

Prevalence and Associated Factors of Restless Leg Syndrome (RLS) in Pakistani Women during Pregnancy

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ABSTRACT

Aim: To determine the prevalence and associated factors of restless leg syndrome (RLS) in Pakistani women during pregnancy.

Study design: Cross-sectional study

Place and duration of study: Department of Obstetrics & Gynaecology, Pir Abdul Qadir Shah Jeelani Institute of Medical Sciences, Gambat from 1st January 2021 to 31st December 2021.

Methodology: One hundred and twenty patients information were collected by interviewing them to assess and document data related to factors associated with their RLS. Four criteria were used for diagnosis RLS based on related literature reference. The severity condition was assessed with the ten items with rating as five points starting from none to v. severe. Epworth Sleepiness Scale was used to analyses day time sleep while quality of sleep was analyzed by using Pittsburgh-Sleep Quality-Index.

Results: Obesity was presented as highest comorbidity with 56.6% of prevalence in RLS pregnant women followed by hypertension. Within the RLS pregnant women it was observed that majority were taking tea with a prevalence of 61% while 36% were consuming coffee as well. The univariate analysis showed that third trimester, depression and parity were significant factors associated with the RLS during pregnancy.

Conclusion: Restless leg syndrome is associated with factors as third trimester, poor quality of sleep, depression and parity while depression and hypertension were also seemed to carry a substantial role in development of RLS.

Keywords: Third trimester, inactivity, pregnancy, prevalence, serotonin

INTRODUCTION

Rest-less leg syndrome (RLS) is a sensory motor disorder also known as Willis-Ekbom disease that is characterized by urge to move legs especially during rest or inactivity. It is often marked as creepy crawly feelings in legs that can be relieved by movement or activity. It can vary from mild to severe depending upon various factors including health of a person^{1,2}. Studies have suggested that, caffeine, alcohol and smoking could be the triggers of this syndrome³. It could be primary or secondary, and secondary is more prevalent among pregnant females. Other factors that can be the cause of secondary RLS are diabetic neuropathy, Parkinson's disease, renal insufficiency and iron deficiency anemia⁴.

Evidence highlights that, iron deficiency alters the dopaminergic pathways that could be the major determinant of this syndrome.^{5,6} Genetic etiological factors could also lead or increase the chances of RLS². Less serotonin transporter in brain stem may also contribute to the development of this syndrome by releasing more serotonin in brain⁷. Present data suggests that, it adversely affect pregnancy by causing many complications including intrauterine growth retardation, premature delivery and chances of miscarriages⁸. RLS is more common during third trimester of pregnancy and usually ends after delivery. Race and ethnic difference also play role in the development and progression of restless leg syndrome.⁹ Its prevalence is high in pregnant women ranging from 10-46% as compared to general population where its reported prevalence is only 2-10%.¹⁰ Study conducted in Saudi Arabia showed incidence of RLS in pregnant women is ~21%.¹¹

Its diagnosis can be made on four bases such as urge for the legs movement with or without sensation, improvement in symptoms after activity, worsening of disease symptoms with rest of inactivity and worsening of RLS symptoms at night.¹² Present study was designed to find the prevalence of RLS among pregnant females of Pakistan. Associated factors were also determined which prove helpful in finding the severity and contributing elements of this syndrome.

MATERIALS AND METHODS

This cross-sectional analytical study was conducted at Department of Obstetrics & Gynaecology, Pir Abdul Qadir Shah Jeelani Institute of Medical Sciences, Gambat from 1st January 2021 to 31st December 2021. A total of 120 pregnant women suffering from RLS through their clinical signs and symptoms were enrolled. The sample size calculation was WHO analysis base with 95% confidence of interval and 80% power of test and 2-5% prevalence of RLS in pregnant women. Informed written consent was gained from each participant before their enrolment in the research. Each patient's information was collected by interviewing them to assess and document data related to factors associated with their RLS. All the information was entered in a well-designed questionnaire. Four criteria were used for diagnosis RLS based on related literature reference. This includes; 1. longing to move legs to extremities with definable-discomfort 2. motor-restlessness 3. Symptoms worsening while at rest with only impermanent relief by movement and 4, symptoms worsening in later period of day/night. The presence of all 4 criteria confirmed RLS. The severity condition was assessed with the ten items with rating as five points starting from none to v. severe. Epworth Sleepiness Scale was used to analyses day time sleep while quality of sleep was analyzed by using Pittsburgh-Sleep Quality-Index. Those pregnant women having neuropathy history as well as RLS earlier diagnosis in pregnancy were excluded from the research. Univariate analysis was used for analysis through application of SPSS version 26.0. P value <0.05 was taken significant.

