International Journal of Advances in Medicine
Sharma SS et al. Int J Adv Med. 2018 Jun;5(3):525-529
http://www.ijmedicine.com
pISSN 2349-3925 | eISSN 2349-3933
DOI: http://dx.doi.org/10.18203/2349-3933.ijam20181662

Original Research Article

Medical complications of puerperium: a single center observational study

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Received: 09 April 2018
Accepted: 13 April 2018

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ABSTRACT

Background: Puerperium is of 6 weeks after delivery, when body reverts back to its original non-pregnant state. This period holds its own set of medical issues with frequent occurrence of gynaecological complaints like hematoma, bleeding, painful discharge and many medical issues like pyrexia, mastalgia, coagulation disorders and depression. The management of all these problems is further complicated by consideration of lactation which prohibits use of many drugs. There are many studies available in international communities that analysed women in puerperium but the data from Indian subpopulation where most deliveries are conducted in government funded institutes is lacking. The current study was an observational single center study carried out at gynaecology department along with medicine and surgery department of a tertiary care hospital associated with a medical teaching institute for defining the epidemiological parameters of the puerperal maladies.

Methods: 150 randomly selected pregnant subjects with otherwise uncomplicated pregnancies, both booked at our institute or referred at the time of delivery between January to July 2016 were included in the study. Both normal vaginal or assisted deliveries were considered irrespective of booking status. Patient not willing for consent, and patients reporting beyond 2 weeks of delivery were excluded. All patients were observed while in hospital and weekly thereafter till 6th week and detailed gynaecological, medical and psychiatric evaluation was carried out by a multidisciplinary team. Detailed evaluation of cause was carried out in all cases of pyrexia, pain or other objective symptoms and analysis of depression was done. All data were collected and analysed by spss 22.0 at the end of 6 weeks.

Results: Of the 150 patients studied, 40% had caesarean delivery while 60% had normal vaginal delivery with or without episiotomy. The most common complications noted during puerperium were wound discharge (10.67%), perineal pain (10%), fever (15%) and Mastalgia & Mastitis (13%). Depression was diagnosed in 6% of the studied cases. Cause of fever was mastitis/breast abscess in 30%, Urinary tract infection in 24%, Malaria in 7% and puerperal sepsis in 12% cases, in rest of the cases the cause of fever could not be found. The puerperal complication rate was more in LSCS 22.95% as compared with vaginal deliveries 14.6%.

Conclusions: Puerperium remains an important aspect of pregnancy where the nature of complications differs totally from those seen during antenatal period. Our study suggests that most important complications in puerperium are purulent discharge, perineal pain and pyrexia. Depression is a frequent occurrence in post-partum period and its early identification can benefit both maternal and child health. Fever in puerperium is fairly common Perineal infection, Breast infection, Urinary tract infection and Malaria being common causes. A vigilant multidisciplinary approach is required to optimally manage all these complications.

Keywords: Depression, Puerperium, Pyrexia, Puerperal-sepsis

INTRODUCTION

Puerperium is period from the delivery up-till the first few weeks. This period is usually taken to be of 6 weeks duration as most (but not all) changes associated with pregnancy labour or delivery revert to normal state at 6 weeks post-partum.[1] The pregnant term uterus (excluding the foetus amniotic fluid, and placenta) weighs around 1 kg and in the 6 weeks following delivery, the uterus involutes and returns to pre-pregnancy weight of 50-100 gm. The reduction in size and weight occurs mostly in the first 2 weeks and continues over the next several weeks.[1] The vaginal discharge, which is initially bloody known as lochia rubra, changes its character to lochia serosa in few weeks, and knowing the natural history is very important to assess for purulent discharge.[2] Various complications can occur in puerperium like complications due to retained products, sub-involution of uterus, puerperal pyrexia and sepsis, urinary complication, breast related complication (like mastitis galactocele breast abscess sore nipple), venous thrombosis due to venous stasis and procoagulant state, depression and other psychiatric disorders etc.[3]

Puerperal fever was a major cause of maternal deaths until the 19th century and although improved sanitary measures and modern antibiotics has now greatly reduced the mortality associated with puerperal fever, it still continues to remain a significant contributor of maternal morbidity and mortality in developing countries.[3] The common causes associated with puerperal fever are urinary tract infections, the incidence of which further increases due to urethral catheterization done at the time of delivery in many centres. The most common pathogens in urinary tract infection remains the same as general population. The chances of acute pyelonephritis and urosepsis increases if asymptomatic bacteruria was not looked for and treated during pregnancy. Malaria remains one of the commonest cause of fever in developing world and puerperium too is not spared. The other common causes of fever in puerperium are puerperal sepsis, retained product of conception leading to DIC and sepsis, mastitis and breast abscess, stitch site infections, thrombophlebitis associated with intravenous lines etc. Still in many cases the cause of fever could not be established.[4-6]

