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Original Investigation

Impact of Functional Status on the Quality of Life of Pregnant Women with Lumbopelvic Pain

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Abstract

Objective: To evaluate the functional status of pregnant women with lumbopelvic pain (LPP) and to determine its effect on their health-related quality of life with respect to physical, social, and emotional functions.

Methods: A total of 127 pregnant women at 8–39 gestational weeks who were admitted to our outpatient pregnancy clinic were included in the study. Of these patients, 83 pregnant women who reported LPP for at least 2 weeks formed the LPP group and the remaining 44 pregnant women formed the control group. The Oswestry Disability Index (ODI) was used for assessing functional status, and the Nottingham Health Profile (NHP) was used for assessing the health-related quality of life. The severity of pain was measured using a visual analog scale (VAS pain).

Results: The scores of the LPP group were significantly higher than those of the control group in ODI and in the pain, physical mobility, and energy subscales of NHP ($p<0.001$). The scores of ODI correlated with those of VAS pain and those of pain, physical mobility, energy, sleep, social isolation, and emotional reaction subgroups of NHP ($p<0.01$, $r=0.67$, 0.54, 0.46, 0.49, 0.41, 0.29, and 0.38, respectively). The highest correlation was between ODI and VAS pain ($r=0.67$).

Conclusion: LPP is common in pregnant women and causes functional limitation and decreased health-related quality of life. Identifying pregnancy-related LPP and its treatment will result in an increase in the quality of life.

Keywords: Pain, pregnancy, quality of life

Introduction

Pregnancy-related lumbopelvic pain (LPP) is defined as recurrent or constant pain for more than 1 week in the lumbopelvic region during pregnancy (1). It is a common musculoskeletal disorder that occurs in more than 50% of pregnant women (2). We do not exactly know what causes pregnancy-related LPP. In a study by Sihvonen et al. (3), it was considered that pregnancy-related LPP may result from a disturbance in the relaxation of back muscles. There are some risk factors that may be associated with pregnancy-related LPP. These factors are multiparity, higher body mass index (BMI), pre-pregnancy history of LPP, and previous pregnancy-related LPP (4). Larsen et al. (5) reported that a lack of exercise is a predisposing factor for LPP in pregnant women.

Health-related quality of life (HRQoL) is the gratification taken from life, happiness, and the way human beings perceive their situation within the system of culture and values (6). Pregnancy-related LPP can result in serious morbidity, thereby reducing HRQoL (7).

The aim of this study was to investigate functional status in pregnant women with LPP and to determine its effect on HRQoL with respect to physical, social, and emotional functioning.

Methods

A total of 127 pregnant women at 8–39 gestational weeks who were admitted to our outpatient pregnancy clinic between January 2011 and January 2013 were consecutively enrolled in this study. Of these patients, 83 pregnant women who reported LPP for at least 2 weeks formed the LPP group and the remaining 44 pregnant women without LPP formed the control group. Participants who have a history of ankylosing spondylitis, fibromyalgia syndrome and other rheumatic diseases, herniated lumbar disc, and lumbosacral radiculopathy were excluded. Pregnancy Information regarding the pregnancies, such as age, gestational week, parity, and BMI, was noted. Functional status was measured using the Oswestry Disability Index (ODI) (8). ODI is a 10-item questionnaire, which was developed to identify functional limitation due to low back pain. Each item is scored between 0 and 5, thus giving a final score that is expressed as a percentage (8). The Nottingham Health Profile (NHP) was used for assessing HRQoL (9). The 10-cm visual analog scale (VAS pain) was used for determining the severity of pain (10).

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Written informed consent was obtained from all the participants. The study conforms to the provisions of the World Medical Association's Declaration of Helsinki.

Statistical analysis

Descriptive statistics [mean, median, SD (Standard deviation), minimum, maximum, and frequencies] were used for assessing the demographics and clinical parameters. Differences among groups were assessed using the independent samples t-test. The presence of correlation was evaluated by Pearson's correlation coefficients. A value of $p<0.01$ was considered statistically significant. All analyses were performed using IBM Statistical Package for the Social Sciences (SPSS) for Windows, Version 21.0 (Armonk, New York, USA).

Results

A total of 83 pregnant women with LPP and 44 controls were included in the study. The mean age was 28.05±5.42 years in the LPP group and 28.16±5.3 years in the control group. Age did not significantly differ among the groups ($p=0.91$). Demographic data and clinical characteristics of the pregnant women are summarized in Table 1.

