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*Research Article*

# To study knowledge and awareness about intradialytic exercises in hemodialysis patients.

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**Abstract**

**Background –** Chronic kidney disease, which is linked to very high rates of morbidity, mortality, and excessive healthcare costs, is becoming a global public health concern. Chronic kidney disease (CKD), which is linked to very high rates of morbidity, mortality, and excessive spending on healthcare, is becoming a global public health concern**.** Hemodialysis (HD) is the commonest form of kidney replacement therapy in the world accounting for approximately 69% of all kidney replacement therapy and 89% of all dialysis. Hemodialysis (HD) patients are more inactive, leading to poor functional capacity and quality of life; this may be reversed with intradialytic exercise training. Aerobic and resistance exercises are beneficial not only in improving physical functioning, including maximal oxygen uptake and muscle strength but also in improving anthropometrics, nutritional status, hematological indexes, inflammatory cytokines, depression and health related quality of life. This study aimed to investigate awareness about intradialytic exercises in hemodialysis patients.

**Method-**The total no of participants participated in study was sixty eight . A self-made questionnaire was circulated among hemodialysis patients to obtain data. The questionnaire was based on awareness of intradialytic exercises in hemodialysis patients. The data collected and further analysed with the help of appropriate statistical methods.

**Results-**According to the study, among 68 participants only 17.81 people are aware about intradialytic exercises during dialysis. 82.18 people are unaware about intradialytic exercises during hemodialysis.

**Conclusion –**Current study about Intradialytic exercises among dialysis patients concluded that there is very less awareness and knowledge about Intradialytic exercises in hemodialysis patients. There is more need to aware the patients about Intradialytic exercises and its importance.

**Keywords-** Intradialytic exercises, Hemodialysis patients, Awareness, knowledge

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## INTRODUCTION –

Even in emerging nations, chronic kidney diseases are now a leading source of morbidity and mortality worldwide. Accurate assessment of the prevalence of chronic kidney disease (CKD) in India is impossible. About 800 people per million (pmp) have chronic kidney disease (CKD), while 150–200 people per million have end-stage renal disease (ESRD). The global burden of Chronic kidney disease is rising rapidly. Diabetic nephropathy is the most common cause of chronic kidney disease (CKD) in population-based research. There are about 3,500 transplants performed each year, with about 700 cadaver donors to date. Consequently, renal replacement treatment is received by roughly 18,000–20,000 patients (10% of new instances of ESRD) in India. Nevertheless, the diagnosis of renal failure was made only on the basis of serum creatinine (>1.8 mg/dl, the laboratory's upper limit of normal), which is probably going to underestimate the severity of CKD. Seventy percent of the patients were in stage CKD 4-5 categories. [1].

If kidney replacement therapy (KRT) is not started, life expectancy is drastically decreased as chronic kidney disease (CKD) advances from its early stages to renal failure, morbidity, mortality, and health-care expenses grow quickly. According to estimates from 2017, KRT was used to treat 3.9 million individuals with renal failure worldwide. Over 69% of all KRT and 89% of all dialysis sessions are hemodialysis (HD), the most common kind of KRT in the globe. Despite high overall rates of morbidity and mortality, reported results for people treated with HD vary similarly around the globe. Cardiovascular disease, the leading cause of morbidity and a

major contributor to patient mortality, affects almost two-thirds of hemodialysis patients and is responsible for almost 50% of deaths. Hemodialysis (HD) patients have a much higher death rate than members of the general population, and the mortality rate from treated renal failure is higher than that of many cancers. A low quality of life, a high symptom burden, and financial difficulty are some issues that hemodialysis patients encounter. [2]

Hemodialysis is a life-saving procedure used to replace kidney function in individuals with end-stage renal disease (ESRD), particularly excretion function. Hemodialysis is used to eliminate extra bodily fluid volume and nitrogenous chemicals from the blood. Hemodialysis patients are becoming more numerous, thus more care is required to anticipate potential issues. [3]

