

Full Length Research Paper

Prevalence of low back pain among pregnant women in Ilorin, Nigeria

A. A. G. Jimoh¹, L. O. Omokanye^{1*}, A. G. Salaudeen², R. Saidu¹, M. J. Saka², A. Akinwale³, O. R. Balogun¹ and Z. A. Sulaiman⁴

¹Department of Obstetrics and Gynaecology University of Ilorin, Ilorin, Kwara State, Nigeria.

²Department of Epidemiology and Community Health, University of Ilorin, Ilorin, Kwara State, Nigeria.

³Department of Physiotherapy, University of Ilorin Teaching Hospital, Ilorin, Kwara State, Nigeria.

⁴Department of Anaesthesia, University of Ilorin Teaching Hospital, Ilorin, Kwara State, Nigeria.

Accepted 12 March, 2013

This study aimed at determining the prevalence of low back pain (LBP) and to ascertain its impact on physical dysfunction and work performance among pregnant women. A total of 200 pregnant women attending antenatal care clinics at three health facilities in Ilorin had a 29-item semi-structured questionnaire administered on them. Variables relating to the LBP obtained included frequency, duration and severity of the pain, effect of posture on pain, physical dysfunction experienced during the painful episode, effect on work performance as well as the treatment options sought for the relief of the LBP. There are slightly more (55.4%) pregnant women who experience LBP than those who did not. LBP is most common at both extremes of reproductive age group ($p < 0.005$) and associated with absenteeism ($p < 0.005$) and tended to be posture related and affected work schedules ($p < 0.005$). More pregnant women who suffered LBP sought treatment with the gynaecologists than the physiotherapists. LBP is most common in pregnancy than outside pregnancy. LBP often causes considerable physical dysfunction, poor work performance and absenteeism. Collaboration between obstetricians and physiotherapists need to be further improved upon.

Key words: Low back pain (LBP), pregnant women, questionnaire.

INTRODUCTION

Changes to the musculoskeletal system which occur during pregnancy include changes in posture, spinal or pelvic pain as well as lengthening of the abdominal and pelvic floor muscles (Mac Evilly and Buggy, 1996). The incidence of some degree of back pain during pregnancy is relatively high. Researchers worldwide have suggested it may be between 30 and 70% (Kristiansson et al., 1996; Ayanniyi et al., 2006; Endresen, 1995; Ostgaard, 1996). The cause of back pain during pregnancy remains debatable and often there are several factors involved (Darry et al., 2007).

Changes in the female's postural alignment are natural occurrences as pregnancy develops. The ideal posture ensures the most efficient use of our back muscles so that the least energy is required of these postural muscles (Mac Evilly and Buggy, 1996). Pregnancy results in an increase in overall body mass and a change in the centre of gravity. As the pregnancy progresses, the posture adapts to the changing weight and subsequent forces imposed on the body (Mac Evilly and Buggy, 1990; Darry et al., 2007). The exact postural changes that occur in response to this remain debatable; however, the general

consensus is that there is an exaggeration of the curve in the lumbar spine (Mac Evilly and Buggy, 1996). It was thought that following the birth, a woman's posture returns to the way that it was in pre-pregnancy. However, some studies have shown that the posture after pregnancy is not significantly different to the posture developed during the later stage of pregnancy (Mac Evilly and Buggy, 1996; Kristiansson et al., 1996; Ayanniyi et al., 2006; Endresen, 1995; Darry et al., 2007).

Hormonal changes that occur during pregnancy cause softening of ligaments and the joints, particularly of the pelvis, to enable the foetus to pass through the birth canal more easily (Calguneri et al., 1982; Szlachter et al., 1982; Brynhildsen et al., 1998). This results in increased joint looseness and decreased stability. This, in conjunction with lengthening of the abdominal muscles, compromises the stability of the spine and results in excess mobility of the joints (Calguneri et al., 1982; Szlachter et al., 1982). This may be the cause of pain in the lower back and posterior pelvis (Calguneri et al., 1982; Szlachter et al., 1982; Brynhildsen et al., 1998). Various forms of corsets and supportive braces are available which may provide an increase in joint stability and alleviate low back and posterior pelvic pain.

It is thought that females who have experienced back pain in the past are more likely to report back pain during pregnancy, and females who have experienced pregnancy related back pain are more likely to experience back pain in subsequent pregnancies (Ostgaard and Andersson, 1991; Brynhildsen et al., 1998). Despite these natural occurring changes, undertaking physical activity and maintaining a good level of physical fitness is likely to reduce the risk of developing back pain during pregnancy (Ostgaard et al., 1993). Health care providers can help you identify and manage any back or pelvic pain during the pregnancy. This may include antenatal classes, yoga or consultation with a physiotherapist or other health care professional.