Functional status and health-related quality of life

The mean ODI score was 35.98±18.24 in the LPP group and 19.05±14.13 in the control group. The mean±SD HRQoL scores of both the groups in the pain, physical mobility, energy, sleep, social isolation, and emotional reactions subgroups of NHP are given in Table 2. The LPP group scored significantly higher in ODI and the pain, physical mobility, and energy subgroups of NHP than the controls ($p<0.001$) (Table 2).

Correlates of functional status

In our study, ODI was found to be correlated with VAS pain and the pain, physical mobility, energy, sleep, social isolation, and emotional reaction subgroups of NHP ($p<0.01$, $r=0.67$, 0.54, 0.46, 0.49, 0.41, 0.29, and 0.38, respectively). The analyses of correlation coefficients revealed that the strongest correlation of ODI was with VAS pain ($r=0.67$) (Table 3).

Discussion

Although pregnancy is a part of life for many women, most pregnant women (50%–90%) experience LPP (11). Pregnancy-related LPP has considerable consequences with respect to physical functions. It has a negative impact on HRQoL (4).

This study demonstrates several important observations regarding pregnancy-related LPP. Firstly, we found higher functional disability levels in pregnant women with LPP than the controls. This result correlates with the findings of Olsson et al. (12) who confirmed that pregnant women with LPP had more functional limitations. They evaluated functional status using the Disability Rating Index (DRI).

Secondly, we found poorer HRQoL scores with respect to pain, physical mobility, and energy in pregnant women with LPP than the controls. The sleep, social isolation, and emotional function domains of NHP were not affected. Similarly, Olsson et al. (12) reported deterioration in NHP subscales involving energy, pain, physical functioning, and sleep. They suggested that LPP did not have a negative influence on social and emotional functions. In a study by Coban et al. (13), where HRQoL was assessed using the World Health Organization Quality of Life Questionnaire (WHOQoL-BREF), comparable levels of HRQoL with respect to physical and psychological health, social relations, and environment factors were observed among the groups.

Thirdly, we investigated the relationship between functional disability and HRQoL in pregnant women with LPP. To our knowledge, this is the first study to demonstrate that functional limitation was associated with impaired HRQoL, including pain, physical mobility, energy, sleep, and social and emotional functions. In a study by Coban et al. (13), conducted in 100 pregnant women with LPP, a weak correlation was found to exist between the functional status and physical health and social relationship domains of HRQoL.

Fourthly, we determined a significant relationship between functional limitation and pain severity. This association was previously

Table 1. Clinical and demographical data

Parameters	LPP group (n=83)
Age, mean±SD	28.05±5.42
Gestational week	29.51±8.6
BMI (kg/m^2)	27.57±4.67
VAS pain	4.11±2.06

LPP: Lumbopelvic pain; BMI: Body mass index; VAS: Visual analog scale

Table 2. The comparison of functional status and HRQoL of the groups

	Pregnant group (n=83) mean±standard deviation	Control group (n=44) mean±standard deviation	p value
ODI	35.98±18.24	19.05±14.13	<0.001*
NHP-pain	37.17±26.86	14.11±16.47	<0.001*
NHP-physical mobility	34.93±22.75	18.75±22.63	<0.001*
NHP-energy	34.33±34.64	17.28±28.31	<0.001*
NHP-sleep	18.07±27.52	13.18±23.21	0.32
NHP-social isolation	14.21±25.85	11.36±22.99	0.54
NHP-emotional reactions	27.71±29.22	19.03±25.93	0.101

HRQoL: Health-related quality of life; ODI: Oswestry Disability Index; NHP: Nottingham Health Profile; *: p<0.01 (significant)

Table 3. The relation of functional status with pain and health-related quality of life

		ODI
VAS pain	r	0.67
	p	<0.001*
NHP-pain	r	0.54
	p	<0.001*
NHP-physical mobility	r	0.46
	p	<0.001*
NHP-energy	r	0.49
	p	<0.001*
NHP-sleep	r	0.41
	p	<0.001*
NHP-social isolation	r	0.29
	p	0.009*
NHP-emotional reactions	r	0.38
	p	<0.001*

ODI: Oswestry Disability Index; VAS: Visual analog scale; NHP: Nottingham Health Profile *: p<0.01 (significant)

found in the study by Kristiansson et al. (14). They suggested that pain scores were correlated to self-rated disability. On the contrary, Sihvonen et al. (3) and Coban et al. (13) did not report an association between pain intensity scores and functional status.

The limitation of our study was the relatively small number of subjects.

Conclusion

Functional limitation due to pregnancy-related LPP negatively affects HRQoL with respect to pain, physical mobility, energy, sleep, and social and emotional functioning. The evaluation of LPP should take place in clinical practice.

Ethic Committee Approval: Ethics committee approval was received for this study.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

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