A growing amount of research demonstrates the beneficial impact that exercise has on the health of individuals with chronic kidney disease (CKD), including improved survival and potentially even a prolonged loss in kidney function. There is strong evidence that exercise training enhances physical function across all demographics for all age groups and stages of chronic kidney disease (CKD), as evaluated by aerobic capacity, muscle endurance strength, and balance. A large percentage of people stick to fitness regimens that are carefully planned and sufficiently supervised over the long run. Generally speaking, patients have a need to enhance their physical function and health and show interest in exercise instruction. A rising number of nephrologists believe that exercise training and physical activity are good for people with chronic kidney disease (CKD). Physical function deteriorates with declining glomerular filtration rate [4]

For those suffering from end-stage renal disease (ESRD), hemodialysis is an essential treatment option. Patients may experience a high-quality of life with appropriate hemodialysis; nonetheless, problems could occur during sessions and range from mild to fatal.[5]

Intradialytic complications that were frequently observed included hypotension, which occurred in 1296 sessions (30.4%), nausea and vomiting, which occurred in 1125 sessions (26.4%), fever and chills, which occurred in 818 sessions (19.2%), headache, which occurred in 665 sessions (15.6%), cramps, which occurred in 85 sessions (2.0%), back and chest pain, which occurred in 82 sessions (1.92%), hypoglycemia, which occurred in 77 sessions (1.8%), first-use syndrome, which occurred in 72 sessions (1.7%), and femoral hematoma, which occurred in 31 sessions (0.73%). Among the CRF group, hypotension occurred in 2230 sessions (26.1%), nausea and vomiting in 1211 sessions (14.2%), fever and chills in 1228 sessions (14.4%), back pain and chest pain in 1108 cases (13.1%), hypertension occurred in 886 sessions (10.4%), headache occurred in 886 sessions (10.4%), cramps occurred in 256 sessions (3.0%), and hematoma occurred in 55 sessions (0.64%), three sessions of intracerebral bleeding (0.03%) and three sessions of catheter tip migration (0.03%). Given that intradialytic consequences of Hemodialysis can be effectively controlled without necessitating stopping the dialysis process, more care must be given to their detection and management.[6]

Low physical activity associated with high rates of comorbidities (such as cardiovascular disease), protein energy wasting, sarcopenia, decreased physical function, decreased aerobic capacity, enforced inactivity during thrice weekly HD sessions, and post-dialysis fatigue are important factors contributing to these poor outcomes in HD patients. Thus, increasing physical activity through consistent exercise could be a key tactic for enhancing outcomes for HD patients. It has been discovered that exercise training, particularly a mix of aerobic and resistance exercises, improves several parameters in Hemodialysis patients, such as dialysis small solute clearance, state of mind, appetite, food intake, and quality of life.[7]

Interventions aimed at improving physical function and decreasing sedentary behaviour in Hemodialysis patients may reduce the risk of cardiovascular disease, enhance physical functioning, boost kidney transplant candidate fitness, decrease fatigue, and ultimately improve quality of life. Numerous exercise training therapies have the potential to enhance exercise capacity and physical function in patients with dialysis-dependent chronic kidney disease (CKD), according to evidence from multiple systematic reviews. After six months of training, the biggest benefits were observed and they were attributed to increased intensities and observation during exercise. According to the most recent systematic review on intradialytic exercise training, individual aerobic and resistance exercise programs can enhance aerobic capacity, but when both are used together, they can enhance a wider range of outcomes, such as exercise capacity, depression, and certain aspects of quality of life. A systematic and significant enhancement of cardiorespiratory fitness [volume of oxygen consumption (VO2peak)] has been reported to be induced by short-term (2–6 months) structured and supervised moderate-intensity aerobic training programs (primarily cycling), with an overall mean difference between treatment and control groups of 5.22 mL/kg/min. These gains surpass the 1 MET (3.5 mL/kg/min) clinically important criteria. So, with the objective to explore whether the physiological benefits associated with cycling might additionally translate into reported increased quality of life, we employed the body of research supporting intradialytic cycling for improved cardiorespiratory fitness. Additionally, we decided to assess important secondary outcome measures of objective physical function because prior intradialytic cycling studies have shown inconsistent increases for functional capacity indices that are objectively quantified (walking speed/distance, sit-to-stand performance).[8]

