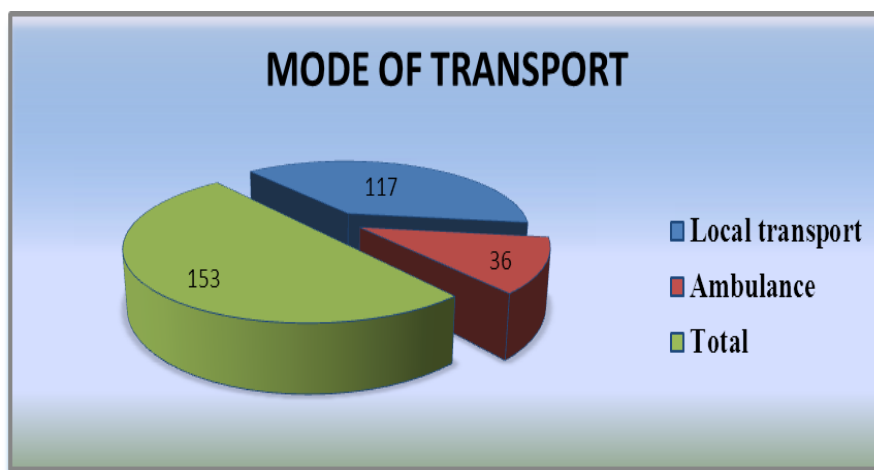
Minimum time taken to reach the referral centre from the parent place of consultation was 3 hours and the maximum time was 14 hours. The average time taken to reach the referral centre was 7.26 hours. Most of the patients (81 cases) reached within 6-10 hours of referral.

TABLE 6a: DISTRIBUTION OF TIME INTERVAL FROM REFERRAL TO HOSPITAL

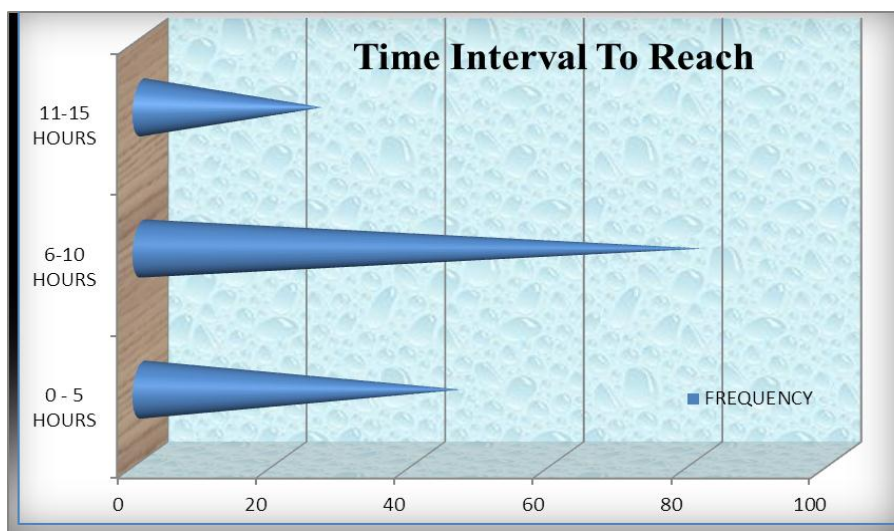| TIME INTERVAL	FREQUENCY	PERCENTAGE
0-5 HOURS	46	30.06
6-10 HOURS	81	52.94
11-15 HOURS	26	16.99
TOTAL	**153**	**100**

TABLE 6b: TIME INTERVAL FROM REFERRAL TO HOSPITAL AND SECTOR

		Time Interval From Referral Center To Rims Hospital			Total	p value
		<5 HRS	**6-10 HRS**	**11-15 HRS**		
SECTOR	**RURAL**	16	60	25	**101**	0.000
	URBAN	30	21	1	**52**	
Total		**46**	**81**	**26**	**153**	

DISCUSSION

- The present study was undertaken in the Department of Obstetrics & Gynaecology, Regional Institute of Medical Sciences, Imphal to evaluate & analyze the maternal and perinatal outcome of the term obstetric emergencies referred to our institute. During the study period from November 2014 to April 2016, there were 16968 total deliveries.

➢ The study includes 153 cases of obstetric emergency referrals to RIMS from nearby rural and urban areas during the same period.

➢ The proportion of referral cases to our tertiary care

institute was 0.90% of total deliveries which included only term obstetric emergencies.

AGE

- In the present study, out of 153 patients, the youngest patient was 18 years old and the oldest was of 42 years (Table 1b).
- Teenage pregnancies were 20, which give an idea about the high incidence of early marriages and child bearing in Imphal. One patient was 42 years old (Table 1a).
- **Gadhiali**[5] reported 79.2% cases between the age group of 15 – 25 years referred from rural areas.
- **Morsheda Banu et al** [6] in assessing the showed that overall age distribution in majority (74%) of the respondents were between 20-35 years
- **Limaye**[7] reported 89.2% cases between 15 – 30 years and 3.2% more than 35 years, while in our study maximum numbers of patients were between the age group of 26-30 years, accounting to 35.94% (55 cases).

