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Pelvic Girdle Pain During First Pregnancy in India: Prevalence and Diagnostic Insights

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ABSTRACT

This research intends to determine the occurrence of pregnancy-related pelvic girdle pain (PPGP) among Indian primigravida. The study was a cross sectional study conducted among 200 pregnant women, aged between 20-35 years and 12-36 weeks of gestation who were approached in Obstetrics outpatient department of a tertiary care hospital in New Delhi, India. Data on the demographic characteristics (age, height, pre-pregnancy weight, current weight and gestational age) were obtained through interviews. The severity of the pain was assessed using a visual analog scale (VAS), the place of the pain was assessed using a pain drawing. Besides, the provocation of posterior pelvic pain (P4) test was performed to facilitate the distinction between pelvic girdle pain and low back pain. PPGP was diagnosed with five diagnostic criteria. The study noted that the prevalence rate of lumbopelvic pain in pregnancy was 60.3 percent that compares to studies done in United States and Sweden. The combined pain and no pain group showed a big difference in the height and pre-pregnancy weight. The paper has also indicated that without proper management, PPGP may develop into a chronic condition that may respond to the daily lives of individuals, their family members, and society. These findings highlight the necessity of focusing more on PPGP in India and conducting research in the country on the condition, its prevalence, risk factors, and management.

Keywords: Pregnancy-related pelvic girdle pain, Lumbopelvic pain, Primigravida, Prevalence, Visual analog scale (VAS)

INTRODUCTION

There are high levels of physiological and biomechanical changes that happen as a result of pregnancy; consequently, they cause several musculoskeletal problems. Pregnancy-related pelvic girdle pain (PPGP) has been the most studied of them. PPGP and low back pain are highly common and highly influence the daily life activities of approximately one-third of pregnant women. Pregnancy-related back pain consists of low back pain (PLBP) and pelvic girdle pain (PPGP) or a combination of either of them. The etiology of PLBP is in the lumbar spine and that of pelvic pain is in the pelvis itself, largely in the sacroiliac joints. In case the clear differentiation of the PLBP and PPGP cannot be determined, then the condition would be diagnosed as lumbopelvic pain. Presently no common nomenclature of PLBP and PPGP exists and different terms has been used to explain the pelvic girdle pain in pregnant women. It is also referred to as pelvic pain, pelvic girdle relaxation, pregnancy-related pelvic girdle pain and posterior pelvic pain during pregnancy. The term pregnancy-related pelvic girdle pain (PPGP) was proposed in 2005, however, and this term has proved to be the most specific compared to the earlier descriptions [1-7]. The European Best Practice Guidelines on diagnosis and treatment of the pelvic girdle pain stated that the PPGP is the pain that is mostly experienced between the posterior iliac crest and gluteal fold, mainly around the sacroiliac joints. The pain can spread into the posterior thigh and can also be experienced in symphysis either at the same time or during different times. It has also been demonstrated that PPGP is a common distress among pregnant women within the European populations and the mean prevalence rate of low back pain and pelvic girdle pain in pregnancy is 45.3 percent (a range of 3.9 percent to 89.9 percent) in 28 studies. Nonetheless, the difference in the prevalence rates of the studies can be explained by the fact that there is no agreement, as far as the classification of the low back pain and pelvic girdle pain are concerned. Asian nations have been little studied, concerning the PPGP prevalence, possibly due to the fact that the pregnancy-dependent pelvic girdle pain is not considered as a syndrome, but as a normal pregnancy-related phenomenon. India has very less information about the prevalence, incidence, causes and prognosis of PPGP [8-18]. The proposed studies will allow establishing the level of PPGP prevalence among primigravid women in India and will allow the women, who may have gained wrong attitudes towards the condition, to learn about it and address a specialist in the event of their appearing or not disappearing symptoms.