Patients undergoing dialysis might enhance their physical performance and objective measures of physical function for end-stage renal disease (ESRD) by engaging in regular aerobic and resistance training exercises. Walking is an appropriate exercise for this group of people to enhance daily physical activity and lessen reliance because it is affordable, doesn't have any negative side effects, can be done anywhere, at any time, and doesn't require any specific equipment. Even though hemodialysis patients can benefit significantly from exercise, they frequently lead sedentary lives. The fundamental concepts of self-care and self-efficacy hold significant importance for people suffering from Chronic Kidney Disease (CKD). Furthermore, people who actively engage in health-promoting activities, have greater success managing their ailment, and feel self-assured [9]

## MATERIALS AND METHOD-

The objective of this study is to find out knowledge awareness of intradialytic exercises in hemodialysis patients. The study type was observational study and conducted in Krishna Vishwa Vidyapeeth. The study was conducted in karad. Certification was taken from protocol committee. After that permission was taken from authorities and ethical

committee. Patients was selected according to inclusion and exclusion criteria. The study was conducted among patients who are undergoing hemodialysis. A self-made validated questionnaire was used for conducting this study. Informed consent was taken from them and the data was collected. A structured questionnaire was circulated among the patients for data collection.

**INCLUSION CRITERIA**

1. Males and females undergoing hemodialysis
2. Age 30-50 years both males and females.

**EXCLUSION CRITERIA**

1. People who have undergone kidney transplant
2. Person not willing to participate

**Results -**

**KNOWLEDGE AND AWARENESS ABOUT INTRADIALYTIC EXERCISES IN HEMODIALYSIS PATIENTS**

| Sr No | Questions | Number | | Percentage | |
|---|---|---|---|---|---|
| | | Yes | No | Yes | No |
| 1 | Are you currently undergoing Hemodialysis treatment for kidney disease? | 68 | 0 | 100 | 0 |
| 2 | Have you ever heard of or been informed about intradialytic exercises (exercises during dialysis)? | 33 | 35 | 48.52 | 51.47 |
| 3 | Do you know that intradialytic exercises are given during hemodialysis ? | 30 | 38 | 44.11 | 55.88 |
| 4 | Do you have knowledge about the benefits of intradialytic exercises for hemodialysis patients? | 16 | 52 | 23.52 | 76.47 |
| 5 | Have you received guidance or information from healthcare professionals regarding the importance of intradialytic exercises? | 12 | 56 | 17.64 | 82.35 |
| 6 | Do you know what kinds of exercises can be done to enhance physical well-being during a hemodialysis session? | 7 | 61 | 10.29 | 89.70 |
| 7 | Do you know that practising intradialytic exercise may reduce muscle cramps and weakness? | 2 | 66 | 2.94 | 97.05 |
| 8 | Do you know that intradialytic exercise may improve cardiovascular health during hemodialysis ? | 3 | 65 | 4.41 | 95.58 |

| | | | | | |
|---|---|---|---|---|---|
| 9 | Do you know that intradialytic exercise may improve your mental health | 3 | 65 | 4.41 | 95.58 |
| 10 | | 3 | 65 | 4.41 | 95.58 |

