

A Brief Research Report To Investigate the Changes in Spinal Curves Which Result During Pregnancy.

R AHMED M L CHAUDHRY

Department of Physiotherapy, Mayo Hospital, Lahore

Correspondence to: Miss Rabia Ahmed,

It is supposed that backache and pelvic pains during pregnancy are related to altered position of center of gravity. This displaces from 2nd Sacral vertebra to upwards and forwards.⁽¹⁾ This change is compensated by alternation in body alignment of spinal curves⁽¹⁾ This results in imbalance between the action of different body muscles.⁽²⁾ Which create extra pressure and strain on them and results in various pains and aches. A total number of 100 healthy women from 12th week to 30th week of gestation have participated in the test. Their spinal curves were measured with the help of spondylometer and graphs were developed accordingly. At the end of the study it was observed that low Back Pain (LBP) results due to adaptation of poor posture during pregnancy. Such women are usually kyphotic and 54% of cases complained of LBP. Lumbar lordosis appears due to tilting of pelvis anteriorly results in Sacroiliac Pain (SIP) and 26% of pregnant women examined complained of SIP. 13% women complained of LBP as well as of SIP and 7% cases experienced "No" pains throughout their pregnancy. It was concluded that LBP and SIP are either due to adaptation of poor posture during pregnancy or if may be due to ant. Tilting of pelvis as a result of weak abdominal.

Key words:- Sacroiliac Pain SIP, Low Back Pain LBP, Spondylometer.

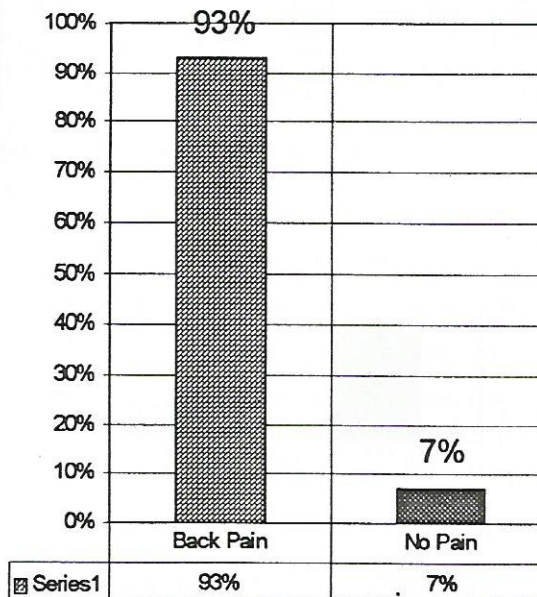
Pain in back is common during pregnancy^(1,3) and high incidence have been described in several studies.^(4,5,6) The onset and aggravation of which are thought to be associated with their activity or work postures.⁽³⁾ The reason for this may be the increase in intra-abdominal pressure. This affects all weight bearing joints. Moreover, it also affects the spinal curvature. Back Pains are usually related to these changes. To investigate these spinal changes during different trimesters and their affects on pain, a research work is planned. For this purpose spondylometer is used and graphs are developed according to the readings obtained from the apparatus. The spinal graphs of different women in different gestation periods show many changes among them. Height, weight and No of gravida also affect the spinal pains and curvature. Conclusion is based on data obtained from histories and examination of about 100 pregnant women.

Results

Out of 100 normal pregnant women, 93 suffered from back pain and only 7% were free from it (Graph I). So according to the results, low back pain is one of the most common problems faced by pregnant women during this period and this may persist after delivery. This is an extremely pathetic condition as they cannot take painkillers to relieve pain and it becomes difficult for them to manage their routine activities.

1. The results show that 54% of pregnant women suffer from LBP, which is against the earlier studies carried out in other countries, we found totally different ratios, as the incidence of LBP is higher than SIP⁹

2. Sacroiliac Pain is the second common problem faced by 26% of the cases.
3. 13% cases are seen suffering from both LBP and SIP.
4. Only 7% women are free from back pain throughout their pregnancy. (Graph II & Table 1)

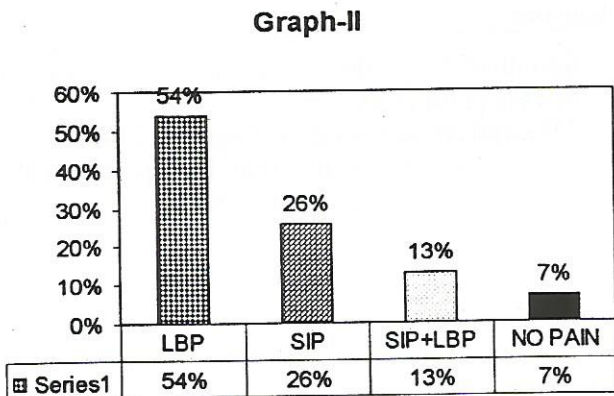
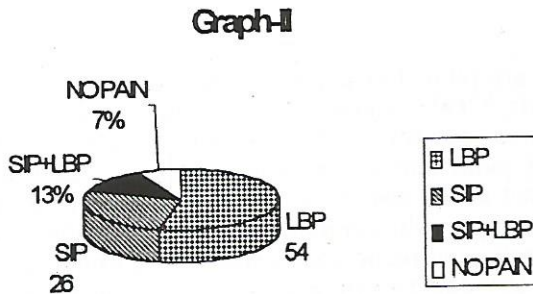


Graph 1. Percentage of cases, normal and with back pain.

