

## Utilization of antenatal care and its fetomaternal outcome in urban v/s rural at tertiary care centre: a comparative study

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### Abstract

**Objectives:** To find out the various risk factors responsible for the high maternal morbidity and mortality and poor perinatal outcome in rural obstetrics cases and to compare them with urban counterparts and also plan to suggest preventive and social measures to reduce maternal and perinatal morbidity and mortality by improving health services, infrastructure and referral system.

**Materials and Method:** In this prospective comparative study 200 patients admitted in Obst & Gynae department of unaided hospital after 28 weeks of gestations from rural and urban populations & studied till child birth and early puerperium from Jan 2016 to Dec 2016.

**Results:** In our study maximum number of patients in both rural and urban groups were in age group of 20-30 years. Among postpartum complications in rural group, PPH accounts for 06%, post-partum eclampsia 01%, pyrexia 03%, pelvic hematoma in 01%, episiotomy gaping in 01% & in LSCS delayed wound healing was 07% while in urban group PPH 1%, pyrexia 01%, post LSCS delayed wound healing was 04%. Blood was transfused in 13 patients in rural group and in 04 patients in urban group. Incidence of birth asphyxia was 10.78% in rural as compared to 04% in urban group.

**Conclusions:** we concluded that rural women had an elevated risk of complications during & after pregnancy and that better utilization of maternal health care, especially for delivery, reduces adverse maternal and perinatal outcome.

**Keywords:** ANC, Perinatal, Maternal, Asphyxia, Health institution.

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### Introduction

All pregnancies & deliveries are potentially at risk but in some conditions mother and fetus are more vulnerable to high maternal & perinatal morbidity and mortality so it is essential to study the risk factors associated with them.<sup>(1)</sup> Most pregnancy complications can be prevented if good quality antenatal, natal & postnatal care provided & certain harmful birth practices are avoided.<sup>(2,3)</sup> India has about 20% of all maternal deaths in world<sup>(4)</sup> & for every maternal death at least 15 more suffer from severe morbidities such as incontinence, dyspareunia, sheehan syndrome, uterine prolapsed and infertility due to unhygienic practices of delivery.<sup>(3)</sup> There may be two fold high complications related to pregnancy in the rural than urban areas due to early child birth, high parity, less birth interval, big family size, poverty, malnutrition, shortage of health personnel or health facilities, low status of women in society, low literacy rate & lack of awareness poor communications and transport facilities, social customs prevent them from taking antenatal care even if services are available. In urban cases late marriage, elderly primigravida, previous caesarean section, PIH, diabetes mellitus obesity are associated. So that early identification of risk factors and their timely management reduces the maternal and perinatal mortality and morbidity.<sup>(3,5)</sup> Indian and state government launched the many programmes like RCH (Reproductive And Child Health Programmes like

JSY (Jannani Suraksha Yojna), JSSK, JUNE 2011, Vandemataram scheme, EmOC (Emergency Obstetric Care), 2010, EOC (Emergency Operation Centre), OJAS (Online JSY And Subhlaxmi Yojna), Kushal Mangal Karyakaram & Twelve-by-twelve initiative for anemia control (23 April 2007) to increase institutional births, and skilled birth attendants at birth.

### Materials and Method

It was a randomized prospective comparative study over a period of one year from Jan 2016 to Dec 2016. Total 200 patients taken equally from rural and urban cases (100 from each) after complication of 28 weeks of gestation admitted in obst & gynae department of Unaided Hospital, Dr. S N Medical Jodhpur and studied till child birth and early puerperium. At the time of admission subjects detailed history regarding age, gravida, parity, duration of marriage, periods of gestation, LMP, EDD, chief complains for which she was admitted, any pregnancy related complications (PIH, APH, Preterm labour, PROM) and any medical illness complicating present pregnancy (DM, Hypertension, renal disease, TB), history regarding past pregnancy taken, immunization status, nature mode of delivery and postpartum complications, drug history and history of blood transfusion.