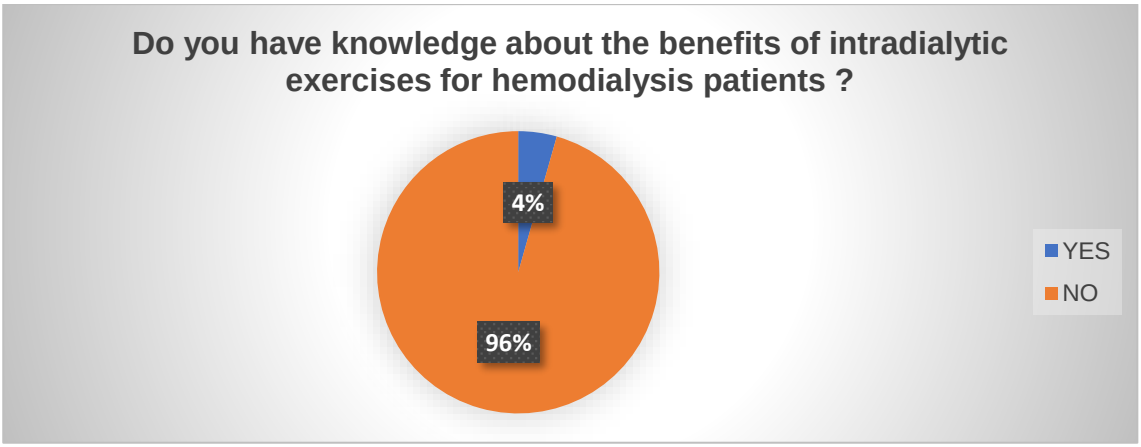


Fig 1-knowledge and benefits about intradialytic exercises

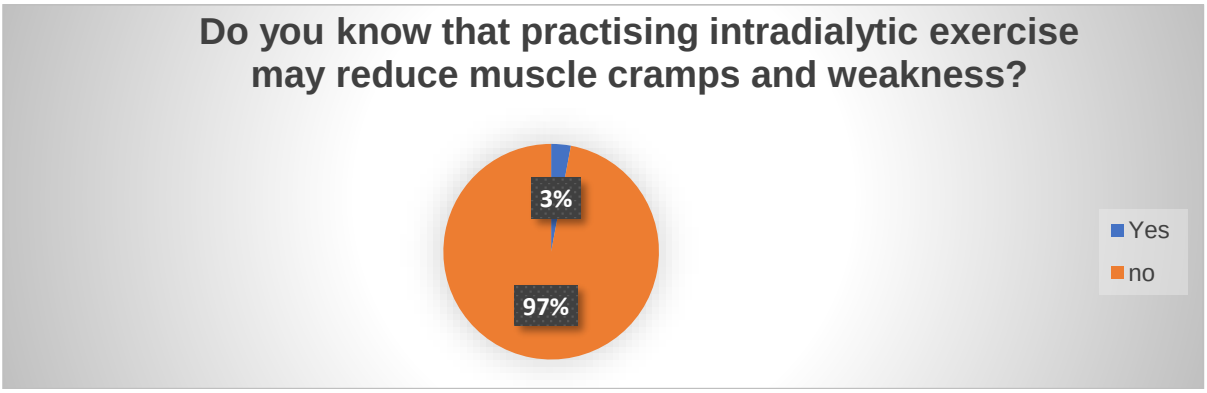


Fig 2- Awareness about Intradialytic exercises

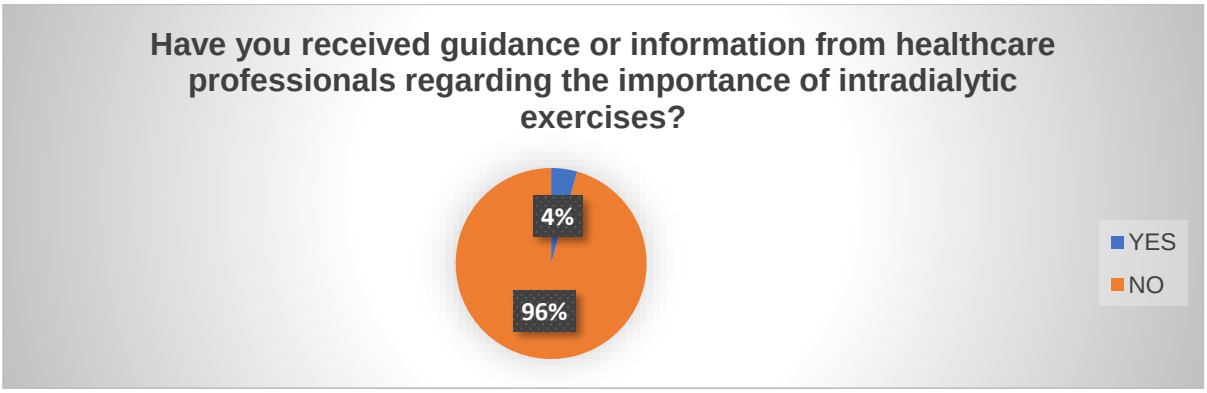


Fig 3-Knowledge about receiving guidance

*To study knowledge and awareness about intradialytic exercises in hemodialysis patients.*

