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Research Article

SYNDROME OF RESTLESS LEGS IN THE PATIENTS ON HAEMODIALYSIS SUFFERING WITH END STAGE RENAL DISEASE

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Abstract:

Objective: The purpose of this research work is to determine the occurrence of SRL in patients of ESRD (End Stage Renal Disease) patients on HD (Hemodialysis).

Methodology: Two hundred & fifty patients gave information about chronic maintenance hemodialysis. To evaluate the occurrence of the syndrome of restless legs, medical diagnostic standard was in use which is the establishment of the international group of syndrome of restless legs.

Results: A sum of two hundred and fifty patients was the part of this research work. Male patients were 61.20% (n: 153) while female patients were 38.80% (n: 97). The average age of the patients was 45.270 years. The average period of hemodialysis was 26.1 months. Syndrome of restless legs was available in total 64.8% (n: 162) patients. Out of one hundred and fifty-three male patients, 56.0% (n: 87) were the patients of syndrome of restless legs and among ninety-seven females, 77.30% (n: 75) were the victims of syndrome of restless legs. There was a strong correlation of the syndrome of restless legs with the gender. Total 63.60% (n: 159) patients were under the age of fifty-one years; among them 64.10% (n: 102) were the victims of syndrome of restless legs while 36.40% (n: 91) patients of more than fifty-one year of age, 65.90% (n: 60) patients were the victims of syndrome of restless legs. We found that there was no significant association among syndrome of restless legs with the groups of age.

Conclusions: Syndrome of restless legs is very frequent in the patients who were undergoing the regular hemodialysis. This syndrome is most prevalent in females.

KEY WORDS: Renal, Hemodialysis, Syndrome, Correlation, Dopaminergic, Excitability.

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INTRODUCTION:

The reduction in the intra-cortical excitability's dopaminergic modulation in addition with decreased supra-spinal reticence & enhanced excitability of the spinal cord leads to the establishment of the syndrome of restless legs [1]. There are about 1.50 million ESRD patients in only South Asia. According to different research works, this occurrence is very high as compared to the prevalence in the developed countries of the world. Jha V evaluated the age adjusted prevalence of end stage renal disease was two hundred and thirty patients per million people of South Asia [2]. In the developed countries, the occurrence of the syndrome of restless legs is ten to fifteen percent [3, 4]. The occurrence of syndrome of restless legs in the ESRD is very high in normal public as well as this prevalence is different in various part of the world from 13.30% to 28.9% [5, 6]. These differences in the prevalence are because of various techniques for the diagnosis of the problem in various populations [7].

The studies on the ESRD patients have proved that the availability of the syndrome of restless legs has an association with the adverse life quality and enhances the rate of mortality [8]. Patients of syndrome of restless legs also suffers from the disorders of sleep [8, 9]. Some research works have stated that there is an important effect of the social status, mental status & diabetes on the rate of syndrome of restless legs [10, 11]. Regarding the population of end stage renal disease, the deficiency of iron, anemia & dialysis therapy is some of the prompting factors which result in syndrome of restless legs [12]. We conduct this research work to identify the rate of syndrome of restless legs among Pakistani patients suffering from the end stage renal disease.

METHODOLOGY:

This research work carried out in the department of nephrology of Indus Hospital MSSH Lahore. The duration of this research work was from December 2018 to May 2019. Two hundred and fifty patients were the part of this research work with getting percentage of syndrome of restless legs as 20.30% patients with ESRD on hemodialysis [13]. The patients of both genders from fourteen to eighty-five year of age, suffering from ESRD on hemodialysis and patients who were under 4-hour dialysis every

week were the part of this research work. Females with pregnancy and patients suffering from any other serious disease were not the part of this research work. Diagnosis of syndrome of restless legs carried out according to the standard of the 2012 revised International SRL study group [7]. This standard provides the five main symptoms of this disease.

1. Unpleasant feeling during movement of legs,
2. Worse condition of the legs during rest time or inactivity because of unpleasant sensation,
3. There is partial or total recovery of the unpleasant feeling during movement
4. The unpleasant feelings during inactivity period especially in night or evening times.
5. There can be some other feature which can be responsible along with above mentioned as arthritis, edema of legs, discomfort of position, etc.

