Comparison of Incidence of Low Back Pain in Women with Normal Vaginal Delivery and Cesarean Section

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ABSTRACT

Objective: To compare the incidence of low back pain between women who underwent caesarean section and those had normal vaginal delivery.

Methods: This comparative study was conducted in Dow university hospital from January 2014-December 2017. Total 340 patients coming in Orthopaedics OPD with backache fulfilling the inclusion criteria were enrolled in the study after taking informed consent. Questionnaires were filled by the research team members.

Results: Mean age of the respondents was 28 years, with mean parity was 4.2, 170(50%) delivered via normal vaginal delivery, 170(50%) (%) via Caesarean section. 20(5.8) %, out of them got general anesthesia,150 (94.2%) were given regional anesthesia. Out of those 150 who got regional anesthesia,105(70%) got spinal anesthesia and 45(30%)patient got epidural anesthesia. Patients who underwent C-section, 48(28.8%)%) had elective C-section, 122(61.7%%) had emergency C-section. Back pain was started in 15(4.4%) before pregnancy, 50(16.9%) during pregnancy and 266(77.3 %) after delivery. Regarding intensity of pain, 23(6.7 %) respondents mild backache, 175(50.9%) moderate and 140(40.7%) severe backache.

Conclusion: Low back pain is a problem in women after delivery either with cesarean section or normal vaginal delivery. There are certain risk factors which are associated with low back ache, those can be avoided needs specific strategies and management plan during pregnancy, at the time of delivery or during the administration of anesthesia

Key Words: Low backache, caesarean section

INTRODUCTION

During pregnancy and after delivery low backache is prevalent. Studies reported half of the pregnant population suffers from this problem [1,2,3]. The etiology is not yet properly understood [4].

The low backache persists even after delivery and the incidence ranges from 5-40% post delivery [5]. It not only results in disabilities but it also affects the general well being of the patient. Twenty percent women with back pain during pregnancy complains of persistent pain even 3 years after delivery [6,7]. In order to accommodate the expanding uterus, positional changes occur in the body and abdominal muscles get weakened. Furthermore hormonal changes loosen the joints and ligaments of pelvic girdle that causes unstable walking. Due to repetitive stress, integrity of spine is compromised in order to hold and lift the child. It causes repetitive injury to the zygo apophyseal joints, disc, muscles, ligaments and joints of spine due to twisting, torquing and poor posture. During pregnancy estrogen, progesterone and relaxin cause generalized muscles and ligaments laxity that compromises the stability of spine [8]. Many patients have a shift of the center of gravity to the heel of feet; develop hyperlordosis, hyperkyphosis, reversal of spinal curve. Zygo aphyseal joints and lumbar spine come under further stress with advancing pregnancy due to increased abdominal girth [8].

Back pain following Cesarean section causes such disability, which seriously affects the quality of life of women so much so that she cannot perform routine activities. Whether epidural anesthesia is responsible for this post delivery persistent backache or not it is still controversial [9]. Randomized and prospective studies show no difference in incidence of postpartum pain who were given epidural anesthesia during labor and women who do not [10,11,12]. Similarly, according to some studies spinal anesthesia has not been associated with post partum low back pain during vaginal delivery and Caesarean section [13].

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Rationale of this study is to find association of backache with the mode of delivery. To my knowledge this study has never been conducted in Pakistan. It will add to the existing literature showing the results of the study in our population.

METHODS

This study was conducted prospectively in Dow university hospital from January 2014-December 2017. Patients coming in Orthopedics OPD with backache fulfilling the inclusion criteria were enrolled in the study after taking informed consent. Total 340 patients were enrolled. The research team members themselves comprising of 14 questions filled questionnaires. Questionnaires were in English, Urdu and Sindhi language. Inclusion criteria was all women with lower back ach who have undergone at least one delivery either vaginal or by C-section by spinal or epidural anesthesia. Patient's aged between16-45 without any previous co morbidities directly related to back ache (e.g prolapsed intervertebral disc. Exclusion criteria were women above 45 years of age, with previous history of prolapsed intervertebral disc, spondylosis, arthritis and osteoporosis, tumor or infection of spine.

Statistical Analysis:

Incidence of low back pain in cases delivered with C-section and those with normal vaginal delivery were calculated and the F test in analysis of variance the chi-square test were used to examine the difference between the two groups. SPSS version 16 was used for statistical analysis.

