

Management of Urogynaecological Problems in Pregnancy and Postpartum Period during Covid

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ABSTRACT

Background: Urogynaecological problems are the gynae related disorders of urinary system which affect women during pregnancy and postpartum period. Covid-19 also had an impact on these disorders.

Objective: The main objective of this study is to find out how urogynaecological problems occur in pregnancy and postpartum period and how these problems were managed during covid 19.

Study Design: Cross-sectional study

Place and Duration: Gynaecology and Obstetrics department of Al-Nafees Medical College and Hospital, Islamabad, from 5th February 2020 to 6th August 2021.

Method: We included 220 pregnant women in our study. Their age, body mass index, gestational age, mode of delivery, fetal age at the time of delivery were measured. Prevalence of urogynaecological problems in pregnant women was also noted. Among these 220 females, 50 females got infected with covid. We compared their complications with complications of pregnant women who weren't infected with covid.

Result: Body mass index of pregnant women with urogynaecological problems was 22 to 36 kg/m². 12 to 14 kg weight increased during pregnancy. Gestational age at delivery was 38 to 42 weeks. Fetal weight was 2 to 4 kg at the time of birth. 62% women had vaginal mode of delivery while 38% had cesarian. Prevalence of urinary tract infections was 7%, stress urinary incontinence was 18 to 70%, uterine prolapse was 5 to 8% in pregnant women. 45% pregnant women had increased micturition frequency. There were also some chances of formation of renal stones during pregnancy. Pregnant women who got infected with covid -19 had to face several other complications as well. These complications were managed with hygiene behaviour, balanced diet, exercise and medications.

Conclusion: Urogynaecological problems are commonly found in pregnant women due to enlargement of kidneys and increased GFR during pregnancy. During pregnancy, uterus size increases which leads to compression of ureters and increased bacterial growth. Increased growth of bacteria causes urinary tract infections. Vaginal mode of delivery increases the risk of uterine prolapse. Covid-19 also had an impact on urogynaecological problems. These problems were managed during pandemic by avoiding direct contact.

Keywords: Urogynaecological problems, Pregnancy, Postpartum period, Covid-19

INTRODUCTION

Urogynaecological problems are the gynae related disorders of urinary system. It includes following problems:

1. Urinary tract infections
2. Vaginal prolapse
3. Stress urinary incontinence
4. Overactive bladder
5. Renal stones
6. Urological cancers

Urogynaecological problems occur during pregnancy. Some are due to previous pregnancies while some are due to trauma faced by females during delivery. As we know, urinary tract undergoes into several changes during pregnancy. These changes cause urinary tract infections. These defects are mainly related to the third trimester of pregnancy. During caesarean, some females suffer from urological injuries as well. It increases the long term chances of suffering from these kind of diseases. Surgeons should be aware of these type of complications during caesarian. Meanwhile, females having vaginal deliveries suffer from uterine prolapse vaginal deliveries can cause injury to levator ani muscle as well. Some studies stated that women with these injuries are more likely to develop vaginal prolapse.

As we already know, during pregnancy, size of kidneys increases. Due to increase in size of kidneys, renal blood flow increases. More renal blood flow produces more glomerular filtrate. These changes during pregnancy decrease the serum level of urea. Moreover, ureters compressed during pregnancy due to increased size of uterus. It leads to the urinary tract infections.

Some reports stated that Covid-19 had also an impact on urogynaecological problems (1). Covid-19 was a viral infection which took lives of almost 3 to 4 million people (2). This virus started to spread worldwide in 2019 from China. It was declared

pandemic by WHO. This virus transfers from one person to another through direct contact.

Cough, Fever, Diarrhoea, migraine, back pain were the most commonly found symptoms in the patients of covid 19. (3,4). Loss of smell and taste sensations were also found in the patients of covid. It was host specific virus. It requires ACE2 for its attachment (5,6,7). ACE2 is responsible for conversion of angiotensin 2 to many other angiotensin (8).

Corona virus mainly affects the respiratory system of human body. But their receptors were also present in reproductive organs. Due to this reason, this virus got entry in the reproductive organs of human females and caused damage to them.

Corona virus affected all aspects of life. It altered the means by which healthcare unit works. Doctors somehow managed to treat non-covid patients by virtual consultations. But the delay in health care services affected the quality of life of some patients.

The main objective of this study is to find out how urogynaecological problems occur in pregnancy and postpartum period and how these problems were managed during covid 19.

