

TABLE III

AFP levels in rural women from patients with threatened abortion who sustained

TO TERM

Serum AFP
Maternal
Week of
Gestation
Initial
Serial No.

A PROFILE OF MATERNITY CASES ADMITTED IN RURAL MATERNITY AND CHILD WELFARE CENTRES

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SUMMARY

A retrospective study of pregnant mothers admitted for delivery in Rural Maternity and Child Welfare centres of Kasturba Medical College, Manipal, Karnataka was carried out during the period December 1987 to November 1990. 79.5 percent of these women belonged to the safest reproductive age group. 10.8 percent were below 20 years and 9.7 percent constituted 30 or above age group. The referral among different age groups was not significant ($P>0.1$). Primies constituted 34.3 percent whereas 14.6 percent were grand multies. As expected referral was significantly high in cases of primies ($P<0.001$). 55 percent of the referred pregnant mothers were due to pathology of labour and 28.5 percent were due to pathology of pregnancy. 85.8 percent of the mothers had spontaneous or induced normal deliveries. 5.1 percent had caesarean section. The perinatal mortality and maternal mortality was 16.1 and 0.54 respectively.

Very low percent of teenage pregnancy, good antenatal care coupled with high percentage of institutional deliveries and adequate linkage in referral system with the apex hospital resulted in a highly favourable perinatal outcome.

INTRODUCTION

Maternal care is one of the important components of promotive health services offered to the most vulnerable group of the community. The National Health Policy adopted by the Government of India in 1982, recognized the high rates

of mortality affecting women and children. The policy identifies MCH services as deserving priority attention (S Ghosh 1990). A Task Force appointed by the Government has laid down the components of minimum perinatal care (Government of India, 1982). However, the services of achieving this goal is far lacking. The lack of effective functioning of vertical linkage between the primary, secondary and tertiary levels is one

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of the major weaknesses of our health care system (Singh and Paul 1988). Appropriate manpower and basic equipment are also essential at all levels of health care for effective functioning of the referral pyramid of health care infrastructure. Availability of telecommunication and road transport facilities will go a long way in improving the access of the community to the secondary and tertiary level of care (Singh and Paul 1988).

The present study was undertaken in the field practice area of Kasturba Medical College, Manipal, Karnataka with following aims and objectives.

1. to study the pregnancy outcome of women admitted for delivery in the Rural Maternity and Child Welfare Centres of Kasturba Medical College
2. to correlate the distribution with the age and parity of these mothers
3. to determine the causes and nature of management of cases referred to the apex hospital.

Availability of such information will be helpful in planning and management including referral of pregnant women in the rural areas.

MATERIAL AND METHODS

There are six Rural Maternity and Child Welfare (RMCW) centres with inpatient facilities for intranatal and postnatal care in the field practice area of Kasturba Medical College (KMC), Manipal in Karnataka State, covering approximately 65,000 population. Each centre is managed by a nurse-midwife. There is a good network of roads and the centres are equipped with telephone facilities. The distance of these centres ranges from 5 to 15 km from the medical college. Weekly MCH clinics are conducted herewith the provision of specialist services. Normal deliveries are conducted by the Nurse-midwife and difficult cases are attended by postgraduate trainees from the K.M.C. Hospital on receiving intimation. Further complications which require referral are advised accordingly by the attending postgraduate trainees. Antenatal services are availed by more than 95 percent of

pregnant mothers in this area.

All the six RMCW centres were included for the purpose of this study. Information pertaining to pregnant women who were admitted and delivered in these centres in last three years (December 1987 to November 1990) were collected from the available records.

OBSERVATIONS

A total of 3,890 pregnant women were admitted from 1st December 1987 to 30th November 1990. 3,127 (80.4 percent) were delivered in these centres; 74.8 percent experienced normal deliveries, and 5.6 percent needed further intervention at the centre itself. The remaining 763 (19.6 percent) needed referral; 14.8 percent were admitted at Kasturba Medical College Hospital and 4.8 percent got admitted to other hospitals like State Government Hospital, private nursing homes etc. Data for these 4.8 percent were not available for further analysis. However, it was expected that the outcome and nature of management might have been same as for those who were admitted at Kasturba Medical College Hospital, Manipal (Table I).

From Table II, it will be seen that out of the 3702 pregnant women admitted at RMCW centres, 10.8 percent were teenage mothers, 9.7 percent belonged to the age group of 30 years and above and the safest reproductive age group constituted 79.5 percent of the total.

