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To evaluate the maternal outcome in non-obstetric morbidities in pregnancy at tertiary hospital in western Rajasthan

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Abstract
Background: To study the effect of non-obstetric morbidities on maternal outcome.
Methods: Present study was conducted on 150 pregnant females with non-obstetric morbidities, admitted in department ofobstetric and gynaecology at P.B.M. and associated group of Hospitals, attached to Sardar Patel Medical College, Bikaner during the period of one year (October 2019 to September 2020).
Results: 2 (1.33%) maternal mortality was due to jaundice and 1(0.67%) maternal mortality was due to RHD. No maternal mortality in other disease the difference was statistically significant (p value =0.001).
Conclusion: Non-obstetric complications are not uncommon; although of lesser frequency than obstetric complications, the proportionate mortality was higher. Hence, while addressing individual, economic, social, Cultural and health facility challenges; complication-readiness and collaborative care should be Prioritised to improve outcome.

Keywords: maternal, non-obstetric, complications

Introduction

All pregnancies are at risk even though most of the pregnancies and childbirth worldwide are uneventful. Almost 15% of all the pregnant women can develop potentially life-threatening non obstetric complications which might require skilled care with some requiring major intervention for survival [1]. Complications can occur anytime during the course of the pregnancy and childbirth, which in turn can affect health and overall survival of mother and fetus [2]. World Health Organization has reported that almost 830 women die daily as a result of complications during antenatal period and child birth. Medical complications such as cardiac conditions, diabetes complicating or complicated by pregnancy, liver and renal disorders, epilepsy, respiratory diseases, maternal infections (bacterial, viral etc) and malignancy are the reasons of maternal and fetal morbidity in India [3]. Due to limited study, there is a need to study the maternal and fetal outcome in non-obstetric morbidities in pregnancy.

Materials and Methods

1. **Study Design:** Prospective hospital based study
2. **Study Place:** Department of Obstetrics and Gynaecology, PBM and associated group of hospitals, attached to Sardar Patel Medical College, Bikaner.
3. **Study Duration:** One year (October 2019 to September 2020)
4. **Study Population:** All pregnant female with non-obstetric morbidities admitted in Department of Obstetrics and Gynaecology, PBM and associated group of hospitals, attached to Sardar Patel Medical College, Bikaner.
5. **Sampling Technique:** Consecutive sampling
6. **Sample Size:** All pregnant female with non-obstetric complications admitted in wards of Obs, and Gynae department, PBM hospital, during study period or minimum 150 cases were included in study.

Inclusion Criteria

1. Willing to participate.
2. Pregnant female with non-obstetric diseases like hypothyroidism, overt DM, hepatitis-B, rheumatic heart diseases, epilepsy, asthma, HIV, syphilis, jaundice, dengue, polio, beta thalassemia (heterozygous) and etc.

Exclusion Criteria

1. Not willing to participate.
2. Obstetric cause of morbidity.

Data Collection and Analysis

After obtaining permission from institute ethical committee and informed written consent of study population selected through analyzing inclusion and exclusion criteria and with help of consecutive sampling, the questionnaire was administered to study subjects. All relevant information related to study subject's socio demographic details, anthropometry were collected. General physical examination and local examination was done. Routine blood tests like CBC, BT, CT, ABO Rh, LFT, RFT, thyroid profile, urine complete / microscopy, viral markers other disease specific investigations like ECG, 2D-echo for heart disease, cogaulation profile for liver disease particularly related to morbid condition were carried out. Maternal outcome were followed and all data were collected.

These data were entered into Microsoft Excel and analysed with help of appropriate SPSS software and tests of significance considering level of significance as $p<0.05$.

