Prevalence of Restless Leg Syndrome and Its Associated Factors among Pregnant Females

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Abstract:
The study was conducted to check the prevalence and associated factors among pregnancy. It was an observational cross sectional study. 102 pregnant females was carefully chosen for the study. Different private and Govt. hospital of Karachi. Each participant was asked to stand in a quiet room. Face to face interview was conducted. Consent form was given to females who were willing to participate. Physical investigation was done. The prevalence is 32 % in France. The prevalence of Brazil is 13.5%. In Japan the prevalence is 19.9%. Research confirmed high prevalence of RLS in third trimester there is less awareness on RLS in females. RLS can have adverse effect in pregnant females as it may persuade sleep complaint. The exact cause of RLS is unknown. The factors include dietary factors, hormonal factors, physiological changes and genetic factor during pregnancy. Restless Legs Syndrome was 47.1% with IRLS Scores between 21 – 30. Prevalence of Very Severe Restless Legs Syndrome was 46.1% with IRLS Scores between 31 – 40, there were none of the sample found at mild stage who had IRLS scores between 1 – 10. the outcomes of Epworth Sleepiness scale, it was found that 64.7% of the females her Normal ESS Score of between 0 -10, so the overall prevalence of Epworth Sleepiness in our data was 35.3%. The prevalence of Mild Epworth sleepiness was 29.4% with ESS scores between 11 – 14, prevalence of moderate Epworth Sleepiness was 5.9% with ESS Scores between 15 – 18, and none of the sample was found to be at severe stage of Epworth sleepiness, i.e. a ESS Scores between 19 – 24.

Key words: Pregnancy, Restless leg syndrome, pregnant females, Stress

Introduction:
Pregnancy which is also known as incubation is the time when one or more offspring developed inside women. Pregnancy is divided into three trimesters, first trimester which is from 1 week till 12 weeks. Second trimester from 13 to 28 weeks and third trimester from 29 to 40 weeks. In 1945, a Swedish neurological Willis Kebob explained a medical condition known as RLS. It is a neurological movement related disorder. There are two types of RLS primary or secondary. The primary RLS is idiopathic and is usually genetic and the secondary is usually associated with condition like pregnancy, anemia and kidney failure. It is diagnosed clinically the International RLS study group Rating Scale (IRLS) essential criteria:

a) An urge to move the legs or other parts of the body.
b) The urge to move sensations begin during periods of rest.
Symptoms of RLS described in late 17th century. A century later, described a similar condition which was seen “frequently...in clinical practice” involving everyday women, who when the evening comes, cannot keep their legs still for a single minute because of the restlessness they feel in them. Before the mid-1900s, RLS symptoms were thought to be functional impairments related to hysteria, neurosis, or neurasthenia. The anatomy and physiology of women is altered during pregnancy, some of these alterations can predispose women to symptoms of RLS. Dopamine is a Neuro transmitter formed by the substantia nigra in the basal ganglia of the CNS and is essential for synchronized and smooth functioning of muscle activity. A dopamine deficiency in individuals prone to RLS is one hypothesis for the symptoms. Normally within a 24 hour time and during the night time hours, an individual will exhibit a drop in serum iron level by up to 40-60% and a reduce in dopamine production. For the RLS sufferer, this circadian fall in both iron and dopamine sign the onset of symptoms. It is hypothesis that diminishes in serum iron reject production of tyrosine hydroxylase in the CNS, essential enzymatic step in the production of dopamine. Decreased nighttime dopamine can lead to the dysesthasias experienced by RLS sufferers. It is well known that placental hormones, especially estrogen, increase throughout pregnancy and decline after delivery. Recently, estradiol levels were noted to be elevated in pregnancies complicated by RLS. It is possible that the inhibitory effects of estradiol on dopaminergic systems. In addition, treatment of venous insufficiency has been found to improve symptoms of RLS. Moreover, changes in hemodynamic during pregnancy may lead to peripheral hypoxia that could be one cause behind the onset of RLS during pregnancy. RLS has also been found to be associated with depressed mood in pregnant women. Moreover, it has been reported recently that reasonable to severe RLS going on before pregnancy increases the risk for peri natal and postnatal depression. As a result of sleep disturbance and the failure to stay still.

The main consequences of severe RLS are:

a. Sleep disruption: RLS is the sleep disorder which causes the most chronic loss of sleep. Results from several surveys report that most RLS patients slept an average of 5 hours a day. Sleep loss by itself causes daytime sleepiness, difficulties concentrating, loss of presentation and negatively impacts mood.

b. Difficulties resting and remaining still: this happens mostly in the evening and at night, but also at other times during the day. As a result patients have difficulties with work, travelling and social events.

c. The urge to move relieved by movement.

d. The urge to move or unpleasant sensations, usually worse in the evening or night.

Methods:

It was the descriptive cross sectional study. The study was conducted at different government and private sector of Karachi. Pregnant females were included in this study who satisfied all four standard diagnostic criteria defined by IRLS between the ages of 18 to 40. Face to face interview was conducted. Consent form was given to females who were willing to participate. International RLS study group rating scale and The Epworth sleepiness scale form were used.