There has not been any effort previously in this centre in looking at the problems of low back pain (LBP) in pregnancy. Ours is the first attempt at looking at this problem from the pregnant women's perspective.

MATERIALS AND METHODS

A total of 200 pregnant women attending antenatal care clinics at the Maternity Wing of the University of Ilorin Teaching Hospital (UIH), Comprehensive Health Centre, Okelele, Ilorin and the Maternal and Child Health Centre, Centre-Igboro, Ilorin had a 29-item semi-structured questionnaire administered on them. Biosocial data obtained included maternal age, gestational age, parity and occupation/profession. Variables relating to the LBP obtained included frequency, duration and severity of the pain, effect of posture on pain, physical dysfunction experienced during the painful episode, effect on work performance as well as the treatment options sought for the relief of the LBP. Thirty-two (32) cases were excluded for incomplete data and the remaining 168 cases were statistically analysed using the Epiinfo 6.02 statistical software tool.

RESULTS

Ninety-three women (55.4%) had experienced LBP in the index pregnancy. The mean age and parity for all the patients, those with LBP and those without LBP are 29.93 ± 4.80 , 28.98 ± 4.67 , 31.16 ± 4.80 and 2.91 ± 1.61 , 2.91 ± 1.03 , 2.89 ± 1.82 ($p=0.075$ and 0.143), respectively. There had been a mean average of 2.99 ± 1.40 episodes of LBP in the index pregnancy when compared with a mean average of 1.82 ± 2.52 within the last one year outside pregnancy ($p < 0.001$).

Average duration of pain was 1.57 ± 0.94 (range 1 to 14 weeks), posture-related in 68 (73.2%) cases and increased with activities in 78 (83.87%) of women. Consultation for treatment to a specialist obstetrician was reported in 55.53% of the affected women with a mean of 2.71 ± 2.31 (range 1 to 12) visits per woman. Visits to a physiotherapist were reported in 48.39% with a mean of 1.96 ± 0.30 (range 1 to 3) visits per woman.

Maternal age correlates well with prevalence of LBP. Extremes of maternal age show more patients with LBP ($p=0.019$, $\chi^2=11.73$). Duration of pain is directly proportionate to the duration of absenteeism ($p=0.02$, $\chi^2=5.75$). Average duration of pain also directly affects the physical function of the individual ($p < 0.0001$) while the duration of absenteeism is directly proportionate to the physical dysfunction ($p < 0.0001$) (Table 1).

DISCUSSION

LBP in pregnancy is a common disorder, commoner than outside pregnancy (Mac Evilly and Buggy, 1996). LBP in pregnancy is exacerbated by the softening of the ligaments and joints of the lumbosacrum occasioned by the elevated progesterone and relaxin amongst others in pregnancy (Mac Evilly and Buggy, 1996; Kristiansson et al., 1996; Ayanniyi et al., 2006; Endresen, 1995; Ostgaard, 1996; Darry et al., 2007). Movements across these joints can become very painful particularly in pregnancy; this is worsened by the exaggerated lordosis of pregnancy, increased load on the lower spine and the upper femoral heads (Joanne et al., 1987). The effect of these anatomical changes and the resultant LBP can lead to considerable physical dysfunction and poor work performance as well as absenteeism (Darry et al., 2007).

More than half of the patients in this study had experienced LBP in the index pregnancy. An average pregnant woman with LBP in this study had up to 3 episodes when compared with about 2 episodes within the last one year outside pregnancy. This compares favorably with the experience of Endresen (1995) and Ostgaard et al. (1994). It is posture related in 73% of cases and worsened with activities in more than 80% of cases.

With the onset of the LBP, all the affected patients had experienced some physical dysfunction albeit to varying

Table 1. Relationship between duration of pain, absenteeism and physical dysfunction among pregnant women.

