



A STUDY OF MEDICAL ILLNESSES IN PERIPARTUM FEMALES AT TERTIARY CARE CENTER

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ABSTRACT

Background: Peripartum period is duration from two month before delivery to 6 weeks postpartum. The present study was undertaken to study the clinical profile of different medical illnesses during peripartum period at tertiary care centre. **Objectives:** To study the clinical and laboratory profile of medical illnesses in peripartum female at tertiary care centre. **Methodology:** The present prospective study was an analytical study conducted at tertiary care center, on 100 peripartum female patients as per study protocol. **Results:** The most common age group of our study was 21-30 years. Overall non-communicable diseases were more common than communicable diseases. The distribution of patients was almost similar in 8-9 months, 9 months to delivery and postpartum. All manifestations were more common in multigravida compared to primigravida patients. **Conclusions:** In present study, non-communicable diseases were more common than communicable diseases. Among non-communicable diseases cerebrovascular accident was more common, followed by postpartum cardiomyopathy, acute kidney injury, hypertension, diabetes mellitus, etc. Among communicable diseases acute gastroenteritis was more common, followed by viral hepatitis, malaria, dengue, enteric fever, lower respiratory tract infection, etc. during peripartum period. Overall medical illnesses were more common in the age group of 21 to 30 years. We didn't observed any influence of peripartum period time duration as far as disease occurrence was concern. All manifestations were more common in multigravida patients than primigravida patients.

KEY WORDS :

Introduction

Pregnancy is a physiological state which can be complicated by many medical and infective disorders. Physiological changes occurring during pregnancy are essential for the successful outcome of pregnancy. Medical disorders may interfere with these adaptations and complicate the pregnancy. Pregnancy itself can also have an adverse impact in the pre-existing or new onset medical conditions.

Non communicable diseases include pre-existing chronic illnesses such as hypertension, diabetes mellitus, thyroid dysfunction, cardiovascular manifestations, etc. and pregnancy associated medical illnesses such as pregnancy induced hypertension, gestational diabetes mellitus, peripartum cardiomyopathy, pregnancy induced stroke, postpartum acute kidney injury, HELLP, gestational thrombocytopenia, etc.

Hypertension is the most common medical problem encountered during pregnancy complicating upto 10% of pregnancies (1). Pregnancy induced hypertension (PIH) is the transient hypertension or chronic hypertension identified in the later half of pregnancy. Peripartum cardiomyopathy is an idiopathic and reversible form of dilated cardiomyopathy.

Communicable diseases include infective states like malaria, viral hepatitis, enteric fever, AGE, LRTI, sexually transmitted diseases, etc. Viral infections are the major cause of maternal and fetal morbidity and mortality. These may be HAV, HEV, HBV, chicken pox and HIV. Hepatitis E known to cause high mortality which can lead to 15-25% maternal deaths (2). The risk of vertical transmission of HIV is 25-30%.

Method

This prospective study was an analytical and non-randomized study based on clinical study of cases of peripartum females attended during defined study period enrolment of 100 cases, documented as per proforma.

Selection Criteria:

Inclusion Criteria:

- All peripartum patients aged >18 years attending medical department during study period.
- All those females who gave consent.

Exclusion criteria:

- All critically ill patients.
- Those who did not give consent.

Recorded information entered in Microsoft excels worksheet. Data was analysed and compared by using appropriate statistical test. All the patients fulfilling selection criteria were explained about the purpose of study and a written informed consent was obtained to participate in the study before enrolment.

According to pretested Proforma, each patient underwent detailed Generalized and Systemic examination. Hematological, Biochemical and Radiological investigations were carried out as per study protocol.

Observation and Results

Table:1 Distribution of study population according to their age, residence and occupation for example per Modified kuppaswamy classification 2018⁽³⁾.

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		No. of patients (n=100)	Percentage
Age (years)	19-20	6	6%
	21-30	79	79%
	31-40	15	15%
Type of	Urban	67	67%
	Rural	33	33%
Occupation	Professional	3	3%
	Semi- Professional	5	5%
	Clerical/shop/farm	1	1%
	Skilled	2	2%
	Semi-skilled	84	84%
	Unskilled	2	2%
	Unemployed	3	3%

Table:2 Distribution of study population according to their clinical presentation and systemic involvement

