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A CLINICAL STUDY OF MEDICAL DISORDERS IN PREGNANCY

Milind Chandurkar[A], Girish Patrike[B], Tushar Tanpure[C], Abhijeet Mulay[C], Shashank Tuse[C], Hemant Nemade[C]

[A] - Professor and Head, Department of Medicine, Rural Medical College, Loni, PIMS (DU), Ahmednagar, Maharashtra.

[B] - Assistant Professor, Department of Medicine, Rural Medical College, Loni, PIMS (DU), Ahmednagar, Maharashtra

[C] - PG Resident, Department of Medicine, Rural Medical College, Loni, PIMS (DU), Ahmednagar, Maharashtra.

Medicine

Abstract:

The prospective study of 220 pregnant patients was conducted in patients admitted to Pravara Rural Hospital, was from June 2012 to May 2014. All patients admitted with medical disorders and pregnancy was included and patients of Pregnancy induced hypertension, surgical conditions, obstetric complications were excluded. Major of admissions were of primigravida. Apart from chronic medical conditions that affect pregnancy, it was observed that seasonal epidemic infectious diseases also cause significant maternal mortality and can have adverse foetal outcome.

Keywords: Pregnancy, Maternal, Primigravida, Mortality

Corresponding Author

Dr. Milind Chandurkar
"Vishwashanti" Building,
Shiv nagar, Signal Camp,
Latur, Dist: Latur, Maharashtra, PIN-413531
Contact no. +91 9960416211, 9970603161.
email: drmilindch@gmail.com

Introduction

A significant proportion of pregnancies worldwide are affected by various medical diseases. Major of them were contraindications for pregnancy in past.[1]

Advances in modern medicine and its various branches like obstetrics, neonatology and medicine have increased positive outcome of both mother and foetus with medical conditions.[1]

The physiological changes of pregnancy are well tolerated by most of women and are reversible.[2] Medical problems may interfere with the physiologic adaptations of pregnancy and cause poor pregnancy outcome and vice versa.

The management of medical disorders in pregnancy based on four important clinical principals:

- Medical disorders affected by pregnancy.
- Medical disorders that affect pregnancy.
- Physiological changes may make diagnose of medical disease difficult.
- Treatment of medical diseases may be totally different in pregnant state and non pregnant state.

In developed nations maternal mortality ratio are at 8 per 1,00,000 live births, in developing nations, it is 450 for the same no. of live births.[3]

The purpose of this study is to know the different medical disorders in pregnancy and their effect on maternal health and foetal wellbeing and pregnancy affecting medical disorders and their sequel.

Aims and objectives

1. To study clinical profile of patients presenting with medical disorders in pregnant women , being treated at Rural Medical College, Loni
2. To study various medical disorders complicating pregnancy.
3. To study various medical disorders complicated by pregnancy.

Material & Methods

The study was conducted at Pravara Rural Hospital Loni and included 220 pregnant women admitted under medicine wards with various medical diseases.

It was a prospective descriptive study.

Informed consent of the patients enrolled for the study was taken and approved by the Institutional Ethical Committee.

Inclusion criteria

- All pregnant women admitted with medical disorders from time of diagnosis of pregnancy till puerperium (6 weeks after delivery) was included.

Exclusion criteria

- Patients with pregnancy induced hypertension,
- Patients with surgical disorders in pregnancy,
- Patients presenting with Obstetric complications,
- Patients with presenting illness post puerperium.

Study protocol

All patients were explained about the nature of the study and written and informed consent was obtained.

Patients demographic parameters and chief complaints, past medical and obstetric history was taken.

General and systemic examination was done and necessary investigations depending upon suspected underlying medical conditions were done.

Baseline investigations like Complete Blood Count, Peripheral Blood Smear, Liver Function Test, Renal Function Test, Random Blood Sugar, HIV test, HBsAg test, Routine urine and Obstetric USG done in all patients.

All patients received standard medical line of management as per diagnosis reached.

Hospitalisation duration and pregnancy outcome noted.

WHO definitions were used to define patients with anaemia, premature birth, still birth, abortion, primigravida, multipara, maternal mortality and low birth weight.

Statistical analysis was done by standard methods. Values were expressed as mean ± standard deviation or as percentage.