Observations

Table 1: Distribution of cases according to general characteristic

Mean age	**26.25±5.00 Yrs**
Illiterate: Literate	93: 57
Booked: Unbooked	83: 67
Rural: urban	89: 61
SES(Upper: Middle: Lower)	29:97:24
BMI in kg/mt^2	23.60±4.35
Vaginal delivery: LSCS	89: 51

Table no. 1 shows that out of 150 patients, maximum number of patients 137 (91.33%) belong to age group of 20- 35 years followed by > 35years 10(6.67%) and minimum number 3 (2%) patients were < 20 years age group. Mean age was 26.25 years with SD 5.00. Maximum number of patients 93(62%) were illiterate and 57 (38%) patients were literate. 83 (55.33%) patients were booked and 67 (44.67%) patients were unbooked. 89 (59.33%) patients belonged to rural areas and 61 (40.67%) patients belonged to Urban areas. Maximum number of patients 69 (46.00%) belonged to upper middle class followed by upper class 29 (19.33%), lower middle class 28 (18.67%), upper lower class 15 (10%) and minimum number of patients 9 (6.00%) belonged to lower class. Mean BMI value was 23.60 with SD4.35. 89 (63.67%) women delivered vaginally and 51 (36.43%) women delivered by caesarean section (LSCS).

Table 2: Distribution of cases according to non-obstetric morbidities and mode of delivery

Diseases	**No. of Cases**	**Mode of Delivery**			
		LSCS		**Vaginal**	
		No.	**%**	**No.**	**%**
Hypothyroidism	51	21	41.18	27	52.94
Overt DM	27	16	59.26	11	40.74
Hepatitis-B	16	2	12.50	14	87.50
RHD	12	4	33.33	5	41.67
Epilepsy	9	0	0.00	7	77.78
Asthma	7	2	28.57	5	71.43
seropositive (HIV)	7	1	14.29	6	85.71
Syphilis	4	1	25.00	3	75.00
Jaundice	3	1	33.33	2	66.67
Dengue	2	1	50.00	1	50.00
Polio	2	0	0.00	2	100.00
Beta thalassemia (heterozygous)	1	0	0.00	1	100.00
Biopolar disorder	1	0	0.00	1	100.00
CA breast (T4BN2M2)	1	0	0.00	0	0.00
Chronic kidney disease	1	0	0.00	1	100.00
Hemiparesis stroke	1	1	100.00	0	0.00
Rheumatoid arthritis	1	0	0.00	0	0.00
SLE	1	0	0.00	1	100.00
Rubella infection	1	0	0.00	1	100.00
Toxoplasma infection	1	0	0.00	1	100.00
Tuberculosis	1	1	100.00	0	0.00
Total	150	51	34.00	89	59.33

Table no. 2 shows that out of 150 patients, 89 (63.67%) women delivered vaginally and 51 (36.43%) women delivered by caesarean section (LSCS).Out of 51 LSCS deliveries, maximum 21 (41.17%) cases had hypothyroidism whereas minimum 1 (1.96%) case was of seropositive (HIV), syphilis, jaundice, dengue, hemiparesis stroke, tuberculosis each.

Out of 89 vaginal deliveries, maximum 27 (30.34%) cases had hypothyroidism whereas minimum 1 (1.12%) case had dengue, beta thalassemia (heterozygous), biopolar disorder, chronic kidney disease, SLE, rubella infection, toxoplasma infection each.

Table 3: Distribution of cases according to maternal outcome

Maternal Outcome	**Number**	**Percentage (%)**
Mortality	3	2.00
Patient's condition remains same not affected by pregnancy	147	98.00
Total	150	100.00

Table 3 shows that out of 150 patients, maternal mortality was in 3 (2.00%) patients, 147 (98.00%) patient's condition remain same and not affected by pregnancy.