PARITY

- In the present study, among the referral group there were:
- 50.32% nulliparous women (P_0), of which 41.83% were primigravidas,
- 45.75% multiparous (P_{1-3}) and,
- 3.92% grandmultiparous (Table 2).
- **Gadhiali** noted 44.8% primigravida, 42% multigravida and 13.2% grandmultigravida in her series.[5]
- **Morsheda Banu et al** had found that around 50% of the women were Primigravida.[6]

SOCIOECONOMIC STATUS

- The majority of the referred cases were from rural areas accounting 66.01% (101) cases, belonging to low socioeconomic status, while only 33.98% (52) cases were from urban areas (Table 3).
- Majority of them were poor and malnourished which complicated their course of pregnancy and puerperium.
- **Bhaskar Rao**[8] reported high incidence of home deliveries by untrained dais and midwives which is more in rural areas. This shows lack of health services in rural areas.
- **Limaye**[7] highlighted the poor maternal and foetal outcome due to improper management by untrained birth attendants in rural areas.

REFERRAL SECTOR

- Out of the 153 referred cases in present study:
- 117 cases (76.47%) were from PHCs,
- 23 cases (15.03%) were from CHCs and
- 13 cases (8.49%) were from district hospital (Table 4).
- Also, the present study shows that the time taken by patients to reach the hospital from rural areas was

more as compared to that from urban, which was found statistically significant (p value <0.05).
- Most of the cases were referred from PHC, showing the lack of adequate health services and health personnel in rural areas. In my study, 76.47% cases were referred from PHC which is same as **Mughal S et al** who reported 70% cases referred from PHC.[9]
- PHC received the cases that were handled by untrained dais, maibas, etc. So the cases referred from PHC were late and in more deteriorated condition.
- **Rajesh Kumar** also reported this barrier in his study.[10]

MODE OF TRANSPORT

- In present study, 117 (76.47%) patients utilized local transport to reach the hospital whereas 36 (23.52%) patients used the service of ambulance (Table 5). When faced with obstetric emergency necessitating referral, arranging a private vehicle takes time and costs money.
- Gupta PR et al[11] reported that majority of patients 69.34% utilized private vehicle to reach the referral center.
- Surbhi Sharma[12] found in her study that 94% arranged their own transport and type of transport used were bus, jeep, truck, tractor, motor cycle, bullock cart; while health, center provided hospital vehicle/ambulance in 6% cases only. In our study 76.47% patients used local transport & 23.52% patients used ambulance.
- **Gadhiali**[5] found that 63.2% patients arranged their own transport due to similar reasons of non availability of hospital ambulance.
- The developed countries have flying squad facilities for transport of obstetric cases. Such services are lacking which increase the maternal and perinatal morbidity and mortality in our country.

TIME INTERVAL FROM REFERRAL TO HOSPITAL

- In present study, the time taken to reach the referral centre from the parent place of consultation was as follows (Table 6a):
- Minimum time taken was 3 hours.
- Maximum time taken was 14 hours.
- The average time taken to reach the referral centre was 7.26 hours.
- Most of the patients (81 cases) reached within 6-10 hours of referral.
- Since majority of patients travelled within 6 – 10 hours, so adequate care was given & interventions were done.
- Gupta PR et al[11] reported that majority of patients (59.74%) arrived to the hospital within 8 hours of reference while it was 49% in the study done by Rathi et al.[13]
- Gupta also found that the patients who reported to hospital >12 hours of referral were 5.58% while Rathi found it to be 25%. They have to travel long

distances and sometimes it becomes very difficult to save the life of the patient.

🔸 Time interval of reference and reporting depends on:
- the availability of transport medium,
- distance between the parent and referral health care centre,
- patients and her relatives' attitude,
- awareness and socio-economic status.

➢ **Maitra, Govinda and Hazra[14]** studied the utilization of referral services for high risk cases at S.S.G. Hospital Baroda between 1988-1991. According to them, the reasons for delay in referral were self negligence of patient in 2.5 - 8.5%, intervention not available in 32.9 - 43.9%, transport problem in 14,6 -32.79%, reluctance of patient to go to larger hospital in 10.02% - 17.3% and remained undiagnosed in 8.4% - 26.4% cases. In their study patients' negligence formed a small group whereas the major causes were lack of equipments, anaesthetist and blood banking facilities.

➢ **Surbhi Sharma[12]** reported 13.5% cases having early and timely referral while 86.5% cases had delayed referral. The reasons for delay were patients' negligence in 64.5% cases, transport delay in 38.5% cases, health personnel's negligence, overconfidence, failure to diagnose in 35.5% cases, reluctance/fear of admission in a larger hospital in 14% and social and religious taboos in 16.5% and economic factor in 52% cases. Faulty referral to intermediate centres in 13.5% cases was also a main cause. Also the time taken for transport of referred cases was 1-5 hours in 87%, 6-10 hours in 6.5% and more than 10 hours in 6.5% cases. In many cases the delay was because of improper and poor condition of roads.

➢ In our study, 30.06% cases took 0 – 5 hours, 52.94% cases took 6 – 10 hours, and 16.99% cases took 11 – 15 hours to reach the hospital. Patients coming from rural sector took longer to reach the institution as compared to patients from urban sector (Table 6b) and the difference was found to be statistically significant.

CONCLUSION
- India is rich in its social, cultural, & geographical heritage.
- About 80% population still lives in rural areas.
- Disproportionately high density of health care centre in urban areas & inadequate access to health care centre among rural women
- Lack of specialist & transport facilities at periphery further results in delayed referral to tertiary centers
- Thus increasing the foetal and maternal morbidity and mortality.
- After assessing the condition, it is the need of the hour to:

- strengthen the peripheral health centers with specialists,
- improve transport facilities for better access to tertiary centers.
- create awareness among rural population to avail them,
- develop attitude and will of the patients to go to the tertiary centre.

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