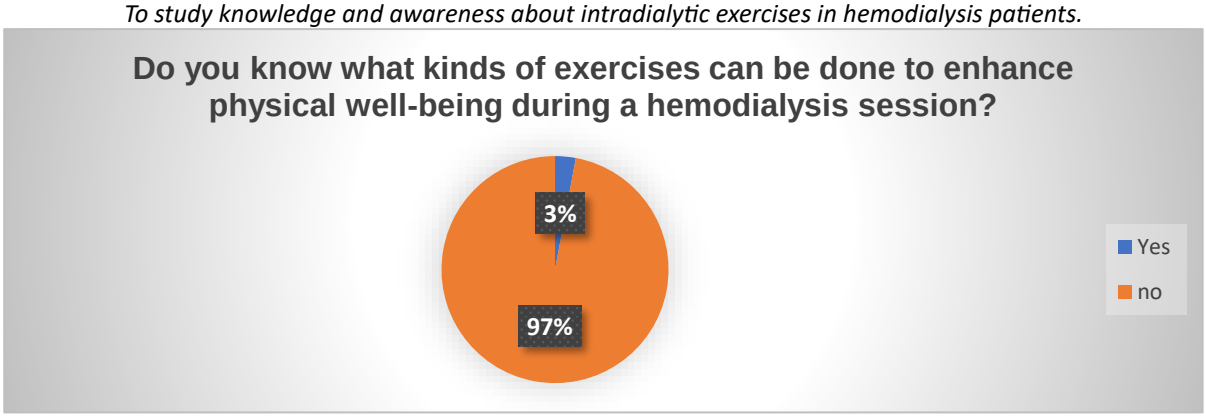


Fig 4- Knowledge about types intradialytic exercises

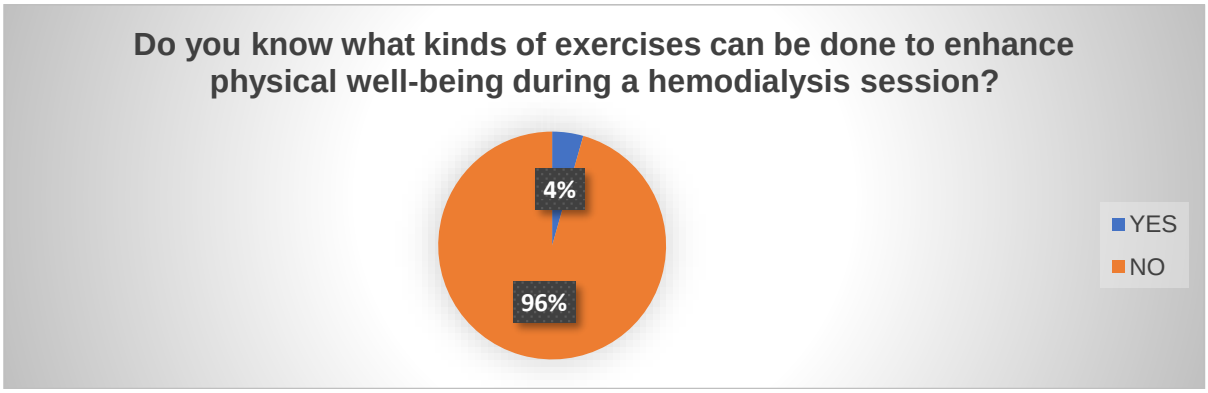


Fig 5 – Type of exercises to enhance physical function

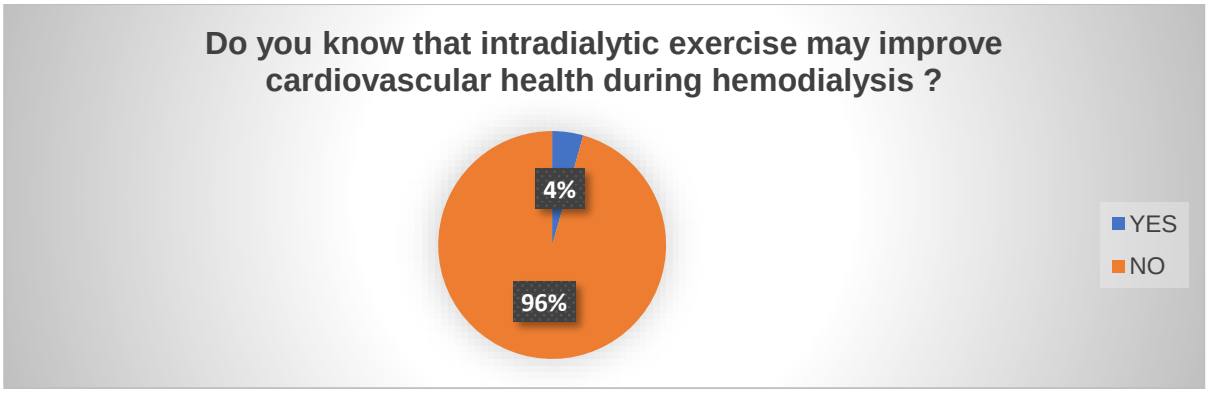


Fig 6-Impact on cardiovascular system.