One very important but neglected complication of pregnancy is psychological aspect of child birth including depression. Depression during pregnancy and in puerperium has been reported in multiple studies with variable incidence, and in this population depression can be due to multiple factors like, emotional let-down, inability to cope with new responsibilities, financial and social burdens, discomfort associated with puerperal changes; hormonal changes, foetal anomalies or loss etc.[7] The problem associated with depression can be prevented by early intervention, resolution of the cause, counselling with involvement of family and relatives in management and lastly early return to normal activities soon after delivery.[8-10]

Puerperal complications have wide spectrum and many of these complications are associated with significant comorbidities and some can be life threatening. The best possible approach is to decrease their occurrence by being vigilant, promoting early ambulation and to treat them early after detection using antibiotics physiotherapy, other drugs, support, and patient education.[11] Present study was carried with the purpose of defining the various complications of puerperium with specific focus on medically manageable issues like pyrexia and depression.

METHODS

Present study was carried out in the department of Obstetrics and Gynaecology with support from Medicine and psychiatry department of a medical teaching institute of central India, primarily catering to lower socioeconomic strata of the society. After due Ethic committee clearance, between January 2016 till September 2016, 150 cases were selected randomly from the obstetrics in-patient's department who had either a vaginal or caesarean delivery in the past 2 weeks.

The patients were included irrespective of age, parity, and registration status. Patients presenting beyond period of two weeks post-delivery and those not willing for consent were excluded. Patient's particulars detailed medical surgical and obstetric history were recorded and thorough physical examination was done. All patients were evaluated for occurrence of complications like Puerperal pyrexia, Perineal pain, Breast abscess and mastitis, Episiotomy infection and gaping, Cesarean wound infection and gaping, wound dehiscence, Secondary PPH, and for Other complication like peritonitis, puerperal psychosis, postpartum depression, deep vein thrombosis, etc. Postpartum depression was assessed with "Edinburgh depression scale". All patients with temperature >100 Fahrenheit were evaluated in a stepwise manner for probable cause from complete blood count, blood film for malaria parasite, urine and blood cultures followed by h vaginal swab and culture in cases with purulent discharge or fever associated with perineal pain. In case of fever persisting beyond antibiotic therapy of more than 48 hours, cultures were repeated, and chest x ray was performed. This being an observational study, no intervention was done from our side. All collected data was analyzed using IBM SPSS 20.

RESULTS

In In the present study, most patients were multipara (60.6%) followed by primipara (30%) and least number of patients were grand multipara (9.3%) and the incidence of fever was maximum in grand multipara (21%) followed by in primipara (20%). The incidence was least in multiparous females.

Table 1: Distribution of cases by parity and relative incidence of pyrexia.

Parity	No of cases (%)	No of patients with pyrexia	%
Primipara	45 (30)	9	20
Multipara	91 (60.6)	11	12.08
Grand Multpara (P>4)	14 (9.3)	3	21

In the present study, most patients delivered vaginally (59.34%). Caesarean section rate was 40.66%. Complication rates were high in Caesarean section cases (22.95%) as compared to the cases which delivered vaginally (14.6%).

Table 2: Distribution of cases according to mode of delivery.

Mode of delivery	No. of cases	%
Vaginal	42	28.00
Vaginal with episotomy	47	31.34
LSCS	61	40.66
Total	150	100

In In the present study, we found that wound discharge was the most common complication, accounting for 10.67% of total cases.

Table 3: Complication rates according to mode of delivery.

Mode of delivery	Total No. of cases	No. of Patients with Complications	Complication rate (%)
Vaginal	89	13	14.60
LSCS	61	14	22.95
Total	150	27	37.55

The second most common complication was perineal pain affecting 10% of cases. The other complications were breast pain/ tenderness/engorgement/mastitis (13%) and postnatal depression (6%).

Table 4: Distribution of types of puerperal complications.

Puerperal Complication	%
Wound discharge	10.67
Perineal pain	10
Fever	15
Pain in breasts/ Mastitis	13 (8%+ 5%)
Postnatal depression	6

In In the present study, causes of fever were mastitis/breast abscess in 30%, Urinary tract infection in 24%, Malaria in 7% and puerperal sepsis in 12% cases, in rest of the cases the cause of fever could not be found.

Table 5: Causes of fever.

Cause	%
Mastitis/breast abscess	30
Urinary tract infection	24
Puerperal Sepsis	12
Malaria	7

Table 6: Association of postnatal depression.