METHODOLOGY

A cross sectional study was conducted on 220 females the department of Gynaecology and Obstetrics, Al-Nafees Medical College and Hospital, Islamabad from 5th February 2020 to 6th August 2021.

We included 220 pregnant women in our study who had urogynaecological problems. Cases were confirmed. Their age was between 20-45 years. We measured their body mass index. We noted how much their weight increased during pregnancy. We also observed their mode of delivery. Fetal weight was measured at the time of delivery. Prevalence of different urogynaecological problems were noted in them. Data which is related to prevalence

of disease was collected from structured interviews and clinical diagnosis. Pad test was performed. There were some differences between the symptoms which were told by patients and those which we found out after having pad test. All the patients signed consent so that we used their data for research work.

Patients who had pelvic prolapse were undergoing following methodologies:

1. Complete medical history
2. Physical examination
3. Urinalysis
4. Urine test
5. Pelvic ultrasound

Among these 220 females, 50 females got infected with covid. Cases were confirmed after PCR testing of nasal swab. Laboratory investigations were done as required. As the study was conducted on admitted patients so according to protocol and requirement of time, informed consent was taken at time of admission from attendants of patients.

All the data was analysed by SPSS 22.0. Data was collected from the record sheets of each confirmed case of covid-19 patient. We compared their complications with complications of pregnant women who weren't infected with covid. Chi-square test was done. P-value <0.05 was taken as significant.

We managed these urogynaecological problems by following methods:

1. Proper care
2. Hygiene environment
3. Proper exercises
4. Medications
5. Surgeries

RESULT

Body mass index of pregnant women with urogynaecological problems was 22 to 36 kg/m2. 12 to 14 kg weight increased during pregnancy. Gestational age at delivery was 38 to 42 weeks. Fetal weight was 2 to 4 kg at the time of birth. 62% women had vaginal mode of delivery while 38% had caesarean. Prevalence of urinary tract infections was 7% , stress urinary incontinence was 18 to 70%, uterine prolapse was 5 to 8% in pregnant women. 45% pregnant women had increased micturition frequency (Table 1). There were also some chances of formation of renal stones during pregnancy. Pregnant women who got infected with covid -19 had to face several other complications as well [Table 2]. These complications were managed with hygiene behaviour, balanced diet, exercise and medications

Management of Urogynaecological problems were shown in Table 3.

Table 1: Characteristics of pregnant women who had urogynaecological problems

Age	30 to 45 years
Number	220
Body mass index	22 to 26 kg/m2
Increased weight during pregnancy	12 to 14 kg
Gestational age at delivery	38 to 42 weeks
Fetal weight	2 to 4 kg
Mode of delivery	
1) Vaginal delivery	62%
2) Caesarian delivery	38%
Prevalence of urogynaecological disorders	
1) urinary tract infection	7%
2) stress urinary incontinence	18 to 70%
3) uterine prolapse	5 to 8%
4) overactive bladder	45%
5) renal stone	3 to 4 %
6) urological cancer	1 to 2%

Table 2: Comparison of complications between covid and non covid infected pregnant women:

Characteristics	Covid infected pregnant women	Healthy pregnant women

Number	50	50
Body mass index	40 to 42 kg/m2	22 to 36 kg/m2
Overactive bladder	48%	45%
Uterine prolapse	10%	8%
Sexual dysfunction	0	4%
Urinary stasis	Increased	normal

Table 3: Management of Urogynaecological Problems

	Management of Urogynaecological Problems
Urinary tract infection	prevented with antibiotics, hygiene behaviour and hiprex
Stress urinary incontinence	Cesarian mode of delivery can prevent this disorder. This disorder is treated with kegel exercise.
Uterine prolapse	It can be treated by surgery
Overactive bladder	Micturition frequency can maintain normal by modifying intake of water, decrease caffeine intake and proper exercise
Renal stones	Managed by proper hydration
Urological cancer	Chemotherapy done after delivery

DISCUSSION

During pregnancy, several changes occur in female's body. These changes lead to several complications as well. First of all we will discuss how urogynaecological problems occur in pregnancy and postpartum period:

Urinary tract infections: Urinary tract infections are the infections of urinary system which includes infections in kidneys, ureters, urinary bladder and urethra. Commonly, these infections occur in ureters and urinary bladder.

Urinary tract infections include complicated and non-complicated urinary infections. These infections occur due to changes in structure and function of urinary tract. Women with diabetes are at higher risk of getting this infection because of their weak immune system.