Similar lower percentage of delivery by teenage mothers were also observed (9.9 percent) in Pune (Pratinidhi et al, 1991) and 9.3 percent in Simla (Randhwa I, et al, 1985). It is as low as 3.72 percent in Goa (Kamat G.H., et al, 1989). However, in a hospital in Pune 68.7 percent were teenagers delivering their first baby (Pawar S, 1987). Raystone and Armstrong (1989) opined that though years 20-30 are the safest period of woman's life for child bearing, 10-20 percent of babies born in developing countries are to women in their teens.

From Table II, it is also seen that the referral were higher in the age group below 20 years as

TABLE I

Outcome of pregnancies for cases admitted at
six RMCW centres of Kasturba Medical College

Year	Delivered in RMCW		Referred to		Total
	Normal	Complicated	KMC Hospital	Other Hospital	
1987	70	1	17	4	92
(Dec.)	(76.1)	(1.1)	(18.5)	(4.3)	(100.0)
1988	1033	76	151	67	1327
	(77.8)	(5.7)	(11.4)	(5.1)	(100.0)
1989	988	81	211	30	1310
	(75.4)	(6.2)	(16.1)	(2.3)	(100.0)
1990	820	58	196	87	1161
Upto Nov.	(70.6)	(5.0)	(16.9)	(7.5)	(100.0)
Total	2911	216	575	188	3890
	(74.8)	(5.6)	(14.8)	(4.8)	(100.0)

Figures in parentheses indicates percentage

TABLE II

Age of pregnant women admitted
for delivery at RMCW centres

Place of delivery	Age of pregnant women (in yrs)			Total
	<20	20-29	>30	
RMCW Centre	323	2500	304	3127
	(80.9)	(84.9)	(84.9)	(84.4)
KMC Hospital (Referral cases)	76*	445	54	575
	(19.1)	(15.1)	(15.1)	(15.6)
Total	399	2945	358	3702
	(100)	(100)	(100)	
Total percent	10.8	79.5	9.7	100.0

Figures in parentheses indicate percentage

*Age and referral $X^2 = 4.213$, $df = 2$, $p > 0.1$

expected. But the difference were not statistically significant ($P>0.1$). The lower percentage of deliveries in teenaged mothers was due to higher age at marriage as was observed in previous studies (Kamat G.H., 1989).

Similar observation can also be made from Table III where the referral was maximum in primiparous women (28.2 percent). The percentage of referral remained almost constant thereafter. This difference is found to be statistically significant ($P<0.001$).

On further analysis of 216 women having complications but could be delivered at rural centre by the trainee obstetrician on call, we find that PPH and prolonged second stage constituted 42 and 31 percent of them respectively (Table IV).

Table V shows the nature of complications requiring referral of Kasturba Hospital. 55 percent were due to pathology of labour which includes prolonged pregnancy, cephalopelvic

disproportion, premature rupture of membrane, malpresentations etc. 28.5 percent were due to pathology of pregnancy which includes pregnancy induced hypertension, diabetes, anaemia, antepartum haemorrhage etc. These were followed by previous surgical intervention like cesarean section (10.1 percent) and other high risk conditions like short stature, elderly primi etc. (6.4 percent).

On analysing the nature of management, it is observed that 85.8 percent had experienced spontaneous/induced vaginal deliveries, 5.1 percent were delivered by cesarean section and 2.4 percent by instrumental intervention (Table VI). It is also of interest to observe that of the cases referred to Kasturba Hospital 45.9 percent delivered spontaneously with or without induction. This may be attributed to the cautious approach of the trainee obstetricians.

Indira Randhwa (Randhwa & Dutta 1985) have reported 15.7 percent instrumental deliver-

TABLE III
Parity wise distribution of pregnant women

Place of delivery	Parity				Total
	Primi	II	III	IV	
RMCW Home	910 (71.8)	1043 (89.8)	676 (92.6)	498 (91.9)	3127 (84.5)
KMC Hospital	358* (28.2)	119 (10.2)	54 (7.4)	44 (8.1)	575 (15.5)
Total	1268 (100)	1162 (100)	730 (100)	542 (100)	3702 (100)
Total percent	34.3	31.4	19.7	14.6	100.0

Figures in parentheses indicate percentage

* Parity and referral $\chi^2 = 240,243$, $df=3$,
 $p < 0.001$.