MATERIALS AND METHODS

The type of design used in the study was cross-sectional design which is non-experimental observational study. The study sample size was defined as primigravid women, aged 20-35 years with gestation age 12 to 36 weeks who visited Obstetrics outpatient department of a tertiary care hospital in two months. This research began with the informed consent; afterward, the participants were interviewed in a questionnaire to complete their demographic information, such as age, height, pre-pregnancy weight, current weight, and the week of the pregnancy incidence in which the test was being carried out [1-10]. Those women who answered in the affirmative to the question, Do you have lumbopelvic pain now? were asked additional questions about the history of their lumbopelvic pain as well as its present condition, the quality, the intensity and the location. The patients having history of spinal fractures or spine surgery, abdominal surgery or pelvic surgery or having low back pain at least three months prior to pregnancy were excluded [1-9]. A visual analog scale (VAS) was used in gauging the severity of the pain. The VAS consists of the line 10 cm in length, which is horizontal; and the two descriptors, viz., no pain and pain as bad as it could be are pasted at the respective ends of the line. The patient identifies a position along the line most representative of the pain intensity they are experiencing. Pain drawing was also incorporated to help localize the pain and the patient was requested to circle or point at the painful regions on a drawing of a human body outline. It was examination of lumbar spine and hip joint. All the women presenting with lumbopelvic pain were subjected to the application of the posterior pelvic pain provocation (P4) test [10-21]. P4 test possesses certain capacity in differentiating the pelvic girdle pain and the low back pain in pregnant women and was reported to possess high level of sensitivity, specificity and reliability. During test, the patient lies in the supine position and the hip is flexion of 90 and knee is bent. The examiner sacrifices a posterior shearing force on the sacroiliac joint via the femur. The positive test will involve the case when the patient reports that he/she feels pain in the buttocks, distal and lateral to L5-S1 region, and in the area of sacroiliac joints. PPGP is diagnosed by the five criteria contained in a study by Ostgaard et al., who established the fact that the “posterior pelvic pain” syndrome exists and applied the five criteria to determine the presence of the condition in women with lumbopelvic pain. The presence of PPGP was verified in the situations when all the following criteria were matched [21-25].

RESULTS

Table 1: Demographic Characteristics of Subjects

Variables	Minimum	Maximum	Mean ± SD
Age (years)	19	35	24.56 ± 3.43
Height (m)	1.20	1.75	1.5524 ± 0.095
Pre-pregnancy Weight (kg)	30	80	51.32 ± 8.15
Current Weight (kg)	36	85	56.42 ± 8.02
Period of Gestation (Week)	12	40	25.43 ± 7.25

Table 2: Demographic Characteristics of Subjects in Three Sub-Groups

Variables	PPGP (Mean ± SD) (n = 68)	Combined Pain (Mean ± SD) (n = 69)	No Pain (Mean ± SD) (n = 90)	P-Value*
Age (years)	24.03 ± 2.82	23.78 ± 3.15	24.10 ± 3.42	0.398
Height (m)	1.52 ± 0.09	1.51 ± 0.08	1.55 ± 0.10	0.021
Weight (kg)				
Pre-pregnancy	49.91 ± 8.32	48.72 ± 7.89	51.27 ± 8.14	0.018
Current	54.21 ± 8.50	53.93 ± 7.97	56.73 ± 8.23	0.059
Body Mass Index (BMI)				
Pre-pregnancy	20.95 ± 3.12	21.10 ± 3.08	21.42 ± 3.47	0.689
Current	23.10 ± 3.31	23.27 ± 3.34	23.58 ± 3.76	0.948
Pregnancy Week	25.63 ± 7.75	24.58 ± 8.12	23.40 ± 8.10	0.177

The paper has presented a descriptive characteristic of the demographic variables of the pregnant women which were included in three sub-groups, i.e., those with the pregnancy-related pelvic girdle pain (PPGP), those with the combined pain (pelvis and back pain) and those with no pain. Table 1 illustrates the depiction of overall features of entire study sample (n = 200). The age of the participants was 19-35 years with mean of 24.56 3.43 years. The height of the subjects ranged between 1.20 to 1.75 meters with the mean +/- standard deviation of 1.5524 +/- 0.095 meters. Their pre-pregnancy weights were discovered to be 30 to 80 kg with an average of 51.32 + 8.15 kg and their current weights were discovered to be 36 to 85 kg with an average of 56.42 + 8.02 kg. The gestation period went around 12-40 weeks and the

average gestation was 25.43 7.25 weeks. The demographic characteristics break down in the three sub-groups is given in Table 2. The mean age of PPGP group (n = 68) was 24.03 + / 2.82 years, combined pain group (n = 69) was 23.78 + / 3.15 years and no-pain group (n = 90) was 24.10 + / 3.42 years. The age of the groups did not differ significantly (p = 0.398). With regard to height the mean height of the PPGP group was 1.52 +/- 0.09 m, the combined pain group was 1.51 +/- 0.08 m and the no-pain group was 1.55 +/- 0.10 m and the difference in height among the groups was found to be significantly different (p = 0.021). As far as the weight is concerned, the combined pain group had the lowest pre-pregnancy weight (48.72 +/- 7.89 kg) compared with the PPGP (49.91 +/- 8.32 kg) and no-pain (51.27 +/- 8.14 kg) groups and the difference between them was significant (p = 0.018). There was no significant difference in the current weight between the groups (p = 0.059). The findings of the Pre-pregnancy and during pregnancy Body Mass Index (BMI) have revealed that the difference between the groups is not significant. The mean difference in the pregnancy week (12-40 weeks) between the sub-groups was not significant (p = 0.177). On the whole, the demographic gap gives us the clue about the profuseness of the factors that can lead to pregnancy-related musculoskeletal pain.