Table 4: Distribution of cases according to non-obstetric morbidities and maternal outcome

	No. of cases	Maternal Mortality	Patient's condition remain same
Hypothyroidism	52	0	52
Overt DM	27	0	27
Hepatitis-B	16	0	16
RHD	12	1	11
Epilepsy	9	0	9
Asthma	7	0	7
seropositive (HIV)	7	0	7
Syphilis	4	0	4
Jaundice	3	2	1
Dengue	2	0	2
Polio	2	0	2
Beta thalassemia (heterozygous)	1	0	1
Biopolar disorder	1	0	1
CA breast (T4BN2M2)	1	0	1
Chronic kidney disease	1	0	1
Hemiparesis stroke	1	0	1
Rheumatoid arthritis	1	0	1
SLE	1	0	1
Rubella infection	1	0	1
Toxoplasma infection	1	0	1
Tuberculosis	1	0	1
Total	150	3	147
p value	0.001		

Table no. 4 shows that out of 150 patients, 2 (1.33%) maternal mortality was due to jaundice and 1(0.67%) maternal mortality was due to RHD. No maternal mortality in other disease the difference was statistically significant (p value =0.001).

Discussion

Present study was conducted on 150 pregnant females with non-obstetric morbidities, admitted in department of Obstetric and gynaecology at P.B.M. and associated group of Hospitals, attached to Sardar Patel Medical College, Bikaner during the period of one year (October 2019 to September 2020).

In our study, Out of 16 Hepatitis B patients 2 (12.5%) had LSCS and 14 (87.5%) were delivered vaginally whereas *Iqbal et al.* [4] (2020) found that 49 (37.69%) patients had vaginal delivery and 74 (56.92%) had caesarean section. Also *Bajema et al.*[5] (2018) found in their study thatin a low-burden setting in the United States, hepatitis B infection was not associated with adverse pregnancy outcomes.

In our study out of 150 patients, 16 (10.67%) patients had hepatitis B. *Iqbal et al.* [4] (2020) they found that 0.97% pregnant women infected with hepatitis during pregnancy.

In our study out of 150 patients, 12 (8%) were RHDpatients, out of them 5 (41.66%) had vaginal delivery and LSCS was done in 4 (33.33%) patients. Similarly *Mazhar et al.* [6] (2005) found in their study that (76.2%) patients achieved spontaneous vertex delivery, LSCS was performed in 4 (9.5%) patients. Out of 12 RHDpatients 3 (25%) had abortions and 1 (8.33%) had still birth, whereas *Mazhar et al.* [6] (2005) found that 2 (4.8%) women had spontaneous expulsions of dead fetus and 2 (4.8%) had suction and curettage for therapeutic termination of pregnancy on medical grounds. Out of 12 RHD patients 4 (33.33%) had preterm birth, 3 (25%) had abortions and 5 (41.66%) had term delivery. Similarly *Lin et al.* [7] (2000) found the incidence of premature delivery was higher in women with RHD. Also *Linget al* [8]. (2007) There were 9 cases of abortion medically (18.9%, 9/65), 18 of preterm labor medically (28%, 18/65) which all happened in groups of NYHA class III and IV.

In our study out of 150 patients, among 9 epileptic patients 7 (77.77%) had completed pregnancy and had vaginal delivery. Whereas *Thomas et al.* [9] (2001) found that out of 85 epileptics 32 of them had completed the pregnancy. Nearly one third required cesarean section.

In our study out of 9 epileptic patients 2 (22.22%) had spontaneous abortions also *Thomas et al* [9]. (2001) found same results, whereas *Chattopadhyay et al* [10]. (2008) found in their study that fetal loss was in 4.65% cases. In our study, Out of 9 epileptic 4 (44.44%) patients had term babies. Whereas *Thomas et al* [9]. (2001) found majority (87.5%) had term babies, Similarly *Thomas et al.* [25] (2001) found that majority of women with epilepsy had safe pregnancy and childbirth without any aggravation of epilepsy.

Conclusion

The study showed an improvement in evaluation and management of women with non-obstetric disorders during pregnancy. Multidisciplinary collaboration should be actively pursued to limit complications while further research attention should be explored to provide additional evidence. Non-obstetric complications are not uncommon; although of lesser frequency than obstetric complications, the proportionate mortality was higher. Hence, while addressing individual, economic, social, cultural and health facility challenges; complication-readiness and collaborative care should be prioritised to improve outcome.

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