General physical examination, all routine antenatal investigations, per abdomen examination 7 per vaginal examination were noted. Course of labour, mode of

delivery and outcome of labour was noted, any intrapartum, postpartum complication and its management were recorded. In newborn sex, Apgar score, weight, congenital anomalies, type of resuscitation if required were noted. Mother and new born were followed till discharge from hospital.

**Results**

**Table 1: Demographic profile of cases**

	Rural	%	Urban	%
<b>Age</b>				
<20 years	12	12%	08	08%
20-30	77	77%	86	86%
>30	11	11%	06	06%
<b>Parity</b>				
0	41	41%	49	49%
1-3	43	43%	47	47%
>3	16	16%	04	04%
<b>Immunization status</b>				
Adequate	91	91%	94	94%
Inadequate	09	09%	06	06%
<b>Antenatal Care</b>				
Adequate	39	39%	79	79%
Inadequate	61	61%	21	21%
<b>Bad obstetrics history</b>				
Present	17	17%	09	09%
Absent	83	83%	91	91%

**Table 2: Incidence of high risk cases among rural & urban mothers**

Risk factors	Rural	%	No. of patients Urban	%
1. Elderly primigravida	00	00%	02	02%
2. Grand multipara	10	10%	02	02%
3. Treated for infertility	01	01%	04	04%
4. Previous LSCS	03	03%	07	07%
5. Obesity	00	00%	04	04%

**Table 3: Incidence of antepartum maternal complications or morbidity among rural & urban mothers**

Antepartum complications	Rural	%	Urban	%
PIH	06	06%	11	11%
Eclampsia	02	02%	00	00%
Placenta praevia	02	02%	01	01%
Abruptio placentae	03	03%	00	00%
Anaemia	86	86%	74	74%
Severe anemia	07	07%	01	01%

**Table 4: Incidence of postpartum complications or morbidities AMONF rural & urban mothers**

Postpartum complications	Rural	Percentage	Urban	Percentage
Eclampsia	01	01	00	00
PPH	06	06	01	01
Pyrexia	03	03	01	01
Pelvic hematoma	01	01	01	01
Episiotomy gaping	01	01	00	00
post LSCS delayed wound healing	07	07	04	04
Blood transfusion	13	13	04	04

**Table 5: Mode of delivery among rural and urban cases**

Mode of delivery	Rural	%	Urban	%
Normal delivery	71	71%	75	75%
Forceps delivery	04	04%	01	01%
Breech delivery	02	02%	00	00%
Twin delivery	02	02%	00	00%
LSCS	21	21%	24	24%
Elective	03	03%	12	12%
Emergency	18	18%	12	12%

**Table 6: Incidence of neonatal complications among rural and urban cases**

Neonatal complications	Rural	Percentage	Urban	Percentage
Birth asphyxia	11	11%	04	04%
ICH/IVH	01	01%	00	00%
Septicemia /Infections /RDS /Fever	24	24%	08	08%
Congenital malformations	02	02%	03	03%
Preterm/ low birth	32	32%	22	22%

Table 1 shows that maximum number of patients in both rural and urban groups were in age group of 20-30 years. Teen age pregnancy were 12% in rural & 08% in urban group and women >30 years were 11% & 06% in rural and urban group. Patients having parity >3 is more in rural (16%, out of which 10 were grand multipara) than urban group (04%, out of which 02 was grand multipara). 91% of rural patients were adequately immunized versus 94% in urban group. 79% of urban patients received adequate ANC while in rural

population only 39% received ANC. Bad obstetrics history was in 17% of rural & 09% of urban patients.

Table 2 shows that No of elderly primigravida & grand multipara are 00% & 10% in rural group as compared to 02% & 04% in urban group. There is also marked difference among patients treated for infertility, previous LSCS & with obesity all are more in urban patients. Table 3 shows incidence of various complications, in rural group anemia accounted for 86% (sever anaemia 7%), hypertensive disorders in 08% cases & APH in 06%. In urban group anaemia in 74% (sever anaemia 1%), hypertensive disorders in 11%, APH in 01%.

