

ORIGINAL ARTICLE

Obstetric Restless Legs Syndrome in Industrialized Area of Pakistan

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ABSTRACT:

Objective: To determine the frequency of obstetrics Restless legs syndrome (RLS) in industrialized area of Karachi and to identify possible risk factors of RLS in Pakistani population.

Materials and Methods: This cross-sectional study was carried out in a Teaching Hospital from 1st January 2013 to 31st January 2014. All pregnant women of 20-44 years old in first trimester without peripheral vascular disease, painful legs, peripheral neuropathy, nocturnal leg cramps and moving toes were enrolled in the study. A close-ended questionnaire developed from International RLS Study Group was used. The diagnosis of RLS was then ascertained by the obstetrician by using the criteria of the International RLS Study Group and they were labeled as "RLS sufferers" and were kept in RLS group while others that is non RLS sufferers were kept in the healthy group. Descriptive and comparative statistical analyses were performed using SPSS Statistical Software 17.

Results: During a period of thirteen months, 900 pregnant women were interviewed and examined out of these 85.7% fulfilled the criteria and constituted the study population. Out of these 31.90% were RLS sufferers. Among RLS sufferers 55% were resident of industrialized area. The majority of RLS sufferers were multigravida and in their advance pregnancies.

Conclusion: The frequency of obstetrics Restless legs syndrome (RLS) in industrialized area of Karachi is 31.90%. Possible risk factors of RLS in Pakistani population are multigravidity, advance pregnancy, industrialized area etc.

Keywords: Obstetrics restless legs syndrome, Frequency, Industrialized area, Risk factors

INTRODUCTION:

Restless legs syndrome (RLS) is a neurologic movement disorder that is often associated with a sleep complaint. Sufferers of RLS have an irresistible urge to move their legs, which is usually due to displeasing feelings that are worse during periods of inactivity and often affect sleep specially at night. Patient often has unpleasant sensation or pain in limbs. Restless Legs Syndrome (RLS) is very common during pregnancy especially in advance pregnancy. Unfortunately its etiology¹ is poorly understood that is why it is under-diagnosed and so poorly treated.

The frequency of RLS upsurges as the age advances. There is a significantly higher prevalence of RLS in female gender, gravid women, end-stage renal disease and in patients with diabetes.

The negative impact of RLS on quality of life is enormous. The discomfort of RLS and periodic limb

movements interfere with the initiation and continuation of sleep resulting in inadequate and insufficient sleep and imprecise daytime functioning. Alterations in sleep are also commonly reported during pregnancy.² An association between the two disturbances can be suspected as in gravid women the risk of RLS is greater than the general population³. Several studies have been done on RLS during pregnancy^{4,5} but none has been documented in industrialized area and on the probable predictors of RLS in entire pregnancy. Some have focused on mid trimester and others on last trimester. The diagnosis of RLS is based primarily on the patient's history. Often, patients do not bring RLS symptoms to the physician's attention; therefore, it can be helpful to include general sleep questions in the review of systems (Table 1a). When RLS is suspected, more specific questions should be asked.^{6,7} (Table 1b)

Table: 1a Sleep/Wake Profile

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Received: 03-07-2015

Revised: 02-09-2015

Accepted: 05-09-2015

1. How has the patient been sleeping recently? (Ask the patient and bed partner.)
Suggested questions following a sleep complaint:
 1. When did the problem begin? (To determine acute vs. chronic insomnia).
 2. Does the patient have a psychiatric or medical condition that may cause insomnia?
 3. Is the sleep environment conducive to sleep? (Relates to noise, interruptions, temperature, light).
 4. Does the patient report "creeping, crawling or uncomfortable, difficult-to-describe feelings" in the legs or arms that are relieved by moving them? (Relates to restless legs syndrome).
 5. Does the bed partner report that the patient's legs or arms jerk during sleep? (Relates to periodic limb movements of sleep).
 6. Does the patient snore loudly, gasp, choke or stop breathing during sleep? (Relates to obstructive sleep apnea).
 7. Is the patient a shift worker? What are the work hours? (Relates to circadian sleep disorders/sleep deprivation).
 8. What times does the patient go to bed and get up on

Table: 1a Sleep/Wake Profile (continued)

- breathing during sleep? weekdays and weekends? (Relates to poor sleep hygiene and sleep deprivation).
9. Does the patient use caffeine, tobacco or alcohol? Does the patient take over-the-counter or prescription medications, such as stimulating antidepressants, steroids, decongestants or beta-blockers? (Relates to substance-induced insomnia)
- Signs of sleepiness:
1. What day time consequences, such as fatigue, sleepiness, confusion or difficulty concentrating, does the patient report?
 2. Does the patient report dozing off or have difficulty staying awake during routine tasks, especially while driving?