Duration of pain (weeks)	Duration of absenteeism (weeks)		Total (%)	χ^2 , p-value
	1-4	>4		
1-7	74 (67.3)	36 (23.7)	110 (100)	$\chi^2=5.75$, p=0.02
>7	28 (48.3)	30 (51.7)	58 (100)	
Total	102(60.7)	66 (39.3)	168 (100)	

Duration of pain (weeks)	Physical function		Total (%)	χ^2 , p=0.00
	Affected	Not affected		
1-7	78 (70.9)	32 (29.1)	110 (100)	$\chi^2=13.88$, p=0.00
>7	24 (41.4)	34 (58.6)	58 (100)	
Total	102 (60.7)	66 (39.3)	168 (100)	

Duration of absenteeism (weeks)	Physical function		Total (%)	$\chi^2=13.58$, p=0.00
	Affected	Not affected		
1-4	71 (72.4)	27 (27.6)	98 (100)	$\chi^2=13.58$, p=0.00
>4	31 (44.3)	39 (55.7)	70 (100)	
Total	102 (60.7)	66 (39.3)	168 (100)	

levels. For example, patients have experienced more dysfunction in activities requiring more flexion at the lumbosacral and hip joints (such as moving in and out of bed, climbing or descending stairs, bending) than those that do not (like walking, standing, etc) (Darry et al., 2007). Also, a considerable percentage (71%) of patients with LBP also experienced some form of insomnia. This agrees with 67% obtained by Fast et al. (1989) in a similar study. In a situation where more than 80% of patients who had experienced LBP were absent from work by up to 1 week irrespective of the type of physical dysfunction, the productive efficiency of these women were significantly reduced.

Occupation type which entails prolonged standing or sitting such as teaching, trading, typist, office clerks, laboratory technicians and market women featured more in those with LBP than professions such as medicine, quantity surveying and accountancy. The explanation could be partly because the latter are of executive cadre doing less physically strenuous jobs than the former (Paul et al., 1994). This information is pertinent in identifying those who are at risk of developing LBP in pregnancy.

Conclusion

LBP in pregnancy is a common disorder, affecting slightly more than half of pregnant women. It is commoner in pregnancy than outside pregnancy. LBP often causes considerable physical dysfunction, poor work performance and absenteeism. It is advocated that obstetricians and physiotherapists caring for such pregnant women need to collaborate further in order to enhance pain relief in these women. It is also suggested that a

physiotherapy unit be established at the Obstetrics and Gynaecology Department of the UITH specifically designed to treat pregnant women among other functions.

REFERENCES

- Ayanniyi O, Sanya AO, Ogunlade SO, Oni-orisan MO (2006). Prevalence and Pattern of Back Pain among Pregnant Women Attending Ante-Natal Clinics in Selected Health Care Facilities. *Afr. J. Biomed. Res.* 9:149-156.
- Brynhildsen J, Hansson A, Persson A, Hammar M (1989). Follow-up of patients with low back pain during pregnancy. *Obstet. Gynecol.* 91(2):182-186.
- Calguneri M, Bird HA, Wright V (1982). Changes in joint laxity occurring during pregnancy. *Ann. Rheum. Dis.* 41:126-128.
- Darry B, Snea AB, John A, Bendo MD (2007). Pregnancy: Related low back pain. *Orthopaedics* 30:839.
- Endresen EH (1995). Pelvic pain and low back pain in pregnant women: An epidemiological study. *Scand. J. Rheumatol.* 24:135-141.
- Fast A, Weiss L, Parikh S, Hertz G (1989). Night backache in pregnancy. Hypothetical pathophysiological mechanisms. *Am. J. Phys. Med. Rehab.* 68:227-229.
- Joanne EB, Gwendolen AJ, Margaret IB (1987). The relationship of low back pain to postural changes during pregnancy. *Aust. J. Physiother.* 1:10-17.
- Kristiansson P, Svardsudd K, von Schoultz B (1996). Back pain during pregnancy: A prospective study. *Spine* 21:702-709.
- Mac Evilly M, Buggy D (1996). Back pain and pregnancy: A review. *Pain* 64:405-414.
- Ostgaard HC (1996). Assessment and treatment of low back pain in working pregnant women. *Semin. Perinatol.* 20:61-69.
- Ostgaard HC, Zetherstrom G, Roos-Hansson E, Svanberg B (1994). Reduction of back and posterior pelvic pain in pregnancy. *Spine* 19:894-900.
- Ostgaard HC, Andersson GB, Schultz AB, Miller JA (1993). Influence of some biomechanical factors on low-back pain in pregnancy. *Spine* 18:61-65.
- Ostgaard HC, Andersson GB (1991). Previous back pain and risk of developing back pain in a future pregnancy. *Spine* 16:432-436.
- Paul JA, van Dijk FJ, Frings-Dresen MH (1994). Work load and

musculoskeletal complaints during pregnancy. *Scand. J. Work Environ. Health* 20:153-159.

Szlachter BN, Quagliarello J, Jewelewicz R, Osathanondh R, Spellacy WN, Weiss G (1982). Relaxin in normal and pathogenic pregnancies. *Obstet. Gynecol.* 59:167-170.