ORIGINAL ARTICLE

RELATIONSHIP OF MEDICATIONS AND PREGNANCY COMPLICATIONS

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ABSTRACT

Objective: Study aimed to assess complications during pregnancy and its management

Materials and methods: A cross-sectional study design was adopted using convenience sampling technique. A total of 311 pregnant women with age 18 years and above, and those having complications lead to early delivery were included. Data was collected from different hospitals of Lahore Pakistan during the period from December-2018 to February-2019.

Results: Results showed that gestational periodhas significant relation with the complication present ($P<0.001$),morning sickness ($P=0.037$), vaginal bleeding ($P<0.001$), anemia ($P<0.001$) and miscarriage ($P<0.001$), while qualification has significant relation with urinary tract infections ($P=0.014$).

Conclusion: It was concluded that presence of complications is related to gestational age and patient qualification.

Key words: Hyperemesis gravidum, Cholestasis, Pruritus, Multiparous.

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INTRODUCTION

Complications during pregnancy are those that relate to the health problem in pregnancy. Pregnancy related heath problems may occur during pregnancy (i.e. gestation period) or before pregnancy. Some women who are healthy before pregnancy sometimes face serious complications which may include: anemia, vaginal bleeding, diabetes, high blood pressure, morning sickness, pruritus, preterm labor, miscarriages and urinary tract infection.

Pregnancy anemia is one of the major health problems, especially in the developing countries. About 41.8% women are affected by anemia globally. The prevalence rate of anemia is different ranging from 16.6%-95.0% during pregnancy. Anemia is easy to prevent if detected on time. It involves the maintenance of haemoglobin level[1].

Urinary tract infection (UTI) is one of the most common complications among pregnant ladies. UTI during pregnancy has been categorized asymptomatic and symptomatic. Lower UT involvement leads to asymptomatic bacteriuria and the upper UT involvement leads to symptomatic bacteriuria. The anatomical and physiological changes makes the women more susceptible to urinary tract infection during pregnancy[2].

Preterm labor is defined as birth before completion of gestational time. The goal of all attempts is to prevent and treat premature labor and improve chances of surving new born infant with few complicatios as muc as possible[3]. Preterm labor, also called premature birth is still major problem all over the world. In 2013, the preterm birth rate was 8.7% in Germany, 10.7% in Brazil and 12% in United State. In Iran, the incidence of preterm labor was about 7.2% in Tehran, 5.5% in Shiraz[4].

Itching is common problem in pregnancy, it occurs in about 14-23% of women. Its prevalence is affected by genetic and environmental factors and vary among populations worldwide[5]. Pruritus is commonly

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caused by dry skin. It may be an indication of underlying disease intrahepatic cholestasis of pregnancy, pruritic urticarial papules or others[6]. In the pregnancy, the endocrinology involves the increased activity of maternal adrenal and pituitary gland along with physiological developement of fetal endocrine gland. Among other hormones, progesterone and estrogen is among the major factors that influence the skin[7].

Gestational diabetes mellitus is glucose intolerance with onset or first recognition in pregnancy. According to studies from 1999-2009, the overall incidence rate of gestational diabetes mellitus was about 10%[8]. The prevalence of diabetes was found to be ranging from about 5% in countries such as Pakistan, Denmark, Ireland, South Korea, South Africa and United Kingdom, to less than 10% in Italy, Turkey, Brazil and Australia to a prevalence as high as 20% in Bermuda and Nepal. According to recent report of International diabetes Federation, that worldwide 16% of live births in 2013 were complicated by hyperglycemia during pregnancy[9].

About 5-8% of pregnant women are affected by hypertension, worldwide. Preeclampsia affects about 5-7% of all pregnancies. It is defined by hypertension and proteinuria[10]. Friedman and Neff demonstrated that among pregnant women, about less than 10% had maximum diastolic B.P of 60mmHg or lower. But in some studies it is found less frequent[11]. About 1% of all women are affected by miscarriage . About 12-15% of miscarriages occur in all pregnancies. The spontaneous miscarriage is one of cause of loss of pregnancy. About 30% of pregnancies are lost between implantation and sixth week. The management of recurrent miscarriage is one of most debated topic[12]. The musculoskeletal problem occurs due to pregnancy induced biochemical, hormonal changes. About one fourth of pregnant women experience temporarily disabling symptoms. Spinal pain is also reported. Other includes lower and upper extremity pain, muscle cramps and peripheral neuropathy[13]. The incidence of back is relatively high during pregnancy. Some pregnant women have to face upper back pain, sacroiliac joint pain, muscle cramps, lower joint pains, and foot discomfort. Also loss of balance and fall[14].