RESULTS

Mean age of the respondents was 28 years, while mean parity was 4.2, 170(50%%) delivered via normal vaginal delivery, 170(50%) ~~via~~ underwent Cesarean section. 20(5.8) %, out of them were given general anesthesia, 150(94.2%)regional anesthesia. Out of those 150 patients who got regional anesthesia,105(70%)got spinal anesthesia where as 45(30%)got epidural anesthesia. Patients who underwent C-section, 48(28.8%) had elective C-section, 122 (71.7%%) had emergency C section. Back pain started, 15(4.4%) before pregnancy, 50(16.9%) during pregnancy and 266(77.3 %) after pregnancy. Regarding intensity of pain, 23(6.7 %) respondents had mild backache, 175(50.9%) moderate, 140(40.7%) had severe back pain. Duration of pain was 31(9%) had pain 3-6 months after pregnancy, (70(20.3%) had for 6-12 months, 239(69.5%) had more than one year after delivery. Frequency of pain after pregnancy was 149(43.3%) had recurrent pain, 188(54.7%) had persistent pain.

Chi square test was used to see the association between of delivery and persistent pain after delivery shows those delivered via normal vaginal delivery 59(34.9%) had recurrent pain, 110(65.1%) had persistent pain where as 90(52.9%) those delivered through Cesarean section had recurrent pain and 78(45.9%) had severe pain. P value is .001, which shows those who delivered with normal vaginal delivery had more persistent pain where as those who delivered via C-section had recurrent pain mostly.

When association between type of anesthesia and post delivery back pain was seen the result showed 55(43.3%) those who had spinal anesthesia had recurrent pain and 24(48%) had persistent pain where as those who had epidural anesthesia 24(48%) had recurrent pain and 149(44%) had persistent pain. P value is 0.445, which shows no association between type of anesthesia and backache [14].

Mode of delivery * after pregnancy Cross tabulation

			after pregnancy			
			Recurrent pain	Persistent pain	22	Total
Mode of delivery	NVD	Count	59	110	0	169
		% within Mode of delivery	34.9%	65.1%	.0%	100.0%
	C Section	Count	90	78	2	170
		% within Mode of delivery	52.9%	45.9%	1.2%	100.0%
Total		Count	149	188	2	339

Mode of delivery * after pregnancy Cross tabulation						
			after pregnancy			
			Recurrent pain	Persistent pain	22	Total
Mode of delivery	NVD	Count	59	110	0	169
		% within Mode of delivery	34.9%	65.1%	.0%	100.0%
	C Section	Count	90	78	2	170
		% within Mode of delivery	52.9%	45.9%	1.2%	100.0%
Total		Count	149	188	2	339
		% within Mode of delivery	44.0%	55.5%	.6%	100.0%

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.894[a]	2	.001
Likelihood Ratio	14.740	2	.001
Linear-by-Linear Association	.064	1	.800
N of Valid Cases	339		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.00.

Type * after pregnancy Cross tabulation						
			After Pregnancy			
			Recurrent pain	Persistent pain	22	Total
Type	Spinal	Count	55	70	2	127
		% within Type	43.3%	55.1%	1.6%	100.0%
	Epidural	Count	24	26	0	50
		% within Type	48.0%	52.0%	.0%	100.0%
	none	Count	70	92	0	162
		% within Type	43.2%	56.8%	.0%	100.0%
Total		Count	149	188	2	339
		% within Type	44.0%	55.5%	.6%	100.0%

Chi-Square Tests			
	Value	**Df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	3.720[a]	4	.445
Likelihood Ratio	4.305	4	.366
Linear-by-Linear Association	2.449	1	.118
N of Valid Cases	339		

a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is .29.

DISCUSSION:

55(43.3%) those who had spinal anesthesia had recurrent pain and 24(48%) had persistent pain as shown in table 6. Where as those who had epidural anesthesia 24(48%) had recurrent pain and 149(44%) had persistent pain, Chi Square shows no association between type of anesthesia and post delivery backache. This is also evident from a study done by Drew et al from a large representative sample of middle aged Australian women to explore association between low back ache and Caesarean section and they found no such association between two [14]. Nikolajesen did a study and found that there is a higher incidence of pain that received general anesthesia and believe that for chronic backache it is an important predictive factor [15]. In contrast our study shows no significant difference in incidence of pain that given general anesthesia and those who has given regional anesthesia. One reason for low back pain may be the epidural hematoma other spontaneous or secondary to spinal or epidural anesthesia. Nociceptors, which are present in intramuscular and periosteal tissues, get activated secondary to epidural needle insertion [16]. A study done by Chia et al shows there are certain other risk factors which are associated with the low back pain e.g multiple gestation, greater age, diabetes, obesity, pregnancy induced hypertension, pre eclampsia and socio economic factors [17].

This study shows 31(9%) had pain 3-6 months after pregnancy, (70(20.3%) had for 6-12 months, 239(69.5%) had more than one year after delivery. According to a study done by Joshi et al, 51% had remission of pain at one month, 78% had at 6 months in group of patients who underwent Cesarean section while in normal vaginal delivery group it ease 55% at one month and 85% at 6 month after delivery [18]. According to our study 15(4.4%) had pain before pregnancy, 50(16.9%) during pregnancy and % had pain after pregnancy. A study done by Mogren et al the severity and initiation of pain during pregnancy are the strong predictors of low back pain [4,9].

