

PREVALENCE OF LOW BACK AND PELVIC PAIN DURING PREGNANCY IN A NORWEGIAN POPULATION

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ABSTRACT

Objective: The purpose of this study was to investigate the cumulative prevalence of low back pain (LBP), pelvic pain (PP), and lumbopelvic pain during pregnancy, including features possibly associated with development of pregnancy-related PP, in an unselected population of women.

Methods: A retrospective cohort study was conducted in which all women giving birth at Stavanger University hospital in a 4-month period were asked to participate and to fill in a questionnaire on demographic features, pain, disability, and Oswestry Disability Index. Inclusion criteria were singleton pregnancy of at least 36 weeks and competence in the Norwegian language.

Results: Nearly 50% of the women experienced moderate and severe PP during pregnancy. Approximately 50% of them had PP syndrome, whereas the other half experienced lumbopelvic pain. Ten percent of the women experienced moderate and severe LBP alone. These pain syndromes increased sick leave and impaired general level of function during pregnancy. Approximately 50% of women with PP had pain in the area of the symphysis. The analysis of risk factors did not present a unidirectional and clear picture.

Conclusions: Pelvic pain in pregnant women is a health care challenge in which moderate and severe pain develops rather early and has important implications for society. The observed associations between possible causative factors and moderate and severe LBP and PP in this study may, together with results from other studies, bring some valuable insights into their multifactorial influences and provide background information for future studies. (*J Manipulative Physiol Ther* 2012;35:272-278)

Key Indexing Terms: *Pelvic Pain; Low Back Pain; Pregnancy; Risk Factors; Retrospective Studies*

Low back pain (LBP) and pelvic pain (PP) are common conditions in many cultures during pregnancy.¹⁻⁸ Two Swedish studies presented a

prevalence of 54% for PP, 17% for LBP, and 29% to 72% for combined symptoms.^{1,2} One Dutch study showed a prevalence of 7% for self-reported PP during pregnancy, whereas an Iranian study revealed that 28% of pregnant women had PP, 13% had LBP, and 8% had combined symptoms.^{3,4} An international study concluded that PP in pregnancy does not vary according to geography or socioeconomy and presented a PP prevalence of 49% in Sweden, 66% in Tanzania, 77% in Finland, and 81% in Zanzibar, with an overall similarity of symptom location and degree of pain.⁵ Furthermore, an Australian retrospective study showed that 35% of women had experienced LBP during pregnancy⁶; in a Danish study, Albert et al⁷ found a 20% cumulative prevalence of isolated PP in pregnancy, and two-thirds of the pregnant women report LBP in a cross-sectional study in the United States by Skaggs et al.⁸ Interestingly, most women report their first episode ever of LBP to occur during pregnancy.^{9,10}

Although these are common complaints in pregnancy, the etiology is still unknown, and the pathophysiology is unclear. In addition, low back and pelvic disorders during

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pregnancy are considered a major public health issue.¹¹ Sick leave for LBP or PP during pregnancy has been shown to occur in 37% to 72%, and the period of sick leave is on average between 12 and 15 weeks.⁹⁻¹¹

The wide range of the reported frequency of these complaints during pregnancy may be caused by methodological differences. Most of the previous studies are based on selected populations of pregnant women, and a clearly defined clinical diagnosis of PP is missing. In lack of a clear definition, a diverse nomenclature for these conditions has been used: pelvic insufficiency, LBP, lumbosacral pain, symphysiolysis, pelvic syndrome, posterior PP, and pregnancy-related PP.^{11,12}

Guidelines for identification and classification of pregnancy-related PP have been established in later years, based on physical examination and history taking.¹³ However, studies of risk factors related to the development of PP during pregnancy have not yet been able to reveal one single dominant causative factor, but several different physical and psychosocial factors have been found to correlate with self-reported pain.^{3,9,13-15} An increased abdominal diameter, higher body mass index (BMI), muscle dysfunction, and fetal weight are clearly associated with LBP and PP during pregnancy.¹⁶⁻¹⁸ A general increase in mobility of joints during pregnancy has also been described,¹⁹ and Sipko et al²⁰ found that the most frequently irritated ligaments during pregnancy are the interspinous, iliolumbar, and sacroiliac.

However, some suggest that pain during pregnancy is not only explained by biomechanical factors alone; psychosocial factors too seem to be important.^{21,22}

The objectives of this study were to investigate the cumulative prevalence of LBP, PP, and combined lumbopelvic pain (LBPP) in an unselected population of women, giving birth during a 4-month period, and to study clinical and demographic features possibly associated with the development of pregnancy-related PP.

METHODS

This study is a retrospective longitudinal cohort study, with data collection over the period of March to June 2009, at the maternity ward of Stavanger University Hospital, Norway. All women giving birth at the hospital during this period were asked to participate and to fill in the questionnaire. Inclusion criteria were a term singleton pregnancy of at least 36 weeks and good competence in the Norwegian language. The hospital has the only birth department in the southern part of the county of Rogaland, with a population of approximately 330 000 inhabitants. The annual number of deliveries at the hospital varies between 4400 and 4800.

Within 24 hours after delivery, the women received both oral and written information from a midwife. Participation

was voluntary, but to obtain inclusion of an unselected sample, all women were encouraged to give their informed consent to participate. The study was carried out in accordance with the Helsinki Declaration II and was approved by the Regional Ethics Committee of Western Norway. All subjects consented to participate in this study.

To assess if the study population was a representative sample of the delivering women, we compared demographic and clinical characteristics of the study population with that of the general delivery database at the hospital.

The women completed a questionnaire on demographic features and pain, disability, and exercising before and during pregnancy. The questionnaire was produced and specially designed by the research group, based on previous studies and the experience of the team.

Information on presence of pain, pain distribution, and level of pain intensity was collected for both previous and present pregnancies. Pain intensity for both LBP and PP was rated retrospectively on a numerical rating scale (NRS) from 0 to 100 for each month of the pregnancy, to collect information on appearance of symptoms and peak intensity pain during pregnancy. There are 2 versions of the NRS: 0 to 10 and 0 to 100, and in this study, the latter one was used to record a detailed pain level.^{23,24}

Reports on pain distribution were obtained by asking for drawings on figures of the lower back and pelvic areas. Studies evaluating pelvic girdle pain occasionally use pain drawings, in spite of clinical experience showing that some women have difficulties in anatomically locating the pain on a drawing.^{2,3,17,25,26} In this study, there were 3 figures: 1 low back and 2 pelvic (front and back), all with explanation of the regions involved. The pain drawings were used to differentiate between low back and PP and to identify location of pain in either area.²⁷

Information on disability was collected through the Oswestry Disability Index (ODI), which is one of the principal condition-specific outcome measures for defining disabling effects from spinal disorders.^{28,29}

The questionnaires also provided information on number of years of education, level of physical work load (a 5-level scale running from "very light" to "very heavy"—a score of 3 or more was used to characterize women with a heavy work load), work satisfaction (a 5-level scale running from "very bad" to "very good"—a score of 3 or less was used to describe women with a low satisfaction at work), sick leave during pregnancy (time periods and percentages), height, and weight before pregnancy and at delivery. Body mass index was calculated and used in the data analyses.

Further variables included were number of previous births, pain in previous pregnancies, pain during the last year before pregnancy, and exercising habits ("Did you exercise regularly, at least 2-3 times per week before pregnancy/during pregnancy?").

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