Vaginal bleeding is common complication in first trimester. Bleeding relates to preterm birth and low birth weight etc[15]. Estimates of bleeding prevalence in early pregnancy ranges from 7-24%. As, the first trimester bleeding is an alarming symptoms because it may occur at time of miscarriage[16].

About 60-80% of women experience nausea and vomiting. Hyperemesis gravidum affects about 0.5 to 2% of pregnancies[17]. Sometimes its symptoms remain to first trimester but small percentage of woman suffer until delivery. Women with severe symptoms of nausea and vomiting during pregnancy may have hyperemesis gravidarum. Factors involve may be the personal history of motion sickness, history of migraines, women with low income level, obesity, location of corpus luteum, or high amount of saturated fats intake[18]. Study aimed to assess complications during pregnancy and its management.

MATERIAL AND METHODS

A cross-sectional study design was adopted using convenience sampling technique. A total of 311 pregnant women with age 18 years and above, and those having complications lead to early delivery were included. Data was collected from Services Hospital Lahore, Rangers Hospital Lahore, DHQ Hospital Bahawalnagar and from some gynae clinics over a period from December-2018 to February-2019. Data was collected by predefined performa which consisted of three parts. One part consisted of demographics, second part disease information and third part consisted of management of disease. The data was analyzed by using SPSS v.22 software and analysis was carried by using chi-square. $P<0.005$ was considered to be staistically significant. **Ethical Considerations:** The study was approved from Institute of Pharmacy, Lahore College For Women University, Lahore, Pakistan. Prior permission was sought by head of respective hospitals before starting the survey.An informed consent letter regarding the aims and importance of study was signed by the patients. Confidentiality of personal information was assured.

RESULTS

Patient demographics: Patient demographics are depicted in Table-1.Results showed that women

ages participating in this study were between 19-41 years but most of them were of 21-30 years. Participants were of gestational age from 20 weeks upto delivery and mostly women were multiparous or with multigravida.

Complications during pregnancy: Complications during pregnancy are depicted in Table-2.Results showed that 64.3%women were suffering from complications. Out of these 25.7%had anemia, 6.8%hadUTIs, 8.7%had hyperemesis gravidum, 8.4% had diabetes, 9.6%had high blood pressure, 4.2%had low blood pressure, 25.7% had vaginal bleeding , 7.1% had joint pain and 5.8% had itching. About 9% of women faced the miscarriage and 3.9% faced the preterm labor due to certain complication.

Management of complications: Management of complications during pregnancy is depicted in Table-3. Results showed that in anemia 9% used folic acid, 6.8% IV iron supplement and 5.5% oral iron supplements. In morning sickness, 3.2% useddopamine blocking agents, 3.2% the immunosuppressants, 1.6% antihistamine +vitaminB6. In diabetes 5.5% used biguanides, 3.2% insulin. In blood pressure 5.8% used antihypertensive/ antihypotensive agents and 5.8% used dietary approach whereas 1.6% used the combination of two. In itching, 3.5% used calamine lotion, 1% oil massage, 0.6% ursodiol. In joint pain, 3.2% used vitamin-D supplement 1.9% calcium supplement and many used others. In vaginal bleeding, 12.9% tranexamic acid, 7.7% steroids, 5.1% immunoglobulin and many used others. In many cases dietary changes proved effective and many patients suffering from mentioned diseases used many other approaches to treat their condition.

Association of demographics with complications: The association between demographics and complications during pregnancy is depicted in Table-4. Results showed significant association of demographics the factors. Gestational age showed significant relation with presence of complication such as anemia, miscarriage, morning sickness and vaginal bleeding, while qualification has significant relation with urinary tract infections

Table 1: Demographics of patients (n=311).