Table 4 shows that among postpartum complications in rural group, PPH accounts for 06%, post-partum eclampsia 01%, pyrexia 03%, pelvic hematoma in 01%, episiotomy gaping in 01% & in LSCS delayed wound healing was 07% while in urban group PPH 1%, pyrexia 01%, post LSCS delayed wound healing was 04%. Blood was transfused in 13 patients in rural group and in 04 patients in urban group. Table 5 shows that incidence of forceps delivers was 04% & 01 respectively in both rural and urban group, LSCS were done in 21% in rural and 24% in urban group, emergency LSCS were 86% in rural while in urban 50%. There were two twin deliveries and two assisted breech delivers in rural group. In rural group 71 patients delivered normally as compared to 75% in urban group.

Table 6 incidence of birth asphyxia was 10.78% in rural as compared to 04% in urban group, incidence of septicemia /RDS/ infections was 23.52% in rural and 08.00% in urban group & incidence of congenital malformations was 1.96% in rural & 03.00% in urban group. In rural LBW were 31.37% whereas in urban it was only 22%.

## Discussion

High maternal and perinatal mortality reflects not only inadequacy of health care services for mothers and infants, but also a low standard of living and socio-economic status of community as showed in Table 1 teenage mothers and maternal age >30 both are high in rural group and also major risk factors for poor obstetric outcome.<sup>(8,9,10)</sup> Incidence of grand multipara women have fallen in both groups but still high in rural cases.<sup>(21)</sup> Antenatal care also showed significant differences between rural and urban groups. 39% of rural & 79% of urban patients received adequate ANC, Studies show that the early reporting of pregnancy & adequate antenatal care is still very low particularly in rural areas as compared to urban areas.<sup>(10,15)</sup> In rural patients high incidence of home delivers & dai handling is associated with high incidence of BOH 17% as compared to urban 09%.<sup>(3,16)</sup>

The no. of elderly primigravida is rising particularly in urban population due to life style changes, late marriages, high career orientation,

postponement of pregnancy other studies shows similar results.<sup>(5,11,12,13)</sup> Antepartum complications in rural group, anaemia accounted for 86% cases & APH in 06%. Two rural patients developed eclampsia. On the other hand, in urban group anaemia was present in 74% (severe anaemia 1%) followed by hypertensive disorders in 11%, and APH was seen in 01%. Other studies also shows the similar results.<sup>(7,17,18)</sup> Postpartum complication in rural group are more, PPH 06%, pyrexia 03%, pelvic haematoma in 01% post LSCS delayed wound healing for 07%, in rural cases high incidence of prolonged & obstructed labour is associated with high parity, dai handling, injudicious use of oxytocin, poor referral & transport system.<sup>(3,7)</sup> In urban group PPH accounts for 1% and pyrexia 01%, post LSCS delayed wound healing accounts for 04%. Blood was transfused in 13 patients in rural group & in 04 patients in urban group. LSCS were done in 21% in rural & 24% in urban cases. There were two twin deliveries and two assisted breech deliveries in rural group. The incidence of forceps delivery is high in rural patients than urban patients whereas incidence of LSCS is slightly more in urban patients.

Incidence of low birth weight babies among rural group is 31.37% while in urban it was only 22%. Studies also reveal similar incidence.<sup>(19,20,21)</sup> It is high incidence in rural babies can be related to lack of adequate ANC, the mothers nutrition and health over a long period of time. In rural incidence of birth asphyxia was 10.78% as compared to 04.00% in urban group, incidence of septicemia / RDS / infections was 23.52% in rural & 08.00% in urban group. ICH/IVH developed in one neonate in rural group. Other studies also show similar results.<sup>(2,6,19)</sup>

## Conclusion

In the light of data observed from our study, we concluded that rural women had an elevated risk of complications during & after pregnancy and that better utilization of maternal health care, especially for delivery, reduces adverse maternal and perinatal outcome. A good quality ANC must be taken at health facility having concerned specialty for medical disorders associated with higher age. Increasing the incidence of institutional deliveries by effective implementation of JSY, JSSK & others programs & involvement of local leaders & community participation by effective information, education and communication to increase awareness for health facilities among masses.

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