Table: 1b
Essential diagnostic criteria (all must be met)

1. An urge to move the legs usually but not always accompanied by, or felt to be caused by, uncomfortable and unpleasant sensations in the legs.
2. The urge to move the legs and any accompanying unpleasant sensations begin or worsen during periods of rest or inactivity such as lying down or sitting.
3. The urge to move the legs and any accompanying unpleasant sensations are partially or totally relieved by movement, such as walking or stretching, at least as long as the activity continues.
4. The urge to move the legs and any accompanying unpleasant sensations during rest or inactivity only occur or are worse in the evening or night than during the day.
5. The occurrence of the above features is not solely accounted for as symptoms primary to another medical or a behavioral condition (e.g. myalgia, venous stasis, leg edema, arthritis, leg cramps, positional discomfort, habitual foot tapping).

Present study was designed to determine the frequency of RLS in pregnancy in industrialized area of Karachi and to formulate promising risk factors of RLS in a Pakistani pregnant population.

MATERIALS AND METHODS:

This cross sectional study of pregnant women aged 20 to 44 years was carried out in the Gynecology and Obstetrics Department of Jinnah Medical and Dental College, Karachi for a period of 13-month from 1st January 2013 to 31st January 2014. Pregnant women with neurological disorders, the patients with peripheral vascular disease, the patients with painful legs, patients with peripheral neuropathy, patients with sleep disorders, patients with akathisia, patients with nocturnal leg cramps and moving toes were excluded. The included population was studied by means of a close-ended questionnaire being filled by one to one interview by the medical staff of the Obstetrics and Gynecology Department. The study and its aims were explained to the participating women and their verbal consent was obtained before conducting the interview. The questionnaire designed to assess the patient's characteristics had two parts. The first part was about subject identification (woman's name, initials, date of birth) and demographic characteristics of the woman

(age, marital status (married, separated, widow), professional status, number of previous pregnancies and type of pregnancy (single, twin or multiple pregnancies). In the second part, the participants were requested to reply the questions as defined by the International RLS Study Group⁸, the trimester of the RLS apparition during pregnancy, its eventual presence before this pregnancy or during previous pregnancy. If RLS was already present before the pregnancy, additional data were gathered: its frequency (less frequent, the same, more frequent than actually) and its severity (less severe, the same, more severe than actually). The diagnosis of RLS was then ascertained by the obstetrician by using the criteria of the International RLS Study Group. For the confirmed diagnosis of RLS, all these criteria must be present in a participant so as to symbolize her as "RLS sufferer" group whereas four or less than four criteria represented a "healthy group". There was no selection prior to giving the questionnaire, meaning that the two groups with and without RLS were constituted in an independent manner. Descriptive and comparative statistical analyses were performed using SPSS Statistical Software 17.

RESULTS:

During this 13-month period, a total of 900 women were interviewed and questionnaires were filled. 771 questionnaires (85.66 %) were satisfactorily filled in and constituted study population. Out of 771 participants, 246 (31.90%) had fulfilled all the criteria and were diagnosed as "RLS sufferers" group and the remaining constituted the "healthy group".

Among the 246 RLS suffers 136 patients were found to be residents of industrialized area of Karachi that constitute 55.28% of RLS suffers group. 35% of RLS suffers were in their first pregnancy and 65% were in their second or more gravidity. Out of all multigravida 21.13% patients were in their second, third or fourth pregnancies while 43.90 were in their fifth or more pregnancy (Table 2). Among the 160 multigravidae, RLS suffers who had one or more than one pregnancy in past 38% of them had the same complaint in previous pregnancy and 35% had the same complaint in past without pregnancy.

Among the women who developed RLS during pregnancy only 8.5% complained of these symptoms during their first trimester, 31.4% during second trimester and more than half of them (60.1%) during the last trimester (Table 3).