Demographics	Options	f(%)	Mean	Standard Deviation
Age	19-20years	11(3.5)	2.25	0.533
	21-30years	216(69.5)		
	31-40 years	80(25.7)		
	41	4(1.3)		
	Total	311(100)		
Qualification	Illiterate	69(22.2)	2.95	1.447
	Matriculate	62(19.9)		
	Intermediate	78(25.1)		
	Graduate	54(17.4)		
	Above post graduate	48(15.4)		
Gestational age	20-25 weeks	92(29.6)	2.47	1.166
	26-30 weeks	60(19.3)		
	31-35 weeks	79(25.4)		
	More than 35 weeks	80(25.7)		
Income rupees	Less than 20000	139(44.7)	1.83	0.903
	21000-30000	106(34.1)		
	31000-40000	47(1.1)		
	More than 40000	19(6.1)		
Parity	Primagravida	121(38.9)	1.61	0.488
	multigravida	190(61.1)		

Table 2: Complications during pregnancy.

Complications	Options	f(%)	Mean	Standard Deviation
Are you suffering from any complication?	Yes	200(64.3)	1.36	0.480
	No	111(35.7)		
Are you suffering from anemia?	Yes	80(25.7)	1.74	0.438
	No	231(74.3)		
Are you suffering from anemia?	Yes	21(6.8)	1.93	0.251
	No	290(100)		
Are yousuffering from hyperemesis gravidum?	Yes	27(8.7)	1.91	0.282
	No	284(100)		
Are you suffering from Diabetes?	Before pregnancy	8(2.6)	2.86	0.411
	After pregnancy	26(8.4)		
	None	277(89.1)		
Are yousuffering from high or low blood pressure?	High b.p	30(9.6)	2.77	0.611
	Low b.p	13(4.2)		
	None	268(86.2)		
Are you facing the vaginal bleeding?	Yes	80(25.7)	1.74	0.438
	No	231(74.3)		
Are you suffering from joints pain?	Yes	22(7.1)	1.93	0.257
	No	289(92.9)		
Are you suffering from pruritus?	Yes	18(5.8)	1.94	0.234
	No	293(84.2)		
Are you facing preterm labor?	Yes	12(3.9)	1.96	0.193
	No	299(96.1)		
Are you facing the problem of miscarriage?	Yes	28(9)	1.91	0.287
	No	283(91)		

Table 3: Complications during pregnancy.

Questions	Options	f (%)	Mean	Standard deviation
What you are using for anemia management?	Oral iron supplements	17(5.5)	5.08	1.619
	IV iron supplements	21(6.8)		
	Folic acid	28(9)		
	Dietary supplements	15(4.8)		
	Combination	3(1)		
	Nothing	227(73)		
What are you using for vaginal bledding?	Tranexamic acid	40(12.9)	1.95	0.228
	Steroids	524(7.7)		
	Immunogloblins	16(5.1)		
	Nothing	231(74.3)		
What are you using for diabetes?	Biguanides	17(5.5)	3.72	0.771
	Insulin	10(3.2)		
	Lifestyle changes	15(4.8)		
	Nothing	269(86.5)		

What are you uisng for morning sickness?	Antihistamine	1(0.3)	5.73	0.845
	Antihistamine+vit.B6	5(1.6)		
	Immunosuppressants	10(3.2)		
	Dopamine blocking agent	10(3.2)		
	Lifestyle changes	9(2.9)		
	Nothing	276(88.7)		
What are you using for high or low bp?	Lifestyle changes	18(5.8)	3.69	0.823
	Antihypertensive /antihypotensive agents	18(5.8)		
	Both	5(1.6)		
	None	270(86.8)		
What are you using for joint pain?	Vit.D supplements	10(3.2)	4.79	0.835
	Vit.D+ossein combination	4(1.3)		
	Calcium supplements	6(1.9)		
	Mineral complex	4(1.3)		
	None	291(93.6)		
What are you using for pruritis?	Oil massage	3(1)	3.91	0.479
	calamine lotion	11(3.5)		
	Ursodiol	2(0.6)		
	None 17	295(94.9)		

Table 4: Association of demographics with pregnancy complications.

