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PREVALENCE OF POSTPARTUM LOW BACK PAIN: ANALYSIS OF THE RISK AND PROTECTIVE FACTORS

Sort Title : Low back pain, Prevalence, risk factor, Protective factors

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ความชุกของการปวดหลังในสตรีหลังคลอด : การวิเคราะห์ปัจจัยเสี่ยงและปัจจัยปกป้อง

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บทคัดย่อ

วัตถุประสงค์ เพื่อประเมินความชุกของโรค ความรุนแรง และความเสี่ยงในทางคลินิกของการปวดหลังภายหลังการคลอดในสตรีที่มีสุขภาพแข็งแรง

วิธีการ ทำการศึกษาสตรีหลังคลอดจำนวน 200 คน โดยวิธีการสุ่มจากสตรีที่พาลูกมาตรวจสุขภาพเด็กที่โรงพยาบาลศรีนครินทร์ ทำการซักประวัติและตรวจร่างกายโดยแพทย์ออร์โธปิดิคส์และแพทย์เวชศาสตร์ฟื้นฟู บันทึกข้อมูลเกี่ยวกับการปวดหลังและใช้ visual analog scale วัดความรุนแรงของอาการปวด

ผล สตรีหลังคลอดอายุเฉลี่ย 27.1 + 4.5 ปี ระยะเวลาหลังคลอดเฉลี่ย 8.3 + 6.5 เดือน พบว่ามีอาการปวดหลัง 35.5% (71 ใน 200 คน) ในกลุ่มที่มีอาการปวดหลัง มีค่าความเจ็บปวดเฉลี่ย 30.1 + 26.7 และ 90% ใช้วิธีนอนพักเพื่อบรรเทาอาการปวด กลุ่มที่มีอาการปวดหลังมีจำนวนครั้งของการตั้งครรภ์มากกว่า และเคยมีอาการปวดหลังมาก่อนตั้งครรภ์มากกว่ากลุ่มที่ไม่มีอาการปวดหลังอย่างมีนัยสำคัญ ($p < 0.001$) สำหรับอายุและรายได้ของครอบครัวไม่แตกต่างกันทั้งในกลุ่มที่มีและไม่มีอาการปวดหลัง นอกจากนี้กลุ่มที่มีอาการปวดหลังมีการอยู่ไฟหลังคลอดน้อยกว่ากลุ่มที่ไม่มีอาการปวดหลังอย่างมีนัยสำคัญ ($p<0.001$)

สรุป ความชุกของการปวดหลังจากการศึกษานี้ไม่ต่างจากการศึกษาอื่นๆ ยกเว้นในเรื่องความสัมพันธ์กับสภาพทางเศรษฐกิจสังคม การอยู่ไฟแบบประเพณีดั้งเดิมของไทย อาจเป็นปัจจัยปกป้องอาการปวดหลังภายหลังการคลอด แต่ยังไม่ทราบกลไกที่แน่ชัด

Abstract

Objective. To evaluate the prevalence, severity and clinical risk associated with postpartum low back pain among otherwise healthy Thai women.

Methods. Two hundred women attending the well baby clinic at Srinagarind Hospital were randomly selected for study to identify postpartum patients with symptomatic low back pain. A complete history and physical examination were performed by an orthopaedic surgeon and a physiatist. Data included any history of back pain and a visual analog scale for pain.

Results. At an average fo 8.3 $\pm$ 6.5 months postpartum, patients with a mean age of 27.1 $\pm$ 4.5 years, exhibited a 35.5% [17/200 women] prevalence of symptomatic low back pain. Among the symptomatic group, average pain scale was 30.1 $\pm$ 26.7 and 90% had required bed rest to achieve relief. Analysis disclosed a significantly [P<0.001] greater parity and higher frequency of prior back pain among the symptomatic group. Patient age and family income were not different by group. Symptomatic women were significantly [P<0.001] less likely to have been compliant with the thai traditional postpartum ritual.

Conclusions. The prevalence data from this study are consistent with those of other studies except for the lack of a correlation with socioeconomic status. The Thai-traditional postpartum ritual may be protective against postpartum back pain but the factors responsible for that effect remain uncertain.