Following are the symptoms of urinary tract infections are:

1. Burning sensation while passing urine
2. Urge to urinate
3. Smelly urine
4. Blood in urine

Main cause of urinary tract infections in pregnant women is increased bacterial growth (9). Researches have found that rate of bacterial growth in pregnant women is 3-6% (10). Pregnant women with urinary tract infections have to face many complications which include preterm birth, miscarriages and premature deliveries (11).

Urinary tract infections in pregnant women can be prevented with antibiotics, hygiene behaviour and hiprex (12,13,14).

Stress urinary incontinence: This disorder causes involuntary urination (15). This involuntary urination can be occurred due to sudden rise in abdominal pressure. This pressure may be due to sneezing, coughing, and exercise.

Pelvic diaphragm which provides support to the urethra can be weakened or injured during pregnancy and child birth. Weakness of pelvic diaphragm, constipation, increased pressure of abdomen cause stress urinary incontinence in pregnant women (16, 17).

Some researches stated that vaginal mode of delivery increases the risk of damage to pelvic diaphragm which leads to stress urinary incontinence. Caesarian mode of delivery can prevent pregnant women from postpartum symptoms of this disease (18).

Women with stress urinary incontinence are treated with Kegel exercise. This exercise increases the strength of muscles of pelvic diaphragm.

Uterine Prolapse: In this disorder, support for uterus and bladder is lost that leads to downward descent of pelvic organs. Vaginal deliveries cause damage to the pelvic floor. Women with vaginal deliveries are at higher risk of losing this support (19). This disorder can also be occurred due to loss of hormones especially estrogen.

Vaginal deliveries, increased body mass index, Connective tissue disorders are the main causes of prolapsed uterus.

Following are the main symptoms of uterine prolapse:

1. Pain in lower back
2. Difficulty in walking
3. Painful urination
4. Feeling of pressure in pelvis

Use of estrogen in women with menopause can treat this disorder. Uterine prolapse can be treated with surgery. Pessary is a device which can be inserted into the vagina to provide support to it. Patients with prolapsed uterus can use this device if they don't want surgery.

Renal stones in pregnancy:

Following are the main causes of stone formation during pregnancy (20):

1. Urinary stasis
2. Gestational hydronephrosis
3. Dilation of collecting tubules
4. Increased glomerular filtration rate
5. hypercalciuria

Overactive bladder: It includes involuntary urination and urge to urinate several times a day (21). Increased level of progesterone and intact of fetal head with bladder increase micturition (22,23).

During pregnancy, uterus expands. It causes the bladder to contract. Contracted bladder is unable to store maximum urine and micturition frequency got increased.

It can be treated by modifying intake of fluid, fewer intakes of caffeine, proper exercise and with some medications.

Urological cancer in pregnancy:

It is a very rare disorder during pregnancy. Following symptoms cause the urological cancer in pregnancy:

1. hematuria
2. abdominal pain
3. urinary tract infections

Now we will discuss how these problems were managed during covid-19:

During covid -19, lockdown was implemented in all areas of the world to stop the spread of this virus.

Due to lockdown, it was not possible for doctors to come in direct contact with pregnant women for diagnosis and treatment of urogynaecological disorders.

To prevent the spread of virus, all face to face appointments were cancelled. Doctors came in contact with pregnant women via telephone for routine checkup. Patients were invited to the clinics or hospitals only for ultrasounds

Doctors and patients were advised to wear surgical masks and gloves during direct contact. They were advised to maintain social distance. All equipments were used to sanitize before and after usage.

Corona virus had an impact on all aspects of life. It totally altered the means by which we conduct health care services. Many urogynaecological problems were treated by virtual consultations. Patients were only called to the clinics when it was needed. It reduces the number of visitors to the clinic. As there were less people who visited the clinic, so there were less chances of spread of covid.

By these managements, the chances of spread of virus were reduced. It also made more space for covid patients in the hospitals. These managements also made ways for doctors to treat covid and non-covid patients simultaneously. Patients who had urogynaecological problems got their treatment as well. In this way, it lessened the burden of patients for doctors. But due to delay in proper medical care, physical and psychological health of some patients was affected.

CONCLUSION

Urogynaecological problems are commonly found in pregnant women due to enlargement of kidneys and increased GFR during pregnancy. During pregnancy, uterus size increases which leads to compression of ureters and increased bacterial growth. Increased

growth of bacteria causes urinary tract infections. Vaginal mode of delivery increases the risk of uterine prolapse. Covid-19 also had an impact on urogynaecological problems. These problems were managed during pandemic by avoiding direct contact.

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