Clinical Presentation	System involvement	Diseases	No. of patients (n=100)	Percentage	
Pyrexia, Vomiting, Abdominal pain, Yellowish sclera/urine, Cough, Breathlessness, Loose stools, Altered sensorium, Oliguria	Febrile peripartum females	Acute Viral hepatitis (n=11)	HAV	8	8%
			HEV	3	3%
		Malaria (n=9)	P. Vivax	5	5%
			P.Falciparum	4	4%
		Dengue (n=5)	NS1	3	3%
			IGM	2	2%
		Enteric fever	5	5%	
		LRTI	3	3%	
		Puerperal sepsis	4	4%	
Breathlessness, Bilateral pedal edema, Vomiting, Altered sensorium	CVS	PPCM	13	13%	
		Hypertension	4	4%	
Headache, Altered Sensorium/Comatose, Convulsion,	CNS	CVA	CVST	8	8%
			Ischemic stroke	4	4%
		IPH	1	1%	
		PRESS	5	5%	
Abdominal Pain, Loose stools, Vomiting, Pyrexia	GIT and Hepatobiliary system	Acute gastroenteritis	11	11%	
		HELLP Syndrome	1	1%	
Oliguria, Vomiting, Abdominal pain, Loose stools, breathlessness, altered sensorium, pyrexia	Renal	AKI	7	7%	
Breathlessness, Bilateral pedal edema, pallor	Hematological	Anemia	Physiological	20	20%
			Iron+ Vitamin B12 deficiency	16	16%
			Vitamin B12 deficiency	14	14%
			Iron deficiency	10	10%
		Gestational thrombocytopenia	3	3%	

In present study, we analysed clinical presentation of all cases with systemic involvement. Pyrexia was seen in 37% of peripartum females. Among CVS, 13 PPCM patients seen. Among CNS, cerebrovascular accident was more common i.e. 13 patients. Acute gastroenteritis was more common among GIT and hepatobiliary system. There were 7 AKI patients seen. In present study, 60% anemic patients seen.

Table:3 Distribution of study population according to their communicability.

		No. of patients (n=100)	
Communicable / Infective diseases	Viral hepatitis	11	
	Malaria	9	
	Dengue	5	
	Enteric fever	5	
	LRTI	3	
	AGE	11	
	Non-Communicable diseases	Pre-existing illnesses	Hypertension
Diabetes Mellitus			1
Hypothyroidism			5
Cardiovascular accident			0
Pregnancy associated medical illnesses		Pregnancy induced hypertension	4
		Gestational diabetes mellitus	2
		Peripartum cardiomyopathy	13
		Cerebrovascular accident	13
		HELLP	1
		Gestational thrombocytopenia	3
Postpartum AKI	7		
PRESS	5		

This shows 44 patients had communicable diseases like viral hepatitis, malaria, dengue, enteric fever, LRTI and AGE, etc. In this study, 56 patients had non communicable diseases included hypertension, CVA, AKI, PPCM, DM, etc. out of which 8 patients had pre-existing illnesses and 48 had pregnancy associated medical illnesses. Peripartum cardiomyopathy and cerebrovascular accident were more common among pregnancy associated illnesses.

Table:4 Distribution of study population based on abnormal laboratory parameters.

Laboratory parameters	Abnormal cut-off	No. of patients(n=100)
Haemoglobin (g/dL)	<11	60
	>11	40
WBC (/uL)	>11000	22
	<11000	88
Platelets(/uL)	<150000	15
	>150000	85
S. creatinine (mg/dL)	<1.5	94
	>1.51	7
S. Total Bilirubin (mg/dL)	<1.2	82
	>1.21	18
SGPT(IU/L)	<56	78
	>56	22
SGOT(IU/L)	<45	80
	>45	20
S. Iron(ug/dl)	<45	18
	>45	82
S. Vitamin B12 (pg/ml)	<200	22
	>200	78

This study shows distribution of peripartum females based on abnormal cut-off of various laboratory parameters. 60% females had anemia. Leucocytosis and thrombocytopenia seen in 22 and 15 patients respectively. In this study shows, 7 patients had AKI. There were 18 females with low iron level and 22 females with low vit. B12 level. There were 22 females with raised SGPT and 20 females with raised SGOT seen.

Table:5 Distribution of febrile peripartum patients as per etiology.

		Term of Pregnancy	No. of Patients (n=37)	Percentage
Acute viral hepatitis (n=11)	HEV (n=8)	Antepartum	6	16.2%
		Postpartum	2	5.4%
	HAV (n=3)	Antepartum	3	8.1%
		Postpartum	NA	NA
Malaria fever (n=9)	Plasmodium Vivax (n=5)	Antepartum	3	8.1%
		Postpartum	2	5.4%
	Plasmodium Falciparum (n=4)	Antepartum	3	8.1%
		Postpartum	1	2.7%
Dengue viral fever (n=5)	Dengue NS1 (n=3)	Antepartum	2	5.4%
		Postpartum	1	2.7%
	Dengue IgM (n=2)	Antepartum	2	5.4%
		Postpartum	NA	NA
Enteric Fever (n=5)	Antepartum	4	10.8%	
	Postpartum	1	2.7%	
Lower Respiratory Tract Infection (n=3)	Antepartum	3	8.1%	
	Postpartum	NA	NA	
Puerperal Sepsis (n=4)	Antepartum	NA	NA	
	Postpartum	4	10.8%	

This table indicates that in present study, 37 females had pyrexia. The most common cause was viral hepatitis (11), out of which 8 females had HEV and 3 females had HAV. 9 patients had malaria fever, out of which 5 were P. vivax and 4 were P. falciparum. There were 5 dengue fever patients and 5 enteric fever patients. All manifestations were more common among antepartum than postpartum females. Exception was puerperal sepsis (n=4) which was more common in postpartum.