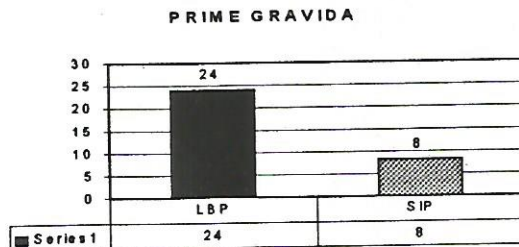
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Table 1. Showing comparison ratio of cases experiencing LBP, SIP, SIP+LBP and none in different number of gravida.

| No. of Gravida | Total | SIP | LBP | SIP&LBP | None |
|-------------------------|-------|-----|-----|---------|------|
| Prime Gravida | 43 | 8 | 24 | 6 | 5 |
| 2 nd Gravida | 28 | 7 | 17 | 3 | 1 |
| 3 rd Gravida | 13 | 3 | 7 | 3 | 0 |
| Multiple Gravida | 16 | 8 | 6 | 1 | 1 |



Graph II showing percentage and comparison ratio of cases experiencing LBP, SIP, both and none.



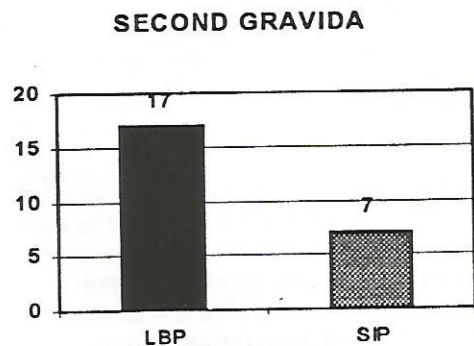
Graph 3.1. Comparison ratio of LBP and SIP in prime gravida

The other interesting results observed during research work are that repeated & frequent pregnancies cause more SIP than LBP (Table 1).

i).LBP is the chief complaint in prime gravida and out of 43 pregnant women, 24 complained of LBP and 8

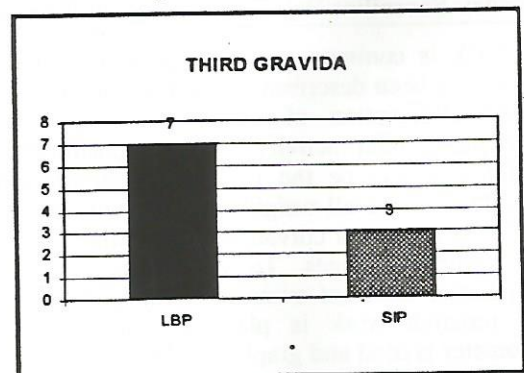
suffered from SIP. (Graph 3.1)

In second gravida out of 27 cases, 17 complained of LBP and 7 complained of SIP. (Graph 3.2)

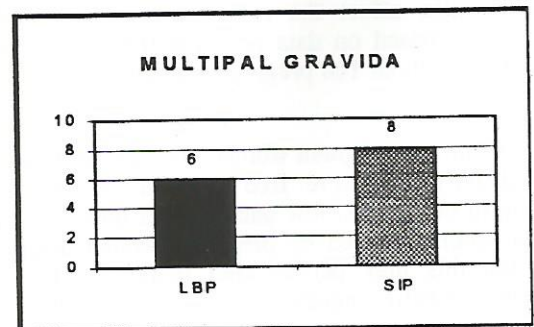


Graph 3.2. Comparison ratio of cases experiencing LBP and SIP in second Gravida

In third gravida, out of 13 pregnant women, 7 complained of LBP and 3 complained of SIP. (Graph 3.3)



Graph 3.3. Comparison ratio of cases experiencing LBP and third Gravida



Graph 3.4. Comparison ratio of cases experiencing LBP and SIP in multiple Gravida

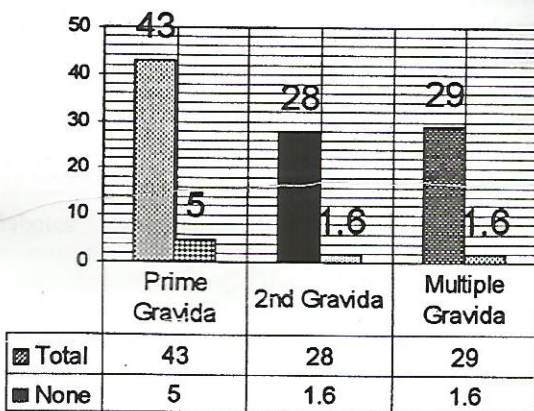
iv) The ratio between LBP and SIP gradually changes with increased number of gravida and in multiple gravida, the ratio between LBP and SIP reverses. Out of 16 women, 8 complained of SIP and 6 complained of LBP. (Graph 3.4)

According to results number of women with no pains are more in prime gravida but this number gradually reduces with increasing no of gravida.

