

## Characteristics of Muscle Cramps and Remedial Measures Used By Chronic Kidney Disease Patients

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**Abstract: Background:** Renal failure is an important non-communicable disease that affects world population including India. The prevalence of End Stage Renal Disease is rising throughout the developed and developing countries. Haemodialysis is a procedure done to manage client with end stage renal failure by using an artificial kidney to replace the excretory function of the failed kidneys

**Materials and Methods:** This is an observational study conducted to understand the characteristics of muscle cramps and remedial measures used among chronic kidney disease patients. The sample size was 120 samples selected by convenient sampling.

**Results:** Among all participants maximum (39.17%) were from the age group of 41 to 50 years. With regard to sex of the patients 62.5% were males. Considering the religion maximum 85.83% were hindu religion. About the life style of the participants 61.66% were from sedentary life style. Out of all 81.67% of participants had previous experience of muscle cramps, regarding the frequency of dialysis 84.17% had twice and 65% of the participants had dialysis duration of > 3 months. More than 80% had moderate level of muscle cramps. Among all participants 14.17% were walking, 41.67% were using hot/cold application, 19.16% were using medications and 7.50% were using other remedies cope up with muscle cramps

**Conclusion:** More than 80% had moderate level of muscle cramps. As the days passes the intensity of cramps will be reduced

**Key Word:** Chronic kidney disease, muscle cramps, remedial measures.

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### I. Introduction

The people dying from kidney disease are rising over the decade. It is now estimated that 5 million to 10 million worldwide are suffering with chronic kidney disease (CKD). As there is increase in some of the chronic diseases like hypertension, diabetes and heart diseases the mortality rate related to CKD is increasing. More than 660,000 Americans requiring intervention for end-stage kidney disease, with 468,000 receiving dialysis and more than 193,000 undergoing kidney transplantation, leading to a major public health and economic burden<sup>1</sup>

CKD is defined as either kidney damage, estimated by using such markers as albuminuria, or estimated glomerular filtration rate (eGFR) less than 60mL/min/1.73m<sup>2</sup> In persons 60 years and older, approximately 30% have albuminuria and 26% have GFR of less than 60mL/min/ 1.73m<sup>2</sup> All age group population is susceptible to kidney damage because of the influence of chronic diseases such as hypertension, diabetes mellitus, and tubule interstitial disorders [6]. So early diagnosis and implementation of therapeutic strategies have been emphasized to delay the progression of disease and increase quality of life in these patients.<sup>2</sup> However, the availability of renal replacement therapy around the world is very diverse as it is directly related to the financial status of the patient. Hemodialysis is the better option to overcome the problem. Life of patients with chronic kidney disease becomes reorganized and adapted to changes resulting from the nature of the disease and the methods of its treatment. What is more, patients are dependent on the dialysis apparatus and the medical personnel. The treatment also involves limitations in the manner of eating and drinking as well as in physical activities. Due to this intensity of mental and somatic symptoms largely affects the level of the quality of life (QoL) as perceived by patients. At the same time, the occurrence of the negative symptoms of dialysis therapy such as muscle cramps, sleep disorder, depression, the weakening of fluctuations in blood pressure, and stomach ache cause the illness to be perceived as burdensome.<sup>3</sup> Among all the symptoms most frequently occurring symptom is muscle cramps. This study was opted to understand the characteristics of muscle cramps and the remedial measures used by the patients to overcome from this problem. The aim of the study was to describe the

characteristics of muscle cramps and remedial measures used by the participants to overcome from the muscle cramps.

## **II. Material And Methods**

This is an observational study conducted at B.T. Savani Kidney Hospital, Rajkot, Gujarat from 14/04/2019 to Dt. 07/07/2019.

A total 120 adult subjects (both male and females) of aged  $\geq 18$ , years were for in this study.