Table:6 Demographic profile of patients presented with Peripartum Cardiomyopathy.

Characteristics		No. of patients (n=13)	Percentage
Age (years) (mean age=31)	≤ 20	NA	NA
	21-30	7	53.8%
	31-40	6	46.2%
Primigravida	2	15.4%	
Multigravida	11	84.6%	
Mode of Delivery	Vaginal	10	76.9%
	LSCS	3	23%
Pre-eclampsia	2	15.4%	
GDM	2	15.4%	
Timing at diagnosis	9 Months to delivery	3	23%
	Delivery to 10 days post	2	15.4%
	10 – 20 days post delivery	4	30.8%
	20 days – 1 month post	4	30.8%
LVEF (%) at diagnosis	< 35	4	30.8%
	>35	9	69.2%

In present study, among patients of peripartum cardiomyopathy, mean age of the patients was 31 years. 84.6% (n=11) of the patients

were multigravida while 14.4% (n=2) patients were primiparous which suggests that peripartum cardiomyopathy is more common among multiparous women. Out of 13 patients of peripartum cardiomyopathy, 76.9% (n=10) patients had vaginal delivery while 23% (n=3) patients had to undergo LSCS.

Table:7 Distribution of study population according to Central Nervous System involvement.

Causes of CNS involvement		No. of patients (n=18)	Percentage
Cerebrovascular accident (CVA)	Ischemic stroke	4	22.2%
	Intraparenchymal hemorrhage (IPH)	1	5.5%
	Cerebral venous sinus Thrombosis (CVST)	8	44.4%
Posterior Reversible Encephalopathy Syndrome (PRES)		5	27.8%

In present study, 18% of the patients had CNS involvement. The most common cause of CNS involvement during peripartum females was CVA 72.2% (n=13). CVST seen in 8 patients was the most common cause of CVA followed by ischemic stroke (n=4) and IPH(n=1). 5 patients had PRESS. In present study, 7% patients had postpartum AKI. In present study, 28% patients had GIT and hepatobiliary system involvement. There were 1 patient of HELLP syndrome.

Table:8 Distribution according to clinical profile of anemic patients.

Haematology	Number of patients in different types of Anemia					Total (n=60)	Percent age
	Physiological	Iron deficiency	Vitamin B12 deficiency	Iron + vitamin B12 deficiency			
Haemoglobin (g/dL)	≤7	NA	3	2	4	9	15%
	7-10	20	6	9	11	46	76.7%
	10-11	NA	1	3	1	5	8.3%
	>11	Nil	NA				
WBC (μL)	<4000	Nil	NA				
	4000-11000	13	6	7	7	33	55%
	>11000	7	4	7	9	27	45%
Platelets (μL)	<50000	Nil	NA				
	50000-100000	NA	NA	3	2	5	8.3%
	>100000	20	10	11	14	55	91.7%
Hematocrit (mean) (%)	30	28	29	28	NA	NA	
MCV (mean) (fL)	85	65	101	95	NA	NA	

Above table stats that in present study, 15% (n=9) of the patients had severe anemia, 76.7% (n=46) patients had moderate anemia while 8.3% (n=5) patients had mild anemia. Out of 46 patients of moderate anemia, 43.5% (n=20) patients had physiological anemia. Physiological anemia is because the plasma volume expansion is greater than red blood cell mass increase which causes hemodilution. Moderate anemia was seen in patients of malaria, enteric fever and dengue. Out of this significant anemia was found in patients of malaria due to hemolysis.

SUMMARY

The present study was aimed to study the incidence of medical illness in peripartum females at tertiary care centre and to assess the clinical and laboratory profile of these patients. A total of 100

peripartum female patients were studied. Most common age group of our study was 21-30 years. Overall non communicable diseases were more common than communicable diseases in our study. Here, in our study 52% urban patients and 8% rural patients had non-communicable diseases while 25% rural patients had communicable disease.

The distribution of patients was almost similar in 8-9 months, 9 months to delivery and postpartum. Majority of our patients had vaginal delivery as compared to LSCS. All manifestations were more common in multigravida patients than primigravida patients. Pyrexia was more common in antepartum than postpartum. The most common etiology of pyrexia was acute viral hepatitis, followed by malaria and dengue. PPCM was the most common manifestation among patients with cardiovascular involvement. Cerebrovascular accident was the most common manifestation among patients with CNS involvement. Postpartum AKI was the most common manifestation among patients with multigravida. AGE was the most common manifestation among patients of GIT and hepatobiliary system.

Reference

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