The main limitation of this study is the data interpretation because of self-reporting and restricted response to frequency of symptoms. This study has some confounding variables in questionnaire, which did not include other risk factors such a genetic/familial traits, emotional distress, occupation and depression. Sample size is small and from limited area of the country, large cross sectional studies should be done across the country so that this increasing burden on the economy of our country can be handled in a better way.

CONCLUSION

Low back pain is common problem in women after delivery either with cesarean section or normal vaginal delivery. There are certain risk factors, which are associated with low back ache, those can be avoided needs specific strategies and management plan during pregnancy, at the time of delivery or during the administration of anesthesia.

Conflict 0f Interest Statement:

There is no conflict of interest of any author what so ever attached with this manuscript including personal, commercial, political, academic or financial

REFERENCES

1. Kristiansson P, Svardsudd K, Von Schoultz B. Back pain during pregnancy: a prospective study. Spine (Phila Pa 1976) 1996 Mar;21:702–709.
2. Mogren IM, Pohjanen AI. Low back pain and pelvic pain during pregnancy: prevalence and risk factors. Spine (Phila Pa 1976). 2005 Apr 15;30(8):983-91.
3. Ostgaard HC, Andersson GB, Karlsson K. Prevalence of back pain in pregnancy. Spine (Phila Pa 1976). 1991 May;16(5):549-52.
4. Mogren IM. Does caesarean section negatively influence the postpartum prognosis of low back pain and pelvic pain during pregnancy? Eur Spine J. 2007 Jan;16(1):115-21. Epub 2006 May 5.
5. Ostgaard HC, Andersson GB. Postpartum low-back pain. Spine (Phila Pa 1976). 1992 Jan;17(1):53-5.
6. Ostgaard HC, Roos-Hansson E, Zetherstrom G. Regression of back and posterior pelvic pain after pregnancy. Spine (Phila Pa 1976). 1996 Dec 1;21(23):2777-80.
7. Noren L, Ostgaard S, Johansson G, Ostgaard HC. Lumbar back and posterior pelvic pain during pregnancy: a 3-year follow-up. Eur Spine J. 2002 Jun;11(3):267-71.
8. Joshi A, Joshi C Comparative study of occurrence of postpartum low back pain (LBPP) after normal delivery versus ceasarean section (CS) following spinal anaesthesia and its rehabilitative management. International Journal of Therapies and Rehabilitation Research 2016; 5 (4): 24-27.

9. Cancado TO, Omais M, Ashmawi HA, Torres MLA. Chronic pain after Caesarean section. Influence of anesthetic/surgical technique and postoperative analgesia. Rrev Bras Anestesiol 2012 Nov-Dec;62:6:762-774.
10. Breen TW, Ransil BJ, Groves PA, Oriol NE. Factors associated with back pain after childbirth. Anesthesiology 1994 Jul;81:29–34.
11. Howell CJ, Dean T, Lucking LD ziedzic K, Jones PW, Johanson RB. Randomized study of long term outcome after epidural versus non-epidural analgesia during labour. BMJ 2002 Aug;325:357.
12. Russell R, Dundas R, Reynolds F. Long term backache after childbirth: prospective search for causative factors. BMJ 1996 Jun;312:1384–1388.
13. Wang CH, Cheng KW, Neoh CA, TangS, Jawan B, Lee JH Comparison of the incidence of postpartum low back pain in natural childbirth and caesarean section with spinal anesthesia. Acta Anaesthesiol Sin 1994 Dec;32:243–246.
14. Drew MK, Sibbrit D, Charlie P. No association between previous Caesarean section delivery and back pain in mid age Australian women. Australian journal of physiotherapy; 2008;54:269-272.
15. Luijendijk RW, Jeekel J, Storm RK. The low transverse pfenestial incision and the prevalence of incisional hernia and nerve entrapment. Ann Surg. 1997 Apr;225:365-369.
16. Mc Evilly M, Buggy D. Back pain and pregnancy: a review. Pain 1996 Mar;64:405-414.
17. Chia YY, Lo Y, Chen YB, Liu CP, Haung WC, Wen CH. Risk of chronic low back pain among parturient who undergo cesarean delivery with neuraxial anesthesia. Medicine (Baltimore) 2016 Apr:95(16).
18. Anil Kumar Joshi, Chitra Joshi. Comparative study of occurrence of post partum low back and pelvic pain after normal delivery versus Caesarean section following spinal anesthesia and its rehabilitative management. International journal of therapies and rehabilitation research 2016;5(4):24-29.