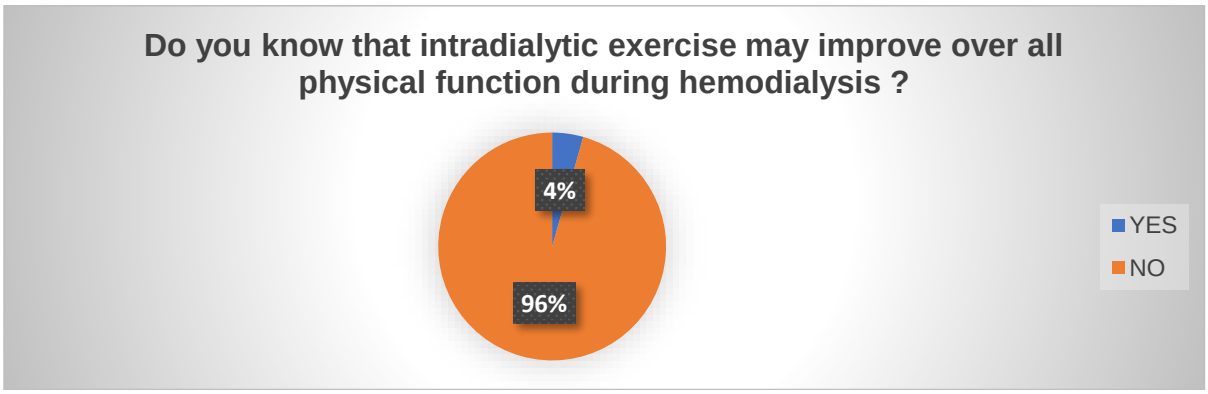


Fig 7 -Impact on physical function

The questionnaire was used to determine the awareness of participants about Intradialytic exercises in hemodialysis patients. There were 10 questions and response were obtained by asking questions. The collected data were analysed by a statistician.

From the responses 33 respondents have heard about intradialytic exercises and 35 didn't knew about intradialytic exercises.

30 respondents are aware about intradialytic exercises are given during dialysis and 38 respondents are unaware about it.

16 respondents have knowledge and benefits about intradialytic exercises and 32 respondents didn't knew about it.

12 respondents received knowledge about intradialytic exercises from health care workers 56 respondents didn't have knowledge about exercises.

7 respondents know about types of intradialytic exercises and remaining 61 are unaware about that .

2 Respondents knew about intradialytic exercises helps in reducing muscle cramps and remaining 66 were unaware about it.

3 Respondents were aware impact of intradialytic exercises on cardiovascular health and remaining 65 are unaware about it.

3 Respondents knew impact of intradialytic exercises on physical health and remaining 65 unaware about it.

3 Respondents knew about impact of intradialytic exercises on mental health and remaining 65 were unaware about it.

## DISCUSSION

The purpose of the study is to find knowledge regarding intradialytic exercises in hemodialysis patients . People undergoing dialysis treatment are unaware about intradialytic exercises and there benefits on mental, physical as well as cardiovascular health. As the disease progresses severity of the disease is also progresses. Patients get various problems after and during dialysis treatment . hence we have to create awareness between people who are undergoing hemodialysis treatment. The questionnaire was used to determine the awareness of participants about Intradialytic exercises in hemodialysis patients. There were 10 questions and response were obtained by asking questions. The collected data were analysed by a statistician. According to the study, among 68 participants only 17.81 people are aware about intradialytic exercises during dialysis. 82.18 people are unaware about intradialytic exercises during hemodialysis.

## CONCLUSION

In conclusion, our questionnaire made it possible to assess the knowledge and awareness about intradialytic exercises in patients undergoing hemodialysis, related to benefit of intradialytic exercises. Study concluded that people have very less knowledge regarding intradialytic exercises . There is more need to aware the patients about Intradialytic exercises and its importance.

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