TABLE IV
Nature of complications managed at RMCW centres

Nature of complications	Number	Percentage
Post partum haemorrhage	91	42.1
Prolonged second stage	67	31.0
Breech presentation	30	13.9
Preterm labour	28	13.0
Total	216	100.0

TABLE V
Nature of complications needing referral to apex hospital

Nature of complications	Number	Percentage
Pathology of labour	316	55.0
Pathology of pregnancy	164	28.5
Previous obstetrical operation	58	10.1
Other high risk conditions	37	6.4
Total	575	100.0

TABLE VI
Nature of management

Nature of management	Place of delivery		Total
	RMCW Centres	KMC Hospital	
Normal vaginal delivery (Spontaneous/induced)	2911 (93.1)	264 (45.9)	3175 (85.8)
Cesarean section	--	187 (32.5)	187 (5.1)
Instrumental	--	91 (15.8)	91 (2.4)
Others	216 (6.9)	33 (5.8)	249 (6.7)
Total	3127 (100)	575 (100)	3702 (100)

TABLE VII
Outcome of pregnancy

Place of delivery	Total births	Still births		Early neonatal loss		Perinatal loss	
		No.	Rate/1000	No.	Rate/1000	No.	Rate/1000
RMCW centres	3127	17	5.4	5	1.6	22	7.1
KMC hospital	575	22	38.3	15	27.1	37	66.9
Total	3702	39	10.5	20	5.5	59	16.1

ics and 10.1 percent cesarean sections in their study. It was 5.8 percent and 10.2 percent respectively as reported by Bhavasar (Bhavasar et al, 1989). In their study spontaneous delivery was 80.2 percent. Amit Sengupta et al found 5.6 percent LSCS in their study which is similar to the present study (Sengupta and Gode 1987).

Table VII shows the outcome of pregnancy in terms of late fetal and early neonatal loss. The total perinatal loss was 59 during the study period of which 37 were in KMC Hospital and 22 were in rural centres. This high figure of perinatal loss in KMC Hospital was due to referral of risk pregnancies to this hospital from RMCW Centres.

The perinatal mortality rate was observed to be 16.1 per 1000 live births. Early neonatal death and still birth rate were found out to be 5.5 and 10.5 per thousand births respectively. These rates compares favourably with that of developed countries, e.g., USA 17, and as less as 9 in Japan (Venkatesh 1988).

There were only two maternal deaths out of the total deliveries, the rate being 0.54 per thousand live births in the present study.

In India 90 percent of deliveries take place outside the health establishments and are conducted mostly by untrained birth attendants (Lecdam 1985). Neonatal death in India is 50-60 per 1000 live births (Rhode 1990) and perinatal mortality is 67 per 1000 live birth (Venkatesh 1988). Early neonatal deaths account for one fourth of infant deaths and a similar number of infants are still born (Venkatesh 1988). Kerala,

Himachal Pradesh and Goa recorded perinatal mortality rate and neonatal mortality rate of 30 or less, whereas it was above 60 in Assam, Rajasthan and Madhya Pradesh (National Workshop, 1989). The present study when compared to above, shows a better achievement in terms of preventing perinatal loss.

CONCLUSION

The present study was carried out in the field practice area of a medical college located in rural area of Karnataka. Two important antenatal factors like, very low percentage of teenaged pregnancy and nearly hundred percent antenatal care coupled with higher percentage of institutional deliveries and adequate linkage in referral system with the apex hospital resulted in lowering the perinatal mortality and maternal mortality to a level comparable to that of the developed countries. The number of referral cases was on the higher side due to cautious approach of the trainee postgraduates.

Maternal health and child health are interlinked and dependant on each other. Adequate perinatal care has shown encouraging results in reducing not only the maternal morbidity and mortality, but also infant mortality. Intervention for improving the health status of the children and reducing morbidity and mortality rates are inseparable from services designed to meet similar needs in women (Planning Commission, Government of India, 1990-1995). Developing adequate infrastructure, ensuring reasonable quality of expertise among the health care function-

aries, effective functioning of referral pyramid and improving the penetration of services into the community within the existing constraints of resources in a cost effective manner will help the country to tide over the difficulties to achieve the goal "Health for All by 2000 A.D."

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CONCLUSION

The present study was carried out in the field practice area of a medical college located in rural area of Karnataka. Two important associated factors like very low percentage of teenage pregnancy and nearly balanced sex ratio were noted. The study also revealed that the perinatal mortality and neonatal mortality in the present study were higher than that of the developed countries. The number of retained cases was on the higher side due to cautious approach of the trained postpartum.

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