	Cases with Postnatal Depression	Outcome		%
		Male	Female	
LSCS	3	1	2	2
Vaginal	6	5	1	4
Total	9	6	3	6

DISCUSSION

In the present study, most patients were multipara (60.6%) followed by primipara (30%) and least number of patients were grand multipara (9.3%) but the incidence of fever was maximum in grand multipara (21%) followed by in primipara (20%). The incidence was least in multiparous patients. These finding are in consensus with Kaur et al who also found that lower maternal age and primiparity were high risk factors for infectious puerperal complications. The complications rate also increased in grand multipara.[12,13]

In the present study, relative incidence of complications in cases of LSCS was higher (22.95%) as compared to vaginal deliveries. Burrow et al., in 2004 reported that route of delivery is the single most important factor for the development of uterine infection.[14] Similar findings have been reported by Loverro et al., in an analysis of postsurgical febrile morbidity found 5.14% of caesarean section presented with infectious complications which was higher than that after vaginal delivery (0.29%).[15]

In the present study wound discharge was the most common surgery related complication seen in puerperium, accounting for 10.67% of total cases followed by perineal pain affecting 10.00% of cases. These findings are consistent with those reported by Loverro et al.[15]

In the current study, was breast pain/ tenderness and engorgement were seen in 8.00%, and mastitis or breast abscess in 5% cases. Various studies have reported grossly different incidence of breast abscess and mastalgia. Barbosa and Cesnik et al., in 2003, reported mastitis and breast abscess incidence between 2 to 33%. This variable incidence can be due to various sample size and characteristic, social patterns and breast-feeding practices.[16]

In the present study the incidence of pyrexia was 15%, In the study conducted by Yokoe DS et al, incidence of

fever was approximately 5-7% and maximum cases of fever were seen after 2 days of birth.[5] According to the study of Mutihir JT et al, the commonest early puerperal complication was fever (56.1%) followed by perineal pain, abdominal pain, breast engorgement and secondary PPH.[17] The findings of in the present study differ from the above large studies. This could be due to increasing number of institutional deliveries and awareness regarding hygiene in patients. Increasing immunization rates and awareness in doctors regarding intrapartum factors that can affect post-partum health like asymptomatic bacteruria has also led to reduction in incidence of puerperal infection.

In the present study the causes of fever were Mastitis/breast abscess in 30%, Urinary tract infection in 24%, Malaria in 7% and puerperal sepsis in 12% cases, in rest of the cases the cause of fever could not be found. Incidence of mastistis in the Cochrane review was 2% to 33% of all postpartum women.[16]

Boel ME et al, reported an incidence of 22.6% of malaria in post-partum cases. The incidence of malaria reported in the present study is less than expected which could be because many patients received partial treatment prior to reporting for admission leading to low plasmodium index and making diagnosis more difficult.[18]

The incidence of UTI was 24% of all reported pyrexia cases. According to the study of Stray-Pedersen B et al, Postpartum bacteriuria has been documented in 8-12% of postpartum women when using midstream urine samples but only 3.2% by suprapubic aspiration.[19] UTI remains a major cause of fever in pregnancy and puerperium and may lead to sepsis, pyelonephritis and even death in some patients. The incidence of UTI further increases in puerperium due to use of indwelling catheters during delivery.[3,4].

Depression was diagnosed in 6% of the studied cases in present cohort. In a similar study of Xanthoula DR et al the prevalence of depression during the postpartum period has been systematically assessed; controlled studies show that between 10% and 28% of women experience a major depressive episode in the postpartum period, with the majority of studies favoring a 10% figure.[7]

CONCLUSION

Puerperium is relatively the overlooked part of pregnancy where the rates of complications are fairly high with variable presentation involving multiple system. These complications differ a lot from those of pregnant status. A team approach is essential in proper evaluation and treatment of these issues as multitude of issues need to be addressed like consideration of lactation and breast feeding, healing of wounds of LSCS and episiotomy, emotional status of the patient etc. Puerperal pyrexia and sepsis remain a common cause of morbidity and mortality in puerperal patients even though their incidence has reduced with increasing awareness, more institutional deliveries conducted by trained personnel and due to proper hygiene. Also, the outcome of these complications has shown persistent improvement due to better diagnostic facilities and multiple therapeutic options. The incidence of all complications is higher in caesarean deliveries and keeping this in mind while dealing with patients in puerperium is imperative. Most infectious complications of puerperium are avoidable and simple measures like increasing awareness about proper hand hygiene, sanitary precautions while dealing with normal vaginal discharge, proper breast care and feeding practices, promotion of breast feeding, avoidance of indwelling urinary catheters etc. can prevent many patients from these maladies. Urinary tract infections, mastitis and breast abscess, malaria and puerperal infection and sepsis all are common causes of fever in puerperium. Puerperal sepsis carries very high mortality rates and should be managed with multidisciplinary care with methodical approach to find out the source and treating it aggressively. The complications incidence and outcomes differ due to changes in socioeconomic and demographic structure and many more studies are required to better estimate the problem burden, risk factors and best management approach to problems of puerperium.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Sharma SS, Bhattacharjee S, Kashyap A, Thakur A, Dubey S. Medical complications of puerperium: a single center observational study. Int J Adv Med 2018;5:525-9.