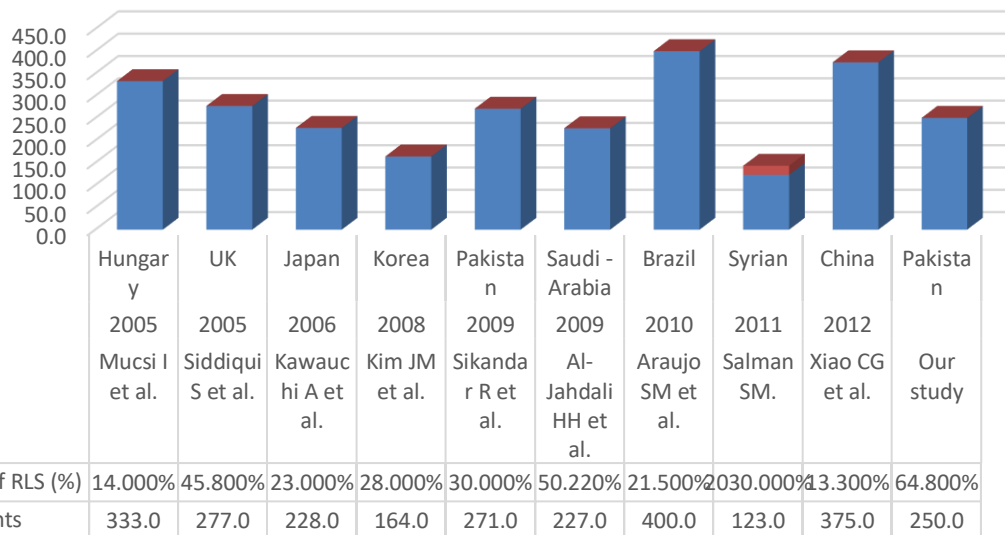
The data analysis of the collected information carried out with the help of SPSS V. 20. Chi square method was in use to assess the important disparity in the rates of syndrome of restless legs between males and females and below or above fifty-one year of age.

RESULTS:

There were total two hundred and seventy-eight patients in which twenty-eight patients refused to expose their identity for the purpose of publication. Therefore, total 250 patients were the part of this research work. The average age of the patients was 45.27 ± 13.9 years. The range of the age was fourteen to seventy-eight years but out limit was eighty-five years in inclusion criteria. The average period of hemodialysis was 26.1 months. Total 64.80% (n: 162) patients were suffering from syndrome of restless legs. Fifty-six percent (n: 87) males were suffering from syndrome of restless legs and 77.30% (n: 75) were suffering from syndrome of restless legs. There was a great association of gender and syndrome of restless legs. Total 63.60% (n: 159) patients were under the age of fifty-one years. Among them, 64.10% (n: 102) patients were the victims of syndrome of restless legs while 36.40% (n: 91) patients were available with more than fifty-one year of age and among them, 65.9% (n: 60) patients were the victims of syndrome of restless legs. There was no association of syndrome of restless legs and age groups.

Table-I: Comparison of Different Studies on RLS.

Study	Year of Publication	Country	No. of patients	Frequency of RLS (%)
Mucsi I et al.	2005	Hungary	333.0	14.000%
Siddiqui S et al.	2005	UK	277.0	45.800%
Kawauchi A et al.	2006	Japan	228.0	23.000%
Kim JM et al.	2008	Korea	164.0	28.000%
Sikandar R et al.	2009	Pakistan	271.0	30.000%
Al-Jahdali HH et al.	2009	Saudi - Arabia	227.0	50.220%
Araujo SM et al.	2010	Brazil	400.0	21.500%
Salman SM.	2011	Syrian	123.0	2030.000%
Xiao CG et al.	2012	China	375.0	13.300%
Our study		Pakistan	250.0	64.800%

Comparison of Different RLS Studies**DISCUSSION:**

This research work was conducted to find out the rate of syndrome of restless legs in the patients of end stage renal disease on hemodialysis. This research work proved that the rate of syndrome of restless legs was very high in those patients. In various research works conducted in the whole world reported the incidence of syndrome of restless legs from 10% to 15% [3, 4] & in end stage renal disease patients on hemodialysis it is from 13.30% to 28.0% [5, 6]. This most important factor for this variation in the rate of occurrence was different methods of diagnosis in different countries. The rate of syndrome of restless legs was 64.80% in current case study, 6.0% (n: 121) patients in the population of India [14], 14.23% (n: 223) patients in a research work of Japan [15], from 20.30 to 50.22% in the population of Saudi Arabia

[13, 16] & 14.0% to 21.0% in Caucasians [8, 17]. This shows that heterogeneity of the populations of study that is genetic disparities may be a cause for this large variation in the rates of syndrome of restless legs [18].

Anemia, deficiency of iron & level of calcium in serum have an association with the syndrome of restless legs but many recent research was not able to confirm the findings of those results [19]. There is belief that old age is the major risk factor for idiopathic syndrome of restless legs [20]. Previous works showed that it was not true for the patients under dialysis [21]. Some works proved that smoking has an association with the syndrome of restless legs while the use of tea & coffee has an adverse impact on syndrome of restless legs [22]. Gigli GL

concluded in his work that the duration of dialysis was less in the patients without syndrome of restless legs [23]. Further studies on the same subjects should address the limitations of this current work in future. The examination of the proofs of diabetic neuropathy did not carried out in this research work which can perform his part to increase the severity of syndrome of restless legs. Polyneuropathy incompletely describes the high rate of syndrome of restless legs in the patients of Type-2 diabetes [24].

CONCLUSION:

This research work confirmed that syndrome of restless legs is very frequent in the patients who were under regular hemodialysis. This complication was more prevalent in females. Under the dose of hemodialysis, deficiency of iron because of the economical restrictions is the main reason in the high occurrence of syndrome of restless legs in our communities. Syndrome of restless legs has an association with the adverse life quality and increases the rate of mortality. There is a requirement for the diagnosis of syndrome of restless legs in the patients under hemodialysis for end stage renal disease. There is also the need of other research works to identify the factors which are the cause of the complication and treatment methods.

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