Complications	Age	Qualification	Income of family	Gestational period	Parity
Complication presence	0.107	0.640	0.670	<0.001*	0.158
Anemia	0.060	0.972	0.479	<0.001*	0.444
Morning sickness	0.357	0.154	0.210	0.037	0.301
Uti	0.820	0.014	0.143	0.269	0.937
High b.p/Low b.p	0.422	0.209	0.069	0.118	0.206
Diabetes	0.123	0.445	0.890	0.130	0.465
Miscarriage	0.690	0.706	0.506	<0.001*	0.442
Preterm labor	0.883	0.615	0.797	0.066	0.159
Pruritus	0.737	0.598	0.073	0.316	0.318
Joint pain	0.921	0.488	0.377	0.303	0.800
Vaginal bleeding	0.060	0.972	0.479	<0.001*	0.444

Table 5: Association of demographics with management.

Complication management	Age	Qualification	Income of family	Gestational period	Parity
Anemia management	0.312	0.328	0.162	<0.001*	0.238
Diabetes management	0.558	0.160	0.875	0.038	0.332
Uti management	0.889	0.430	0.529	0.404	0.693
High b.p/lowb.p management	0.360	0.246	0.011	0.427	0.249
Morning sickness management	0.130	0.803	0.099	0.086	0.483
Cholestasis management	0.932	0.575	0.214	0.184	0.570
Vaginal bleeding management	0.027	0.296	0.755	< 0.001*	0.288
Jointpain management	0.496	0.963	0.392	0.375	0.890

Association of demographics with management:

The association between demographics and complication management during pregnancy is depicted in Table-5.

DISCUSSION

Complications during pregnancy relate to health problems that lead to danger for mother as well as fetal health. The present study was conducted to assess some common complications in pregnancy and their management. In previous study[1] it was found that about 16.6-95% women suffered from anemia but in present study it was found about 25.7% women suffered from anemia. Previous study[2] found that UTI is one of the most common problem and in present study it was found that about 6.8% women were affecting from UTI. In previous study[4], it was found that 7.2% women suffered from preterm labor as in Tehran, whereas in present study about 3.9% suffered from preterm labor. In previous study[5] it was found that about 14-23% women were suffered from pruritus but in present study it was found that about 5.8% women suffered from pruritus. In previous studies[8], it was found that about 10% women suffered from gestational diabetes whereas in present study it was found that about 8.4% suffered from gestational diabetes. In previous study[10] it was found that about 5-8% women suffered from hypertension whereas in present study it was found that about 9.6% women suffered from hypertension.

In previous study[11] it was found that less than 10% women suffered from low blood pressure whereas in present study it was found that about 4.2% suffered from low blood pressure. In past study [12] it was found that about 12-15% women suffered from miscarriage whereas in present study about 9% suffered from miscarriage. In past study, [13] it was found that about one fourth of women suffered from joint pain, whereas 7.1%was found to be suffered from joints pain in present study.

In past study[16], it was found that about 7-24% women suffered from vaginal bleeding whereas in present study it was that about 25.7% women suffered from vaginal bleeding. In previous studies 18-21 it was found that 0.5-2% women suffered from hyperemesis gravidum whereas in present study it was found that about 8.7% women suffered from it.

In present study it was found that mostly used medicines were, folic acid for anemia, biguanides for diabetes, dopamine blocking agent and immunosuppresant for hyperemesis gravidum, antibiotics for the urinary tract infection, antihypertensives and antihypotensive agents for blood pressure, calamine lotion for itching, vitamin-D for joint pain and tranexamic acid for vaginal bleeding.

CONCLUSION

Presence of complication were related with gestational age. The diseases which greatly affected by gestational age were anemia, miscarriage and the vaginal bleeding. Mostly used medicines were, folic acid for anemia, biguanides for diabetes, dopamine blocking agent and immunosuppresant for hyperemesis gravidum, antibiotics for the urinary tract infection, antihypertensive and antihypotensive agent for blood pressure, calamine lotion for itching, vitamin d for joint pain and tranexamic acid for vaginal bleeding.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Sadeeqa S: Concept, design, final review and approval.

Maryaim A: Manuscript writing, literature review.

Sherwani AG: Literature review, data collection.

Akram S: Literature review, data collection.

Azhar S: Data entry, data collection.

Latif S: Data analysis.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.