Application of Swedish massage on the feet to reduce muscle cramps in patients with chronic kidney failure

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ABSTRACT

Chronic kidney failure is a condition of decreased kidney function. This is irreversible and requires renal replacement therapy such as hemodialysis. Patients undergoing hemodialysis often complain of muscle cramps, especially in the lower extremities. This hurts activities, relationships, and treatment tolerance. Swedish massage, one of the non-pharmacological massage therapies that can be done to treat cramps. This study aimed to apply Swedish foot massage as a nursing intervention to reduce muscle cramps in patients with Chronic Kidney Disease (CKD) in the hemodialysis unit at Royal Prima Hospital, Medan. The results showed a reduction in muscle cramps after 15–20 minutes of Swedish massage twice a week. Swedish foot massage is effective and can be applied as a non-pharmacological nursing intervention.

Keywords: Chronic Kidney Failure, Hemodialysis, Muscle Cardio, Swedish Massage

INTRODUCTION

Kidney failure is a clinical condition characterized by an irreversible decline in kidney function and requires renal replacement therapy in the form of dialysis or kidney transplantation (Crisanto et al., 2022). Chronic Kidney Disease (CKD) is also a global public health problem with increasing prevalence and incidence of kidney failure, poor prognosis, and high treatment costs (Alesandra & Cusmarih, 2024).

Based on the 2018 Basic Health Research, the prevalence of chronic kidney failure occurred in patients aged ≥15 years more with the number 38,574 patients, with a percentage of 0.82% in patients aged 65-74 years. The prevalence of patients undergoing hemodialysis was higher, at 38.71%, in DKI Jakarta, and the lowest, at 1.99%, in Southeast Sulawesi province (Ministry of Health of the Republic of Indonesia, 2018).

Hemodialysis is a kidney replacement therapy that uses special equipment to treat symptoms and signs resulting from a low glomerular filtration rate, thereby prolonging life and improving the patient's quality of life (Rahmasari & Supriyadi, 2023). Rapid elimination of salt and water due to neuromuscular hypersensitivity results in muscle cramps (Arya & Tomar, 2022). According to Sabry Attia Hassan et al., (2023) hemodialysis also often causes muscle cramps and fatigue, which negatively impact activity, relationships, and treatment tolerance.

Swedish massage is a non-pharmacological massage technique that can be used to treat cramps. The Swedish massage technique stimulates the efferent nerves to release histamine and

acetylcholine, causing reflex vasodilation of veins and arterioles and reducing sympathetic nerve activity, resulting in decreased peripheral vascular resistance, which in turn lowers blood pressure and heart rate (Savitri & Intarti, 2021). Based on research Siregar et al., (2024) Swedish foot massage therapy significantly influences the reduction in muscle cramp intensity in hemodialysis patients.

METHOD

The research method used was a descriptive method with a case study approach which aimed to evaluate the effect of Swedish massage on the feet on reducing muscle cramps in one patient with chronic kidney failure undergoing hemodialysis at Royal Prima Medan Hospital. Subjects were selected purposively with the criteria of experiencing muscle cramps in the lower extremities and being cooperative. Data were collected through interviews, observations, and nursing assessments using the SDKI, SLKI, and SIKI formats and recorded in the SOAPIE(R) format. The intervention in the form of Swedish massage was carried out 3 times according to the hemodialysis schedule for 15–20 minutes with effleurage, petrissage, friction, tapotement, and vibration techniques. Evaluation was carried out based on changes in patient complaints after the intervention.

RESULTS

After the intervention, there was a significant change in the cramps experienced by the patient. On the first, the patient reported experiencing calf cramps after hemodialysis and pain when trying to bend her leg. However, she appeared relaxed during the massage. On the second day, the patient reported that the cramps persisted, although less severely. After the final massage, the patient reported that the cramps were less severe. Therefore, it can be concluded that Swedish foot massage has a positive effect on reducing muscle cramps in patients with chronic kidney failure undergoing hemodialysis.

DISCUSSION

This case study discusses muscle cramps experienced by a patient with chronic kidney disease undergoing twice-weekly hemodialysis. The patient complained of leg cramps, particularly after completing hemodialysis. Muscle cramps are a common problem in patients with chronic kidney disease due to electrolyte imbalance, neuromuscular hypersensitivity, and

metabolite accumulation during dialysis. This condition not only causes discomfort but also disrupts the patient's activities and quality of life.

One of the non-pharmacological nursing interventions performed in this case was Swedish foot massage. Swedish massage stimulates the body's nerves to release certain chemicals that cause blood vessels to dilate and the body to relax. This helps lower blood pressure and heart rate. After three days of Swedish massage, observations showed that the patient's muscle cramps gradually decreased, eventually becoming completely absent. This demonstrates the effectiveness of Swedish foot massage in reducing muscle cramps in hemodialysis patients.

CONCLUSION

Based on the results of the nursing care provided, it can be concluded that Swedish foot massage has a positive effect in reducing muscle cramps in patients with chronic kidney disease undergoing hemodialysis. This therapy helps relax muscles, improve blood circulation, and reduce sympathetic nerve activity that triggers cramps. After three days of intervention, patients showed a gradual decrease in cramps and appeared more comfortable and experienced no mobility problems due to cramps. These results indicate that Swedish massage can be used as a safe and effective non-pharmacological intervention to improve the comfort and quality of life of patients with chronic kidney disease in the hemodialysis unit.

LIMITATIONS

This study has several limitations. It was conducted on only one patient, so the results may not be representative of all patients with chronic kidney disease undergoing hemodialysis. Furthermore, the intervention outcome was assessed solely based on direct patient complaints without the use of specific measuring tools to more objectively assess muscle cramps. Other factors that could influence the patient's condition, such as diet, daily activities, or other medical conditions, were also not thoroughly examined. Therefore, the results of this study are limited, and further research with a larger patient population and a more comprehensive approach is recommended.

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