Results

A total of 220 pregnant women satisfying inclusion criteria were studied.

Table no. 1 Haemoglobin level of cases

Haemoglobin level (gm/dl)	Total Patients (N=220)	Percentage (%)
Normal - 11 or more than 11	73	33.18%
Anaemia - less than 11	147	66.82%
Total	220	100%
Mean ± SD	10.26 ± 1.06 gm/dl	

Table no. 2 Distribution of Infectious and Non-Infectious diseases

Diseases	Total Patients (N=220)	Percentage (%)
Infectious	134	60.91%
Non-Infectious	86	39.09%
Total	220	100%

Table no. 3 Distribution of Infectious diseases system wise

System	Disease		Total
Respiratory Diseases	Acute Pharyngitis	13	32
	Community Acquired Pneumonia	12	
	Community Acquired Pneumonias	2	
	Tuberculous Pleural Effusion	2	
	Pulmonary Tuberculosis	3	
	ARDS	3	
Renal Diseases	Urinary Tract Infection	9	11
	Acute Pyelonephritis	2	
Liver Diseases	Viral Hepatitis	3	4
	Acute Fulminant Hepatitis E	1	
Septicaemia			**4**
Central Nervous System	Tuberculoma		1
Other Bacterial Infections	Acute Gastroenteritis	9	12
	Cholera	2	
	Frontal Sinusitis	1	
Other Viral Infections	Dengue fever	19	46
	Viral fever (other than Dengue)	19	
	Chicken pox	7	
	Measles	1	
Protozoal Infections	Falciparum Malaria	12	24
	Vivax Malaria	12	
Total			134

Table no. 4 Distribution Of Non-Infectious diseases system wise

System	Diseases		Total
Cardiovascular System	Rheumatic Heart Diseases	20	27
	Congenital Heart Diseases	3	
	Dilated Cardiomyopathy	4	
Central Nervous System	Cortical Venous Sinus Thrombosis	8	18
	Cerebrovascular Accidents Acute non-haemorrhagic infract	3	
	Acute intraparenchymal bleed	1	
	Seizure Disorder	4	
	Left sided Bell's Palsy	1	
	Central Pontine Myelinolysis	1	
Respiratory System	Acute Severe Asthma		2
Liver Diseases	Acute Fatty Liver	1	
	Non-Cirrhotic Portal Hypertension	2	3
Renal Diseases	Chronic Renal Failure with Ectopic Kidneys	1	2
	Acute Renal Failure	1	
Endocrinal Disorders	Gestational Diabetes Mellitus	5	7
	Diabetic Ketoacidosis	2	
	Central pontine myelinolysis	1	
Haematological Disorders	Severe Anaemia	2	3
	Idiopathic Thrombocytopenic Purpura	1	
Psychiatry	Anxiety Neurosis	13	14
	Postpartum Psychosis	1	
Autoimmune Diseases	Systemic Lupus Erythematosus	1	2
	Hypothyroidism	1	
Others	Urticaria	1	8
	Erosive Gastritis	1	
	Poisoning	2	
	Snake Bite	4	
Total			86

Table no. 5 Outcome of Hospitalisation

Outcome of Hospitalisation	No. Of Cases	Percentage (%)
Discharged	206	93.63%
Referred	3	1.37%
Discharged on request and lost to follow-up	1	0.45%
Expired	10	4.55%
Total	220	100%

Table no. 6 Association between Diseases and Maternal Deaths in hospital patients

Disease	No. of Diseased	Deaths	Percentage
Acute Fulminant Hepatitis E	1	1	100%
Acute Fatty Liver Of Pregnancy	1	1	100%
Central pontine myelinolysis	1	1	100%
ARDS	3	2	66.67%
Septicaemia	4	2	50%
Acute Renal Failure	2	1	50%
Viral Hepatitis	3	1	33.33%
Cortical Venous Sinus Thrombosis	8	1	12.5%

Table no. 7 Foetal outcome in our hospital

Foetal outcome	No. of cases
Full term Delivery	12
Preterm Delivery	23
Adverse foetal outcome	18
Underwent Medical Termination Of Pregnancy (MTP)	3
Total	56

