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A Comprehensive Analysis of Pelvic Girdle Pain and Low Back Pain during Pregnancy

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Abstract

Background: Pelvic girdle pain (PGP) and low back pain (LBP) are common musculoskeletal complaints experienced by pregnant women, affecting their quality of life and functional abilities. This study aimed to provide a comprehensive analysis of PGP and LBP during pregnancy, focusing on prevalence, risk factors, impact on daily activities, treatment strategies, and outcomes.

Methods: A systematic review of the literature was conducted to synthesize existing evidence on PGP and LBP during pregnancy. Studies reporting on the prevalence, risk factors, clinical presentation, diagnostic approaches, treatment modalities, and outcomes of PGP and LBP in pregnant women were included in the analysis.

Results: The findings revealed that PGP and LBP are prevalent conditions during pregnancy, with reported rates varying across studies. Risk factors associated with the development of PGP and LBP included previous history of musculoskeletal pain, increased body mass index, physical inactivity, and hormonal changes. Pregnant women with PGP and LBP often experience limitations in daily activities, such as walking, standing, and sitting, leading to reduced functional capacity.

Various treatment modalities were identified, including physical therapy, exercise programs, manual therapy, and pain management strategies. These interventions aimed to alleviate pain, improve mobility, and enhance overall well-being in pregnant women with PGP and LBP. Additionally, education, ergonomic modifications, and support devices were recommended to optimize management outcomes.

Conclusion: PGP and LBP are significant musculoskeletal issues that can impact pregnant women's quality of life. A multidisciplinary approach incorporating preventive measures, early intervention, and tailored treatment strategies is essential for effectively managing PGP and LBP during pregnancy. Further research is warranted to explore the long-term implications of these conditions and evaluate the effectiveness of interventions in improving maternal health outcomes.

Keywords: Pelvic girdle pain, Low back pain, Pregnancy, Musculoskeletal disorders, Treatment strategies, Functional limitations, Systematic review

Introduction

Pelvic girdle pain (PGP) and low back pain (LBP) are common musculoskeletal conditions that affect a significant number of pregnant women worldwide. These conditions can have a substantial impact on the physical and emotional well-being of expectant mothers, potentially leading to functional limitations, decreased quality of life, and challenges in performing daily activities. Understanding the prevalence, risk factors, clinical manifestations, and management strategies for PGP and LBP during pregnancy is crucial for optimizing maternal health outcomes and enhancing the overall pregnancy experience.

Pregnancy-related PGP and LBP are characterized by discomfort, stiffness, and pain in the pelvic region and lower back, respectively. The physiological changes that occur during pregnancy, including hormonal fluctuations, weight gain, postural alterations, and increased joint laxity, contribute to the development of these musculoskeletal issues. As pregnancy progresses, the growing uterus and shifting center of gravity further strain the pelvic girdle and lumbar spine, exacerbating the symptoms of PGP and LBP.

Despite the prevalence of PGP and LBP during pregnancy, there is a lack of consensus regarding the optimal management strategies for these conditions. While some women may experience mild and self-limiting symptoms, others may require more comprehensive interventions to alleviate pain, improve function, and prevent long-term complications. Therefore, a comprehensive analysis of PGP and LBP during pregnancy is essential to identify effective treatment modalities, address risk factors, and enhance the overall care provided to pregnant women experiencing musculoskeletal discomfort.

This study aims to synthesize existing evidence on PGP and LBP during pregnancy, encompassing a range of factors such as prevalence rates, risk factors, clinical presentation, diagnostic approaches, treatment options, and outcomes. By exploring the multifaceted nature of PGP and LBP in the context of pregnancy, this analysis seeks to inform healthcare providers, researchers,

and policymakers about the complexities of managing musculoskeletal pain in pregnant women and to guide the development of evidence-based interventions for optimizing maternal health and well-being.

Bastiaanssen, J. M., de Bie, R. A., Bastiaenen, C. H., Essed, G. G., & Van den Brandt, P. A. (2005) investigated a historical perspective on PGP and or pregnancy-related LBP. They mentioned that the increasing focus on low back and/or pelvic girdle pain associated with pregnancy has sparked numerous research initiatives. While it may appear to be a contemporary condition, historical records reveal that pregnancy-related pelvic girdle pain (PPGP) has been recognized for centuries. They further mentioned that PPGP is a complex phenomenon where various biological, psychological, and social factors could play an important role. Hence, detailed research should be conducted to get a clearer picture in this regard.

Pierce H. M. (2010) concluded from the study that pregnancy-related low back pain and pelvic girdle pain (PGP) is highly prevalent and expected during pregnancy. Only a small proportion of women receive treatment, despite consequences for some in terms of pain, disability, lifestyle, and psychological health. Dissemination of these findings to maternity caregivers may assist with the recognition of the condition as a potentially significant health issue during pregnancy.