1. This ratio is 11.63% in Prime gravida.
2. In second gravida it is 3.57%
3. In multiple gravida it is 3.45%.

The results show that number of women who experience no pain decreases with the increase in number of gravida. (Graph 4, Table 1)

Graph 4
Women experiencing no pain throughout their pregnancy



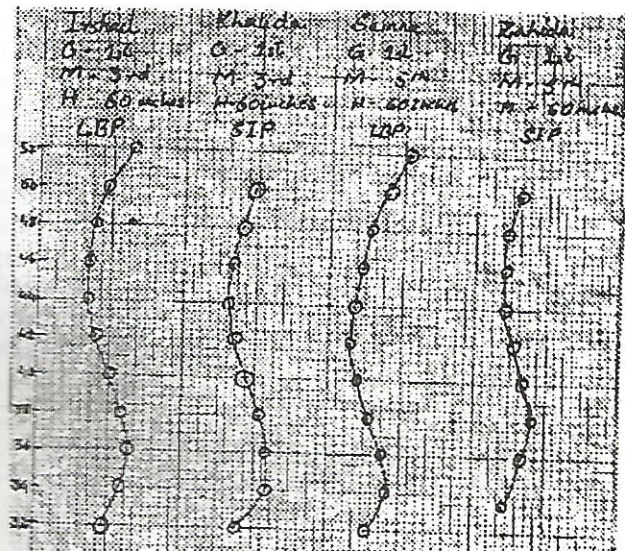
Patients and Methods

A total number of 120 women were included in this study but for various reasons results of 20 were not included. 100 healthy women from 12th week to 30th week of gestation have participated in the test. The spinal curves were measured with the help of spondylometer and graphs were developed accordingly.

Discussion

About 120 women were included in this study. But for various reasons 20 were omitted. Therefore, the follow up was based on 100 women. The graphs show changes, which results during the pregnancy. The musculoskeletal morphology of maternal trunk is affected due to increased weights and dimensions of uterus and other contents⁽²⁾. The maternal inferior diameter is increased thus altering the relationship between superior and inferior abdominal muscle attachments^(2,7). In addition, the increase in anterior and lateral dimensions of abdominals increases the distance between muscle attachments. The increase in anterior abdominal dimensions alters the angle of pull of these muscles in Sagittal Plane². In some women, the rectus abdominous muscle moves laterally. And this may remain separated in the immediate post birth period⁽⁸⁾. The increased length of these muscles and altered angle of pull affect their ability due to mechanical disadvantage and therefore affects the stability of pelvic floor muscles⁽²⁾. In many cases, these muscles are weak due to frequent

pregnancies or due to lack of exercise. In such cases the lumber lordosis is more common along with anterior tilting of pelvis. This tilting of pelvis anteriorly creates extra strain on sacroiliac joint, resulting in Sacroiliac Pain and Symphysis Pubis Pain. (Graph 5)



In second group of women, it was observed from spondylograph that they have some postural problems. The graphs of such group of pregnant women show that they are more kyphotic and this process advances with the progress of pregnancy than in a normal case which usually become more lordotic. The reason for this may be that, when there is increase in anterior abdominal pressure, the center of gravity displaces upwards and forwards⁽¹⁾ which require postural compensation for balance and stability. Such women are required to bend forward. In such cases mental attitude of women is also influenced. The forward hanging of arms results in forward head raise to have a normal alignment^(1,8). This posture gets worse and worse with progress of pregnancy and these women complain many problems like cervical pain, radiating pains to shoulders and arms, costal margin pain and in some cases breathlessness too. The bad posture of standing, sitting and in other activities, in these women alter the body alignment and extra pressure is created on extensors of back especially strain is produced on lower back muscles. So low back pain is the main problem is such women. (Graph 5).

Conclusion

In nonclusion, the pregnancy related back pain usually recovers with in the first 6 months after delivery. Women with back pain in their earlier life are more prone to be attacked by back pain during pregnancy. Good physical fitness reduces the risk of back pain during pregnancy. An individually designed program is required to differentiate between low back pain and Sacroiliac pain. Low back pain appears due to adaptation of poor posture during

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pregnancy while lumbar Lordosis and hormonal changes result in SI joint strain. Pregnant woman should take physical treatment and postural educational program as soon as back or pelvic pain appears.

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