Back pain occurs at some time during pregnancy or postpartum more than 50% of all pregnant women (1,2,3,4,6,7,8,9). Many authors have even found a correlation between menstrual pain and acute low-back pain during pregancy (9). Pre-pregnancy back pain was found to correlate with age and multiparity. Ostgaard and Anderson (8) found that heavy physical work was associated with postpartum low back pain.

There are clinical factors which are considered to have potential as confounding variables but previous research on this problem is minimal. In addition, there are no reports which document the strength and magnitude of the association between postpartum low back pain and risk factors. This study was undertaken to determine the prevalence of low back pain in the postpartum period and to identify its clinical correlates in hopes of reducing its severity and preventing recurrences.

Study Population. Two hundred women who brought their babies to attend the well baby clinic at Srinagarind Hospital were randomly selected from a pool of 4,750 women over the course of one [1991-1992] year.

Evaluations. A complete history and physical examination were performed by an orthopaedic surgeon and a physiatrist. A questionnaire instrument included questions about age, number of previous pregnancies, occupation, level of education, family income, number of days in the maternal-leave period, where they take care of the babies, whether they practiced the Thai-traditional postpartum ritual, and previous or ongoing back pain.

Objective measurements included patient height, weight, abdominal circumference and a careful neurological examination. In condition, patients marked a 10 cm visual analogue scale for pain and indicated the location of their discomfort on standard pain drawings.

The Thai-traditional postpartum practice is a ritualistic process which includes lying supine on a firm wooden board near a fireplace for 20 hours each day for 5-15 days, drinking only the warm water and eating only boiled rice with salt. At the time of

clinical assessment, patients were asked to state whether or not they followed this practice during their postpartum period.

Analysis. The resultant data were entered into a computer and analyzed by SPSS statistical soft ware. The continuous variables for the symptomatic low back pain group 1 and the *no low back pain comparison group 2 were compared by the Student's t test statistic. Associations between clinical variables and postpartum low back pain were obtained by chi square analysis or the Fisher exact test, when appropriate.

Step-wise logistic regression analysis was used to determine which variables were independently associated with the low back pain in the postpartum period and to estimate the odd ratios for those variables while simultaneously controlling for the other variables which may have influenced the rates of low back pain in the postpartum period.

Results

During the one year period of the study, there were 200 postpartum volunteers from among a total of 4,750 postpartum individuals evaluated. The average age of the 200 subjects was 27.1 $\pm$ 4.5 years [range 17-45]. The highest education level achieved was primary school for 30% , secondary school for 40%, university for 30%. Most of the women had two children [range 1-3]. Their most recent pregnancy had terminated an average of 8.3 $\pm$ 6.5 months [range one-60 months] earlier. The average baby weight at birth was 3093.3 $\pm$ 434.1 grams [range 1420-4200 gm]. The average physical dimensions of mothers were weight 51.94 $\pm$ 6.62 Kg, and height 155.57 $\pm$ 6.57 centimeters [range 140 - 198].

The majority [n=133, 67%] of the women had a maid to help them with household tasks and 92% had maternal leave from work after delivery for an average of 32.6 $\pm$ 19.2 [range 0-90] days. Seventy-four of the 200 women [37%] reported compliance with the Thai-traditional postpartum practice for 5-15 days [median 10 days]. The women cared for their babies in a hammock, on the floor or in the bed [31.5%, 15%, and 14% respectively].

Seventy one of the 200 women [35.5%] complained of having low back pain during the pospartum period. Their pain was most commonly located in the lumbar area but no patient reported radicular pain radiating down the legs. The breast feeding was usually accomplished in the sitting position without back or arm support. That position was thought by most patients to aggravate low back pain [80% of low back pain women]. The average pain scale as 30.1 $\pm$ 26.7 [range from 10 - 100]. Most mothers [90%] would lie down to obtain relief from their low back pain. The average duration of back pain was 8.0 $\pm$ 6.5 months. On the physical examination, there was no definite point of tenderness or motor/sensory deficit among these women.

