ABSTRACT

INTRODUCTION

The burden of chronic kidney diseases is increasing in alarming proportion all over the world. Kidneys are probably the only vital organ which can be realistically replaced by artificial means. Maintenance dialysis is a well-recognized modality of treating patients having end stage renal disease. According to national kidney foundation 10% of the population worldwide is affected by chronic kidney disease (CKD), and millions die each year because they do not have access to affordable treatment. Yearly incidence of ESRD in India is approximately 150–200 (pmp) and DM is an important cause of CKD in approximately 30–40% of the patient.

During the clinical experience of the investigator in dialysis unit of a tertiary care hospital, observed that many of patients experiencing problems such as muscle cramps, fatigue, hypotension, poor sleep quality, joint pain, anxiety, depression, difficulty to attend social functions. Fatigue has been identified as a distressing and disabling symptom that interferes their ability to enjoy life and to take care of themselves. Poor sleep quality is a very common problem in dialysis patients. Hemodialysis patients are susceptible to muscle cramps. These are often very painful, disruptive to dialysis management. Since cramps are a common intradialytic event, the discomfort leads to premature termination of the treatment, noncompliance with the prescription. Stretching exercises may be the best measure to reduce or prevent cramps.

Therefore, the aim of this study is to implement an exercise intervention during dialysis and determine its effect on clinical outcome such as urea reduction ratio, fatigue severity, sleep quality and muscle cramps severity among patients undergoing maintenance hemodialysis.

TOOLS AND TECHNIQUE

The technique used for the data collection were interview and self-reporting.

- Tool I: Semi structured interview schedule to assess socio personal data and clinical data of patients undergoing maintenance hemodialysis
- Tool II: It consists of 4 sections

RESULT

Nearly half (44%) of patients participated in the study were belonged to the age group of 41-50 years with a mean age of 47.5 ± 7.15. Among 30 patients 60% were females. Majority (84%) of patients had school education and 83.3% were unemployed. 80% of patients were belonged to BPL category, and 63.3% of patients had RSBY and this plus insurance coverage. Among the 30 patients 53% of patients had been identified as a distressing and disabling symptom that interferes their ability to enjoy life and to take care of themselves. Poor sleep quality is a very common problem in dialysis patients. Hemodialysis patients are susceptible to muscle cramps. These are often very painful, disruptive to dialysis management. Since cramps are a common intradialytic event, the discomfort leads to premature termination of the treatment, noncompliance with the prescription. Stretching exercises may be the best measure to reduce or prevent cramps.

Therefore, the aim of this study is to implement an exercise intervention during dialysis and determine its effect on clinical outcome such as urea reduction ratio, fatigue severity, sleep quality and muscle cramps severity among patients undergoing maintenance hemodialysis.

- Tool II A: Urea reduction ratio sheet
- Tool II B: Pittsburgh Sleep Quality Index
- Tool II C: Fatigue severity rating scale

Nephrology

KEY WORDS: Intradialytic exercises; Clinical outcome; maintenance hemodialysis; Pittsburgh sleep quality index; urea reduction ratio.
hypertension as preexisting comorbidity, 7% of patients had diabetes and 23% of patients had hypertension and diabetes. Results shows that after intradialytic exercises urea reduction ratio was improved significantly from 64.27 ± 9.10 to 68.47 ±7.33(Table-1). Pittsburgh sleep quality index score decreased significantly from 10.46 ± 4.17 to 8.43 ± 4.67(Table-2), fatigue severity score decreased significantly from 43.03 ± 15.14 to 28.93 ± 16.56 and muscle cramp severity score significantly decreased from 2.13 ± 1.33 to 1.77 ± 1.35 (Table-3). Intradialytic exercises were found to be effective in improving clinical outcome of patients undergoing maintenance hemodialysis. No statistically significant association was found between clinical outcome of dialysis and selected socio personal and clinical variables.

**Table: 1** Mean, SD and t value of Urea reduction ratio among patients undergoing MHD before and after intradialytic exercises

<table>
<thead>
<tr>
<th>Urea reduction ratio</th>
<th>Mean SD</th>
<th>Mean difference df</th>
<th>t value df</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before intradialytic exercises</td>
<td>64.27 ± 9.10</td>
<td>4.2</td>
<td>29</td>
<td>2.63 0.014</td>
</tr>
<tr>
<td>After Intradialytic exercise</td>
<td>68.47 ± 7.33</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*0.05 level of significance

**Table: 2** Mean, mean difference, SD and t value of Pittsburgh sleep quality index before and after intradialytic exercises among patients undergoing MHD

<table>
<thead>
<tr>
<th>Sleep quality index</th>
<th>Mean SD</th>
<th>Mean difference df</th>
<th>t value df</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before intradialytic exercises</td>
<td>10.4 ± 4.7</td>
<td>1.96</td>
<td>29</td>
<td>2.2 0.036</td>
</tr>
<tr>
<td>After intradialytic exercises</td>
<td>8.43 ± 4.6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*0.05 level of significance

CONCLUSIONS
Intradialytic exercises were very effective to improve the clinical outcome among patients undergoing maintenance hemodialysis. The nurses are playing important role as health advisors and change agents, they can encourage the patients to practice these exercises during dialysis session to improve the adequacy of dialysis which in turn leads to better clinical outcome. Much emphasis has to be given in nursing curriculum regarding non-pharmacological measures and their effective use in nursing field. Staff and students should be provided with proper guidance in the usage of intradialytic exercises and should be made aware about the benefits and guidelines for the same.

**RECOMMENDATIONS**
Keeping in view of the findings of present study, a similar study can be conducted in a larger sample by using random sampling, similar study can be done with multiple time series design and a comparative study can be done to find out the difference between active and passive intradialytic exercises among patients undergoing maintenance hemodialysis.

**ACKNOWLEDGEMENT**
The authors would like to thank all those who helped to complete this research.

**ETHICAL ISSUES**
Individual consent was taken from all participants during the study.

**FINANCIAL SUPPORT**
No financial support received for this study.

**REFERENCES:**