Results:

The baseline characteristics of 102 samples it was found that mean age of the respondents was 27.01 years with 4.58 years of standard deviation, mean
weight was 66.81 kilogram, mean height was 5.25 meter, mean body mass index was 26.29 kg/m², average parity was found 1.58 child with standard deviation of 1.31, then mean scores of IRLS of the respondent was 29.85 with standard deviation of 6.08 and mean scores for Epworth scores were 9.24 with standard deviation of 3.32.

The prevalence of Restless Legs syndrome. It was found the prevalence of moderate RLS was 6.9% with IRLS scores between 11 – 20, prevalence of severe Restless Legs Syndrome was 47.1% with IRLS Scores between 21 – 30, Prevalence of Very Severe Restless Legs Syndrome was 46.1% with IRLS Scores between 31 – 40, there were none of the sample found at mild stage who had IRLS scores between 1 – 10.

The outcomes of Epworth Sleepiness scale, it was found that 64.7% of the females her Normal ESS Score of between 0 -10, so the overall prevalence of Epworth Sleepiness in our data was 35.3%. The prevalence of Mild Epworth sleepiness was 29.4% with ESS scores between 11 – 14, prevalence of moderate Epworth Sleepiness was 5.9% with ESS Scores between 15 – 18, and none of the sample were found to be at severe stage of Epworth sleepiness, i.e. a ESS Scores between 19 – 24.

Baseline Characteristics of Sample Data:

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mean</th>
<th>Standard Deviation</th>
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<tr>
<td>(n= 102)</td>
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<tr>
<td>Age (Years)</td>
<td>27.01</td>
<td>4.58</td>
</tr>
<tr>
<td>Weight (Kg)</td>
<td>66.81</td>
<td>10.83</td>
</tr>
<tr>
<td>Height (m)</td>
<td>5.25</td>
<td>0.13</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>26.29</td>
<td>4.04</td>
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<tr>
<td>Parity</td>
<td>1.58</td>
<td>1.31</td>
</tr>
<tr>
<td>RLS Scores</td>
<td>29.85</td>
<td>6.08</td>
</tr>
<tr>
<td>Epworth Scores</td>
<td>9.24</td>
<td>3.32</td>
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Prevalence of IRLS:

<table>
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<tr>
<th>Scale</th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td>Restless Legs Syndrome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild (1-10)</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Moderate (11-20)</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Severe (21-30)</td>
<td>48</td>
<td>47</td>
</tr>
<tr>
<td>Very Severe (31-40)</td>
<td>47</td>
<td>46</td>
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International Journal of Contemporary Research and Review, Vol. 9, Issue. 01, Page no: MS 20426-20431
doi: http://dx.doi.org/10.15520/ijcrr/2018/9/01/412
Prevalence of Epworth Sleepiness:

<table>
<thead>
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<th>Scale</th>
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<th>n</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Epworth Sleepiness</td>
<td>Mild (11 - 14)</td>
<td>30</td>
<td>29.4</td>
</tr>
<tr>
<td></td>
<td>moderate (15 -18)</td>
<td>6</td>
<td>5.9</td>
</tr>
<tr>
<td></td>
<td>Severe (19 - 24)</td>
<td>none</td>
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</table>

Discussion:

A cross sectional study was conducted to investigate the prevalence of RLS during pregnancy and its associated factors showed that RLS is common in pregnancy linked with poor sleep and increase chance of cesarean delivery. A research was conducted on Prevalence and impact of restless leg syndrome in pregnancy the result showed that there is increase prevalence of RLS in pregnant women as compared to general population. Michal
Minar compared the clinical feature of idiopathic and secondary RLS among pregnant women. The results showed that the sleep disturbances are caused in idiopathic RLS. RLS is a disorder which usually begins in evening and disturbs a person from sleep. According to a study the prevalence of RLS is increased during the 3rd trimester. The conducted research showed that RLS is not only common in stress otherwise the prevalence in all trimester is common with or without it. Usually RLS in pregnant women is misdiagnosed. It is true that the RLS in our society is ignored mainly because of unawareness rather than other. In my study the prevalence of mild RLS was none, moderate RLS was 7%, severe was 47% and very severe RLS was 46%. The prevalence of normal sleepiness was 64.7%, mild sleepiness was 29.4%, moderate sleepiness was 5.9% and no severe sleepiness was found.

Conclusion:
Research confirmed high prevalence of RLS in third trimester there is less awareness on RLS in females and in general population and the medicinal specialists. RLS can have adversative consequence in pregnant females as it may persuade sleep complaint. The exact cause of RLS is unidentified. The factors include dietary factors, hormonal factors, physiological changes and genetic factor during pregnancy. Further research is needed to find the cause of RLS in pregnancy.

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International Journal of Contemporary Research and Review, Vol. 9, Issue. 01, Page no: MS 20426-20431
doi: http://dx.doi.org/10.15520/ijcrr/2018/9/01/412  Page | 20430