Figure1: Demographic Characteristics of Subjects

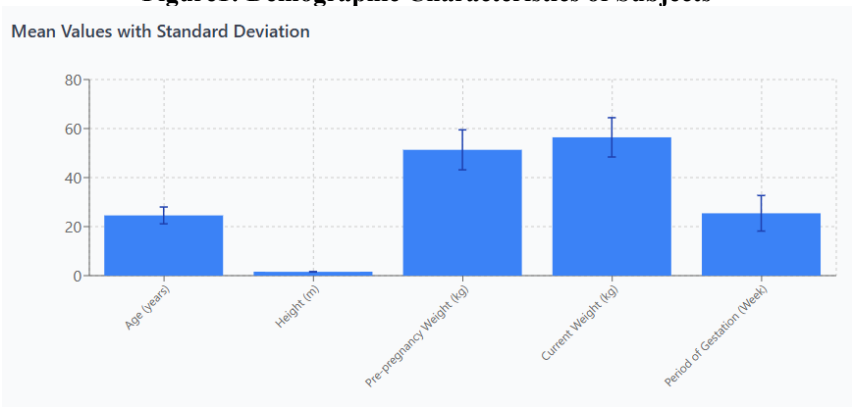
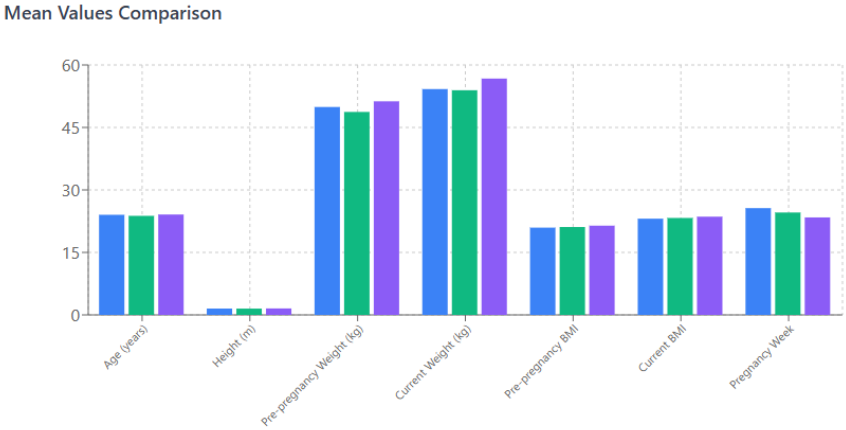


Figure 2: Demographic Characteristics by Sub-Groups



DISCUSSION

The study is the first major research venture, aimed at estimating the Indian primigravida pregnancy-related pelvic girdle pain (PPGP) prevalence. The point prevalence of lumbopelvic pain in pregnancy was found to be very high in the Indian primigravida as 60.3 percent of the women in the study reported that they were experiencing lumbopelvic pain at the time of examination. Compared with other nations, point prevalence of lumbopelvic pain in pregnancy in United States and Sweden has been reported as 58.5 and 51 percent, respectively [1-9]. The western research has reported the period prevalence of the lumbopelvic pain between 28.9 percent and 72 percent in prospective studies and between 24 percent and 58 percent in retrospective studies. The prevalence of these studies is widely varied but approximately around fifty percent of the women who experienced some level of lumbopelvic pain during some time during pregnancy which is rather comparable to the present study. PPGP diagnosis in women presented with lumbopelvic pain in this study utilized five criteria. These were quite crucial criteria used in diagnosis of the condition since there is no single gold standard used in diagnosis of PPGP [1-8]. Use of P4 test alone in Prospective studies reporting PPGP prevalence