Table no. 8 Association between diseases and intrauterine deaths

Disease	No. of Cases Diseased	Intrauterine Deaths (IUD)	Percentage
Acute Fulminant Hepatitis E	1	1	100%
Acute Fatty Liver	1	1	100%
Acute Renal Failure	1	1	100%
ARDS	2	1	50%
Septicaemia	2	1	50%
Viral Hepatitis	2	1	50%
Viral Fever	3	1	33.33%
Seizure Disorder	4	1	25%

Table no. 9 Association between diseases and abortions

Disease	No. of Cases	No. of Abortions	Percentage
Snake Bite	1	1	100%
Cholera	2	1	50%
Falciparum Malaria	6	2	33.33%
Vivax Malaria	6	2	33.33%
Viral Fever	3	1	33.33%

Discussion

Total 220 pregnant women admitted with their age between 18 to 40 yrs and Mean SD is 23.04 ± 3.69 yrs. The maximum number of patients 91 (41.36%) were admitted in age group of 21-24 yrs. Increasing maternal age is associated with significantly elevated risks for pregnancy complications and adverse outcome, which vary by parity.[4]

The maximum number of pregnant women 153 (69.54%) were primigravida.

27 pregnant women were admitted for cardiovascular disorders, 18 (66.67%) were primigravida. Koregol et al[5] reported 52.72% females to be primigravida in study conducted on pregnancy and heart diseases. Majority of medical disorders get identified during first pregnancy due to physiologic changes during pregnancy.

The duration of hospitalisation of pregnant women ranged from 1 to 23 days with Mean SD of 6.23 ± 1.71 days. It varies according to underlying medical condition and severity of disease. Maximum number of pregnant women 84 (38.18%) were hospitalised in third trimester and 28 (12.73%) in post natal period. Some conditions like cortical venous sinus thrombosis, Rheumatic heart disease may present in late pregnancy or in puerperium.

The maximum number of pregnant women 80 (36.36%) had moderate type of anaemia. 2 (0.91%) pregnant women had severe anaemia. Ullah et al[6] found 67.6% incidence of anaemia. Riffat Jaleel et al[7] found the frequency of anaemia as 69.9%. Other studies by Meenakshi Khapre et al[8] and Lokare et al[9] found similar or more incidence of anaemia in pregnancy.

134 (60.91%) pregnant women were admitted for infectious diseases and 86 (39.09%) were admitted for non-infectious diseases.

Out of 134 pregnant women with infectious diseases, 95 (70.90%) were having anaemia. Studies undertaken by the National Institute of Nutrition, Hyderabad, showed that there was a fall in T and B cell count with fall in haemoglobin levels below 11 g/dl.[10]

Immunosuppression in anaemic women make them more susceptible to infections.[10]

Most common infectious disease was viral fevers n = 46 (20.90%). Out of which n = 19 (8.63%) was dengue fever and rest were other viral infections.

High incidence of dengue fever among pregnant women could be because of the fact that there was an epidemic of dengue fever during study period.

Among non-infectious diseases, highest number of patients were admitted for cardiovascular diseases.

Rheumatic Heart Disease was the main cause of hospitalisation followed by congenital heart disease.

Study done by Walkiria Samuel Avila et al[11] in 1000 pregnant women had similar observations. Increased cardiac demand during the course of pregnancy potentially increases morbidity and mortality in women with underlying heart disease.

Second highest numbers of pregnant women were admitted for neurological disorders. Cortical venous sinus thrombosis was the main cause of hospitalisation.

Hypercoagulability and hormonal changes during pregnancy and the puerperium carry an increased risk of venous thromboembolism (VTE) including cortical venous sinus thrombosis.[12]

Jeng JS reported that Cerebral venous sinus thrombosis (CVST) may account for approximately 20% of strokes during pregnancy.[13]

Outcome of hospitalisation

Out of 220 patients, 206 (93.63%) pregnant women were treated successfully and discharged. They were advised follow up in Medicine and Obstetric out-patient department (OPD).

Three (3) patients were referred to higher centre. Two were non-cirrhotic portal hypertension for variceal ligation due to high risk of variceal bleeding.[14]

10 patients (4.55%) died during hospitalisation. 18 (8.18%) had adverse foetal outcome. Rest continued pregnancy and was no adverse maternal or foetal outcome noted.