Table: 2
Characteristics of RLS and Healthy groups

	RLS Group		Healthy Group	
	Number	Percentage	Number	Percentage
Total number of patients	246	31.90	525	68.09
Resident of industrial area	136	55.28	282	53.71
Primigravida	86	34.95	202	38.4
Multi-gravida	52	21.13	124	23.6
Grand multigravida	108	43.90	199	38.0
Positive past obstetrics RLS history	61	38	111	21
Positive past RLS history	67	42	131	25

Table: 3
Duration of pregnancy in RLS Patients

Trimester	Number(246)	Percentage (%)
First trimester	21	8.5
Second trimester	77	31.4
Third trimester	148	60.1

DISCUSSION:

The relationship between RLS and pregnancy was first reported by Ekbom⁹ in his original publication in 1945 and confirmed later by a number of surveys and systematic studies^{10,11,12,13,14} but none focused on obstetric RLS in industrialized area. Our study is devoted to obstetric RLS in this particular area.

Prevalence of RLS in general population is ranging from 5% to 10%.⁹ As we know that gravidity is a significant risk factor and the stated incidence of RLS among pregnant women is 20–26%^{15,16,17,18} and in some studies even to 30%.^{19,20,21} This indicates that gravid women have a two to three time greater risk of suffering from RLS than in the overall. Our study validates the great occurrence of RLS during gravidity. The prevalence of obstetric RLS in our patients was (31.90%). This comparatively greater occurrence of obstetric RLS in our study might be owing to environmental (air and noise) pollution and chemical pollution in industrialized area and top of this low socioeconomic status of pregnant women and high parity in this area. However, this relatively high prevalence of RLS could be due to our evaluation which was assessed through a performa which was filled by asking the patients themselves²². The risk of false positivity might be pertinent, since mimic symptoms are frequent during pregnancy. In fact, in a previous study¹⁴, only women at 32–34 weeks' gestation were assessed as having RLS, but the four RLS criteria were not used.

Factors associated with RLS are numerous, but positive RLS past history and obstetric RLS in previous pregnancies increase the risk of RLS^{15, 16, 23, 24} in the index pregnancy. In RLS sufferers with positive past history, the prevalence of RLS was significantly higher for multigravida women than for primigravida. This shows that pregnancy could be a major non-genetic factor which increases the risk of developing RLS,²² but only for those with positive past history of RLS²⁴. Thus, the fact that women with RLS affected history have a higher chance of developing it during pregnancy means that a particular genetic background is probably necessary in order to develop RLS during pregnancy. Pregnancy could increase the RLS risk in all women, but clinical symptoms could only appear in some predisposed women. Another possibility could be to verify the frequency of the already known allelic variants for RLS in these women. Beside genetic factors, RLS in prior pregnancies or RLS in the past without pregnancy are also important risk factors for RLS during pregnancy^{16, 19}. In our study 80% RLS sufferers had positive RLS history with or without pregnancy and only 20% experienced RLS for the first time during the current pregnancy. As we have seen in other studies RLS seems

to be more frequent and more severe among women with previous pregnancies than women without children²⁵. This could suggest that only one pregnancy is sufficient to generate ongoing modification in organic elements which later leads to RLS²⁴. Although the obstetric RLS prevalence increases throughout the pregnancy it is highest during the third trimester which is the most critical^{9, 10, 14, 19,20,21} as with 8.5% of expectant in our study were affected during the first trimester, reaching 60.1% during the third trimester. Other studies also confirm increasing prevalence with advance pregnancy.^{1, 8, 10, 14,15,16 18} This may be because of gravidity associated hormonal changes, i.e., rise in prolactin, placental lactogen, progesterone and estrogen levels. These chemicals upsurge dramatically during the latter half of pregnancy and associates well with commencement of RLS symptom in gravid women in advance pregnancy.

Our study has some constraints. Primarily, this is a solitary study in an industrialized area tertiary care center in non-governmental sector, and therefore it may not be a true illustration of the population. Secondly, we did not follow-up the patients afterward so we cannot say anything about the sequence of obstetric RLS in Pakistani society. Thirdly, we used reputable diagnostic standards of RLS which were translated in our native language Urdu without any authentication study.

CONCLUSION:

The frequency of obstetric Restless legs syndrome (RLS) in industrialized area of Karachi is 31.90 % Possible risk factors of RLS in Pakistani population are multigravidity, advance pregnancy, industrialized area etc.

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