Vermani, E., Mittal, R., & Weeks, A. (2010) conducted a review on pelvic girdle pain and low back pain in pregnancy. They mentioned that Pregnancy-related pelvic girdle pain (PGP) and low back pain (PLBP) are prevalent conditions that can profoundly impact a woman's physical health, psychological well-being, and socioeconomic status. Despite the availability of various management strategies, these options are often underutilized due to healthcare professionals' limited comprehensive knowledge and concerns about potential risks to the fetus. Effective interventions, including patient education, pelvic belts, acupuncture, and specialized postpartum exercises, can offer relief to affected individuals. The study delves into the diagnosis and management of

PGP and PLBP, exploring essential aspects such as terminology, epidemiology, risk factors, pathophysiology, and prognosis.

Pierce H. et. al. (2012) investigated the prevalence and nature of lumbo-pelvic pain (LPP), which is experienced by women in the lumbar and/or sacro-iliac area and/or symphysis pubis during pregnancy. The results of the study showed that there was a high prevalence of self-reported LPP during the pregnancy i.e. around 71%. The study concluded that LPP is a potentially significant health issue during pregnancy.

Objective of the Study

The objective of this study is to conduct a thorough examination and analysis of pelvic girdle pain (PGP) and low back pain (LBP) during pregnancy to address the following key aspects:

1. **Prevalence and Incidence:** Determine the prevalence and incidence rates of pelvic girdle pain and low back pain among pregnant women, considering variations across different trimesters, populations, and risk factors.
2. **Risk Factors and Predictors:** Identify and evaluate the risk factors associated with the development of pelvic girdle pain and low back pain during pregnancy, including maternal age, parity, body mass index, previous musculoskeletal history, hormonal changes, and physical activity levels.
3. **Clinical Presentation and Diagnosis:** Describe the clinical presentation of pelvic girdle pain and low back pain in pregnant women, highlighting the common symptoms, diagnostic challenges, and differential diagnosis considerations to distinguish between PGP, LBP, and other musculoskeletal disorders.
4. **Impact on Functional Abilities:** Assess the impact of pelvic girdle pain and low back pain on pregnant women's daily activities, functional abilities, quality of life, work productivity, social interactions, and mental health outcomes during pregnancy.

5. Treatment Modalities and Interventions: Review the existing evidence on various treatment strategies and interventions for managing pelvic girdle pain and low back pain in pregnant women, including non-pharmacological approaches (e.g., physical therapy, exercise, acupuncture, chiropractic care) and pharmacological options with safety considerations for pregnancy.

6. Outcomes and Complications: Investigate the short-term and long-term outcomes associated with untreated or poorly managed pelvic girdle pain and low back pain during pregnancy, considering the potential implications on maternal health, childbirth outcomes, postpartum recovery, and long-term musculoskeletal health.

7. Comprehensive Analysis and Synthesis: Synthesize the findings from the literature review, observational studies, clinical trials, and qualitative research to provide a comprehensive analysis of pelvic girdle pain and low back pain during pregnancy, integrating data on prevalence, risk factors, clinical presentation, and impact on daily activities, treatment outcomes, and future research directions.

Findings of Study

1. Prevalence and Incidence:

- The study found that pelvic girdle pain and low back pain are prevalent musculoskeletal complaints during pregnancy, affecting a significant proportion of expectant mothers.

- Prevalence rates varied across studies, with a higher incidence of PGP reported in the third trimester and an increased prevalence of LBP in the second trimester.

2. Risk Factors and Predictors:

- Maternal age, parity, previous history of musculoskeletal pain, higher body mass index, and physical inactivity were identified as significant risk factors for the development of PGP and LBP during pregnancy.

- Hormonal changes, increased joint laxity, and postural alterations were also associated with an elevated risk of experiencing pelvic girdle pain and low back pain.

3. Clinical Presentation and Diagnosis:

- Pregnant women with PGP often reported symptoms such as symphyseal pain, sacroiliac joint pain, and radiating leg pain, while those with LBP commonly experienced lumbar discomfort, sciatica, and restricted mobility.

- Differential diagnosis was crucial to distinguishing between PGP, LBP, and other musculoskeletal conditions to guide appropriate management strategies.

4. Impact on Functional Abilities:

- PGP and LBP significantly impacted pregnant women's ability to perform daily activities, leading to functional limitations in walking, standing, sitting, and engaging in routine tasks.

- The study highlighted the negative effects of pain and disability on pregnant women's quality of life, work productivity, and mental well-being.

5. Treatment Modalities and Interventions:

- Non-pharmacological interventions such as physical therapy, exercise programs, manual therapy, and supportive devices were effective in managing PGP and LBP symptoms and improving functional outcomes.

- Multidisciplinary approaches that incorporated education, ergonomic modifications, and pain management strategies were recommended to optimize treatment outcomes.

6. Outcomes and Complications:

- Early intervention and comprehensive management of PGP and LBP during pregnancy were associated with improved pain relief, enhanced mobility, and better maternal health outcomes.

- Untreated or poorly managed pelvic girdle pain and low back pain were linked to prolonged disability, increased risk of chronic pain postpartum, and potential complications during childbirth.

7. Future Research Directions:

- The study highlighted the need for further research to explore the long-term implications of PGP and LBP during pregnancy, evaluate the effectiveness of interventions in improving maternal health outcomes, and develop evidence-based guidelines for the management of musculoskeletal pain in pregnant women.

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