Table 1 contrasts the clinical and demographic features of these mothers experiencing symptomatic low-back pain were significantly more likely to be multiparous and to have had a history of previous low back pain. By contrast, mothers with postpartum back pain were significantly less likely to have practiced the Thai-traditional postpartum ritual:

Logistic regression analyses were performed to assess the independent effects of the variables on the postpartum back pain. Only multiparity, previous history of low back pain and the practice of Thai-traditional postpartum ritual were associated with postpartum low back pain [Table 2]. The odds ratio for multiparity was 2.03 [95 percent confidence interval, 0.89-4.62] while the odds ratio for previous low back pain was 85.69 [95% confidence interval, 31.17 - 235.35]. The odds ratio for compliance with the Thai-traditional postpartum ritual was 0.44 [95% confidence interval, 0.22 - 0.88].

Discussion

A cross sectional study is one appropriate means of examining the epidemiology of a chronic disease. The prevalence rate of low-back pain in the present study was 35.5%, which was similar to the rates observed in a previous report (9). The nature of the low-back pain evaluated study was apparently less severe than that described by Svensson, et. al. (9) since sick-leave due to low back pain among the Thai patient participants was minimal.

The previous report (9) observed several clinical or demographic factors to be associated with low back pain in women, but that study involved a patients of different ethnic background and used a different statistical method to identify the association. In the present study the logistical regression analysis was used to identify factors associated with low back pain.

In contrast to the report by Berg, et. al., (2) the type of work and level of income were not associated with the development of postpartum low vack pain among thai patients. This difference may also due to the method of analysis, the previous study used only the univariate analysis or simple chi sguare which might fail to detect the true or confounding factors. In the present study there were two factors associated with increased risk and one apparently protective factor associated with low back pain in the postpartyum period. These findings were similar to those of other reports (2,8). The present study was intended to not only to identify the risk factors but also measured the magnitude of the risks. It is obvious that the most dramatic of the observed risk factors is a prior history of back pain with an odds ratio approaching 100.

Interestingly, adherence to the Thai-traditional postpartum ritual appeared to be protective against the development of low back pain. The reason for this protective effect is not clear but the application of heat and rest for a period of five to 15 days may be responsible. Moreover, heat has many physiological effects such as sedation, analgesia, relief of muscle spasm, increase metabolism and vasodilation. These effects may influence the physiology of the mother during podtpartum period (5). Clearly a randomized, controlled, clinical trial will be needed to confirm protective effects of Thai-traditional postpartum ritual on the low back pain of postpartum women.

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Table 1. Demographic and clinical characteristics of mothers with and without postpartum low-back pain.

	Group 1 Low-back pain (N = 71)	**Group 2 No back pain (N = 129)**
Age (years)	27.7 + 4.036	26.9 + 4.720
Income (Baht)	4146.7 + 3661.8	4014.0 + 3889.5
Baby weight (Grams)	2953.7 + 498.4	3147.0 + 397.3
Mother (Kilogramd)	53.0 + 6.5	51.5 + 6.7
Mother height (cm)	155.5 + 4.9	155.6 + 7.1
Number of children* >one	37 [52%]	35 [27%]
Housemaid [yes]	40 [56%]	93 [72%]
Back pain before*	59 [83%]	7 [5%]
Labor leave [yes]	69 [97%]	115 [89%]
Thai-traditional* postpartum practice.	18 [25%]	56 [43%]
Take care of baby one bed	35 [49%]	60 [46%]
Abdominal Circumference [cm]	70 + 7	69 + 8

*P< 0.001

Table 2. Logistic regession analyses of variables.

Variables	Coefficient	Standard Error	Coeff/ SE	Odd Ratio 95% CI
Number of Children	0.71605	0.419	1.696	2.03 [0.89-4.62] P = 0.0016
Back pain before and during pregnancy	4.45073	0.515	8.633	85.69 [31.17 - 235.35] P < 0.000010
Thai-traditional bed	-0.82098	0.353	−2.321	0.44 [0.22-0.88] P = 0.0001
Constant	0.15603	1.011	0.154	1.169