**Study Design:** Observational study

**Study Location:** B.T. Savani Kidney Hospital, Rajkot, Gujarat.

**Study Duration:** April 2019 to July 2019.

**Sample size:** 120 patients.

**Sample size calculation:** The total sample size was 120 chronic kidney disease patients undergoing haemodialysis.

**Subjects & selection method:** The study population was drawn from consecutive CKD patients who presented to B.T. Savani Kidney Hospital, Rajkot, Gujarat who were been diagnosed and CKD and undergoing hemodialysis

### **Inclusion criteria:**

- Patients with age group of 20-70 years
- Patients who are able to communicate in Gujarati/Hindi
- Patients who sustains stable dialysis treatment
- Patients with no musculoskeletal impairments

### **Exclusion criteria:**

- Emergency haemodialysis patients
- Patients with femoral catheter
- Patients with lower limb pathology
- Patients who are hemodynamically unstable during dialysis treatment
- Patient with concurrent medical conditions that may contraindicate exercise

### **Procedure methodology**

After written informed consent was obtained, a well-designed questionnaire was used to collect the data. The questionnaire included socio-demographic characteristics such as age, sex, education, religion, life style. It also reveals the information about clinical variables like duration of illness, frequency of haemodialysis per week, previous experience of muscle cramps, patterns of muscle cramps, measures taken to cope up with muscle cramps, weight of fluid removed during haemodialysis.

To understand the characteristics of muscle cramps the five item scale was used which include - frequency, intensity, quality, intensity of muscle cramps and muscle tone assessment. Ten point numerical intensity scale that will be used to assess the intensity of cramps. The characteristics of cramps were classified as mild, moderate and severe.

### **Statistical analysis**

Descriptive statistics – meant for demographic data and clinical profile. Inferential statistics – meant to compare the level of muscle cramps

## **III. Result**

The data has been organized and presented in two sections as follows

**Section I :** Description of demographic profile

Section II: Description of Characteristics of Muscle cramps

Section III: Description of the measures taken to cope with muscle cramps

**Table 1 Frequency and percentage distribution of hemodialysis patients according to demographic characteristics**

Sr. No	Demographic Variables	Frequency	%
1	<b>Age</b>		
	20 -30 yrs	19	15.83
	31 -40 yrs	25	20.83
	41 -50 yrs	47	39.17
2	51 -70 yrs	29	24.17
	<b>Sex</b>		
	Male	75	62.5
3	Female	45	37.5
	<b>Religion</b>		
	Hindu	103	85.83
4	Muslim	10	8.33
	Christian	7	5.83
5	<b>Life Style</b>		
	Active	24	20
	Limited Activity	32	26.67
	Sedentary	74	61.66
6	<b>Previous experience of muscle cramps</b>		
	Yes	98	81.67
	No	22	18.33
7	<b>Frequency of Dialysis</b>		
	Twice	101	84.17
	Thrice	19	15.83
8	<b>Duration of dialysis</b>		
	> 3 months	42	35
	< 3 months	78	65

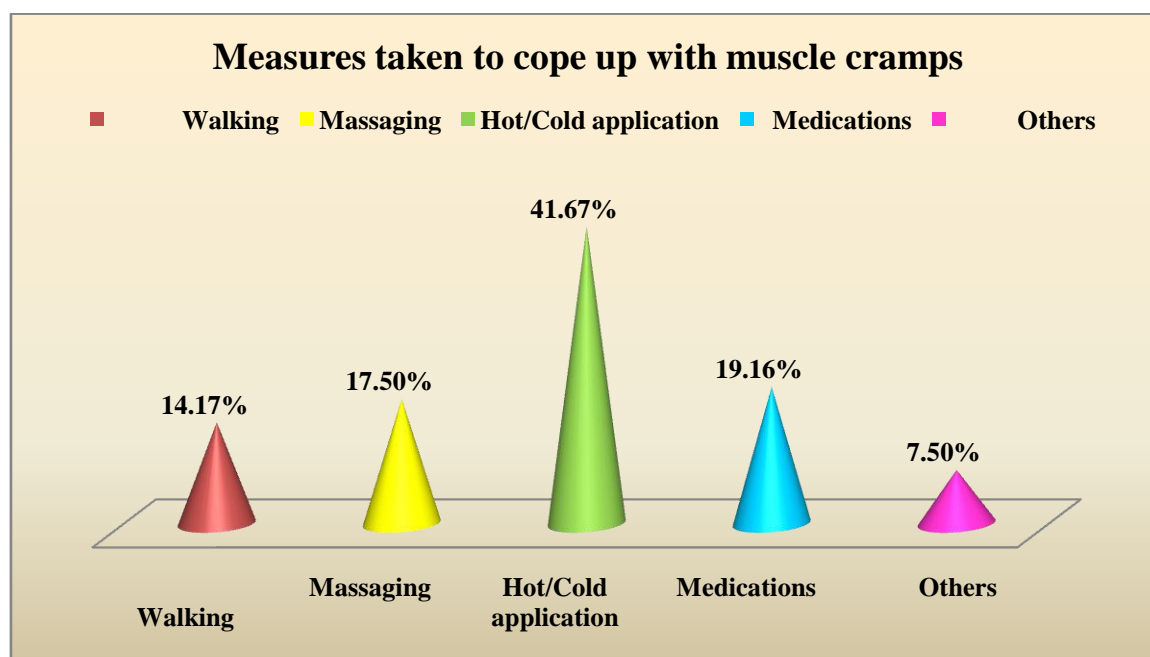
Table no 1 shows the frequency percentage distribution of demographic characteristics. Among all participants maximum (39.17%) were from the age group of 41 to 50 years. With regard to sex of the patients 62.5% were males. Considering the religion maximum 85.83% were hindu religion. About the life style of the participants 61.66% were from sedentary life style. Out of all 81.67% of participants had previous experience of muscle cramps, regarding the frequency of dialysis 84.17% had twice and 65% of the participants had dialysis duration of > 3 months.