High percentage of maternal deaths (100%) was observed in pregnant women with acute fulminant hepatitis E, liver diseases and central pontine myelinolysis.

Vaibhav Banait et al[15] found out that 54.8% pregnant women with Hepatitis E died. 5 (50%) out of 10 pregnant women died in post-natal period, 4 (40%) in IInd trimester and 1 (10%) in IIIrd trimester. No maternal death was observed in Ist trimester.

Place of Delivery

All pregnant women who were discharged, were advised follow-up in medicine and obstetric OPD. 156 pregnant women were delivered in our hospital during hospitalisation.

60 pregnant women were delivered in outside hospitals and information regarding maternal and foetal wellbeing was taken telephonically. There was no adverse maternal and foetal outcome.

Foetal outcome in our hospital deliveries

Out of 156 pregnant women delivered in our hospital, 23 had preterm deliveries and 133 had full term deliveries.

18 pregnant women had adverse foetal outcome and 3 underwent medical termination of pregnancy.

High percentage (100%) full-term delivery was observed in patients with Atrial Septal Defect (ASD), Viral Fevers, Acute Pharyngitis, Post-partum psychosis and Central pontine myelinolysis.

Atrial septal defect (ASD) is usually well tolerated and has good maternal and foetal outcome.[1, 16, 17, 18]

Out of 6 hospital deliveries of falciparum malaria, only 1 (16.67%) had full-term delivery. 3 (50%) had preterm

deliveries and 2 (33.33%) aborted.

A similar study by Bangal et al[19] in 2011 at same hospital found that 33.33% pregnant women had full-term deliveries and 20% had abortions.

Pregnant women are prone to severe attacks of malaria, which may result in to abortion, premature labour or still birth.[19]

High Percentage of low birth weight babies (100%) were observed in pregnant women with severe anaemia. Riffat Jaleel et al[7] reported 29.6% babies were low birth weight in severely anaemic mother.

Adverse foetal outcome: in our hospital

There were 18 adverse foetal outcome. 8 intrauterine deaths, 7 abortions and 3 were stillborn. High percentage of intrauterine deaths (100%) was observed in pregnancy with liver diseases and acute renal failure.

Ghumman Surveen et al[20] reported fetomaternal complications were more in severe renal disease. Despite renal replacement therapy, renal function deteriorated in two women requiring termination of pregnancy with delivery of preterm neonates both of them died in the neonatal period.

High percentage of abortion (100%) was observed in pregnant woman admitted for vasculotoxic snake-bite. Reid et al[21] reported 1 of 5 (20%) women aborted after a venomous bite where as Dao et al[22] reported 75% abortions.

Conclusion

- In this study we conclude that most of the clinical observations were in accordance with the other studies conducted earlier.
- Rheumatic heart disease was the most common medical disorder during pregnancy.
- The maximum numbers of pregnant women were having moderate anaemia. High percentage of infectious diseases was observed in anaemic patients.
- Among various infective diseases, Malaria, Viral Fever and Dengue fever were most common diseases causing maternal morbidity.
- The high incidence of dengue among pregnant mother could be because of the fact that there was an epidemic of dengue fever during study period.
- The high percentage of maternal mortality was associated with Acute fulminant hepatitis E, Acute fatty liver of pregnancy, Central pontine myelinolysis and Viral Hepatitis.
- The high percentage of adverse foetal outcome was associated with Acute fulminant hepatitis E, Acute fatty liver, Viral hepatitis, Cholera, Falciparum malaria, Vivax malaria, Viral fever and Seizure disorder.
- Adverse foetal outcome was high in certain conditions like severe anaemia, vasculotoxic snake bite, could be due to delay in referral as population under study was from rural area.
- Apart from chronic medical conditions that affect pregnancy, it was observed that seasonal epidemic infectious diseases also cause significant maternal morbidity and can have adverse foetal outcome.
- The present study concludes that Pregnancy with various medical disorders and infections can directly affect maternal and foetal health. Thus, any discomfort during pregnancy needs a high index of suspicion for early detection of underlying medical disorder, infective disease and management to reduce adverse outcome.

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