has given a prevalence rate of 22.6-36.2%. As it is stated by Bjorklund and Bergstrom, concerning the geographical distribution, it appears that the prevalence of lumbopelvic pain in pregnant women is similar throughout the globe. Lack of clear definitions, different study designs, terminologies and difference in classification and diagnostic procedure however explain the vast difference in prevalence of PPGP and /or pregnancy-related low back pain (PLBP) between various studies. The Asian nations have scanty information on PPGP during pregnancy. The author is only aware of six studies relating to the lumbopelvic pain prevalence in Africa and Asia with a prevalence rate of between 38percent and 89.9percent. These studies are difficult to compare with the one of the present study because of difference in the study design and also terminologies. A prospective study carried out by Albert et al. indicated that one month after delivery, 62.5 percent of women with pelvic pain were relieved and eight point six percent of women still experienced pelvic girdle pain two years after delivery [9-16]. In a prospective study Larsen et al. determined the incidence of pelvic girdle pain 2, 6 and 12 months after pregnancy to be 5 percent, 4 percent and 2 percent, respectively. Such results are indicators toward the realization that PPGP may develop into chronic pain, which negatively affects daily life unless managed early. The consequences of lumbopelvic pain during and after pregnancy may be catastrophic to the life of a person, her family, and the society as a whole due to the loss in the ability to conduct everyday task, earn income, and quality of life measured in health terms. It has also been advised that PPGP and PLBP in the case of expectant mothers should be opened and managed differently as wrong treatment may aggravate the condition. To date three randomized controlled trials have specifically dealt with PPGP during and after pregnancy but more research needs to be done, so as to establish a system of classification of treatments of PPGP during and after pregnancy. The women included in this study were merely primigravida since the antecedent studies indicated that the history of PPGP and/or PLBP, or lumbopelvic pain during the year preceding the pregnancy is a strong risk factor of developing PPGP or PLBP in the future pregnancies [17-22]. This could have been the reason why more women (90) in the current study had reported no pain because there was no history of pain amongst the respondents. When pain and no pain were merged, the difference in height and pre-pregnancy weight was considerably large between the two groups. But because the degree of activity was not taken into account in the study, as well as anthropometric analysis, then it is possible that the larger pre-pregnancy weight in the no-pain group could have a larger muscle mass as a reason. It requires further studies regarding the consequence of weight gain. As the intensity of the pain in the PPGP and combined pain group was compared the analysis of variance was significant that indicates the mean difference of VAS score was significantly different. This pain was observed to be more in PPGP group represented by higher VAS score. The women who have combined pain (PPGP + PLBP) are the ones with a higher disability than those that have either one in other investigations. The high-level pain frequency in PPGP group in the given research may be clarified by the mixed group that contained women with PPGP and PLBP. In our study such a distinction was not made and the percentage of women having only PLBP in the combined group may be high hence contributing to the lower mean pain intensity in the combined group [23-25]. The prevalence rate of lumbopelvic pain and PPGP in the study is high indicating that the two conditions are some of the major health problems among the Indian primigravida. It cites the necessity of a deeper concern on the part of the health professionals and researchers. In further determination of the prevalence, incidence, prognosis and the risk factors of PPGP bigger sample based studies, studies examining the use of several clinical tests, as well as, self-reported measures of functional status are required.

CONCLUSION

It is beneficial to such a study to understand that the maximum prevalence of pregnancy-related pelvic girdle pain (PPGS) was 60.3 percent in Indian primigravida. This number can be discussed as similar to those, which occur in the Western population and this indicates the fact that PPGP is a serious health problem in pregnancy in other cultural environments. The second issue outlined in the research is that the conditions which are indicated by the failure to distinguish between lumbopelvic pain and PPGP cannot be diagnosed because there is no set of universally accepted classification rules. The study achieved this by using a combination of the diagnostic criteria which included the posterior pelvic pain provocation (P4) test and the visual analog scale (VAS) which aided in a more indeep thorough analysis of the condition therefore providing a clearer picture of the prevalence and the effect of the condition. It is also in the study findings that PPGP when not treated early might develop into chronic pain that has very negative overtones on the capability of a woman to go on with her daily chores and even serve as a negative indicator of the quality of life that the concerned woman lives. Also, it outlines the necessity of the specific treatment of PPGP, as its incorrect treatment can lead to the further deterioration of the disease. The evidences presented by the current research article facilitate the further training of the medical fraternity in India about PPGP, its identification, and the possible implications of the condition in the long-run. Given the fact that the study of PPGP in Asian countries and especially in India is highly limited, needless to say the topicality of further research on the investigation of prevalence, risk factor and treatment strategy of PPGP should be the subject of more thorough researches with improved methodology involving the longitudinal data and functional status of the clients. The presented study is a precursor to the

familiarization with this prevalent and poorly documented condition in Indian pregnant women and suggests future studies to inform on the relevant prevention and control strategies.

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