**Table 2 Distribution of hemodialysis patients according to Characteristics of Muscle cramps (n=120)**

DAY	TIME DURATION	LEVEL OF MUSCLE CRAMPS	Frequency	%
Day1	2 hrs	Moderate	95	79.17
		Severe	25	20.83
	3 hrs	Moderate	97	80.83
		Severe	23	19.17
	4 hrs	Mild	3	2.5
		Moderate	102	85
Day2	2 hrs	Severe	15	12.5
		Moderate	106	88.33
	3 hrs	Severe	14	11.67
		Mild	11	9.17
	4 hrs	Moderate	103	85.83
		Severe	6	5
Day3	2 hrs	Mild	23	19.17
		Moderate	97	80.83
	3 hrs	Mild	15	12.5
		Moderate	105	87.5
	4 hrs	Mild	29	24.17
		Moderate	83	69.17
5 hrs	Severe	8	6.66	
	Mild	24	20	
6 hrs	Moderate	46	38.33	
	Severe	8	6.67	

Table 2 shows the characteristics of muscle cramps

- On day one in 2 hours 79.17% participants had moderate cramps, 80.83% had moderate cramps in 3 hours and 85% had moderate pain in 4 hours.
- On day two also maximum of participants (88.33% in 2 hours, 85.83% in 3<sup>rd</sup> hours and 80.83% in 4<sup>th</sup> hours) had moderate level of muscle cramps.
- On day three 87.5% in 2 hours, 69.17% in 3 hours and 38.33% in 4 hours had moderate level of muscle cramp



**Figure 1 shows the measures taken to cope up with muscle cramps**

Fig.1 explains the measures taken to cope up with muscle cramps. Among all participants 14.17% were walking, 41.67% were using hot/cold application, 19.16% were using medications and 7.50% were using other remedies cope up with muscle cramps

#### **IV. Discussion**

The present study result shows that maximum participants (39.17%) were from the age group of 41 to 50 years. With regard to sex of the patients 62.5% were males. A similar study conducted at Poland<sup>3</sup> shows the age group of the maximum participants were from 60 to 64 years and with regard to the sex of the participants maximum were females which are contradict with present study.

The present study revealed that maximum of participants 80% had moderate level of muscle cramps. With regard to measures taken to cope up with muscle cramps 14.17% were walking, 41.67% were using hot/cold application, 19.16% were using medications and 7.50% were using other remedies cope up with muscle cramps

#### **V. Conclusion**

Patients undergoing hemodialysis will have moderate level of muscle cramps. Intensity of cramps will decrease

#### **References**

- [1]. <https://www.nejm.org/doi/full/10.1056/NEJMe1904740>
- [2]. Malekmakan L. et.al Hindawi Publishing Corporation ISRN Nephrology Volume 2013, Article ID 427230, 6 pages <http://dx.doi.org/10.5402/2013/427230>
- [3]. Dabrowska-Bender et al. Patient Preference and Adherence 2018:12 577–583 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5916456/pdf/ppa-12-577.pdf>

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