RESULTS

The mean age of the pregnant women was 29.6±3.3 years with highest number of women between the age group of 29-38 years. Obesity was presented as highest comorbidity with 56.6% of prevalence in RLS pregnant women. This was followed by 25% women suffering from hypertension. There were 35% those women who were having history of abortion while 73.3% of the pregnancy women were in their trimester of their pregnancy (Table 1).

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Within the RLS pregnant women it was observed that majority were taking tea with a prevalence of 61% while 36% were consuming coffee as well. A very insignificant number of women were also having energy drink consumption and smoking habit (Fig. 1). There was a significant difference in trimesters of RLS pregnant cases. While only 10% women were telling to have a good sleep on scoring scale and bad was recorded in 66.6% of the cases. Day time sleep was observed in 30% of the cases (Table 2). The univariant analysis showed that third trimester, depression and parity were significant factors associated with the RLS during pregnancy while depression and hypertension were having a p-value of 0.138 and 0.334 with a 95% CI of 0.81-4.6 and 0.64-5.5 respectively (Table 3).

Table 1: Clinical characteristics of the RLS pregnant women (n=120)

Characteristics	No.	%
Age (years)		
18-28	50	41.6
29-38	60	50
>39	10	8.3
Comorbidities		
Hypertension	30	25.0
Diabetes	25	20.83
Obesity	68	56.5
Depression	17	14.1
Prima Gravida		
Parity	3±2.1	
Gravida	3.7±2.8	
Previous Abortion	42	35.0
Third Trimester	88	73.3

Table 2: Trimester history and Sleep scoring in RLS pregnant women

Variable	Yes	No	P value
Trimester			
1 st	16 (13.3)	104 (86.6)	<0.5
2 nd	16 (13.3)	104 (86.6)	
3 rd	88 (73.3)	32 (26.6)	
Sleep			
Good	12(10)	28 (23.3)	0.49
Bad	80 (66.6)	40 (33.3)	
Day Time Sleep	36 (30)	24 (20)	0.55

Fig. 1: Caffeine and Nicotine usage in RLS pregnant women

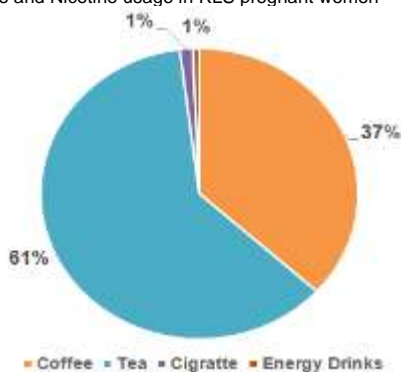


Table 3: Univariant analysis of RLS cases during pregnancy

Characteristics	Univariant analysis		
	P value	OR	95% CI for OR
Age	0.951	1.0	0.96-1.03
Hypertension	0.138	1.9	0.81-4.6
Diabetes	0.822	1.1	0.48-2.5
Obesity	0.765	0.9	0.21-1.43
Depression	0.334	1.9	0.64-5.5
Parity (mean±SD)	0.261	1.0	0.96-1.19
Gravida (mean±SD)	0.442	1.2	0.94-1.14
Previous Abortion	0.918	1.0	0.61-1.54
Third Trimester	0.011	1.9	1.15-3.3

DISCUSSION

Restless leg syndrome is characterized by pain or restless feeling in legs especially during night. Its frequency appeared to be higher especially among pregnant women. Various factors can be involved in RLS. Very few studies have been conducted in Pakistan in this regard. Present study was designed for the evaluation of prevalence and factors which are involved in the development of this syndrome.

Trimester history showed considerable difference in results. Frequency of restless leg syndrome was quite low during 1st and 2nd trimester (13.3% only) whereas it was about 74% in third trimester of the pregnancy. A study conducted in Turkey reports the prevalence of RLS as 10%¹³ while Pakistani study highlights the incidence rate upto 30%¹⁴. This syndrome also adversely affects the quality of sleep. Studies reported that some women report poor sleep quality and day time sleepiness. In present study, good quality sleep was noticed in only 10% of the females while 66% of the females were suffering from bad quality sleep according to the scoring scale. This is much similar to studies conducted in Taiwan¹⁵. Sleep deprivation further leads to mood disturbance, depression and day time sleepiness¹⁶⁻¹⁸.

Comorbidities also exacerbate the chances of RLS in pregnant females. Positive history of diabetes mellitus could be an independent predictor of restless leg syndrome with estimates risk ranging from 1.6-4.7%¹⁹. In present study, twenty percent of the females had history of diabetes. Gestational diabetes can also be strongly related with the higher chances of RLS. Investigators highlights that, women who had positive history of diabetes had three folds' higher chances of RLS as compared to normal population²⁰.

CONCLUSION

Restless leg syndrome is associated with factors as third trimester, poor quality of sleep, depression and parity while depression and hypertension were also seemed to carry a substantial role in development of RLS.

Conflict of interest: Nil

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