KIAN JOURNAL
ISSN 2964-3910
PREFIX DOI: 10.56359/kian
Vol. 4 No. 2 Page Number 70-74

Effect of Warm Compress on Neck Pain Scale Reduction in CKD Patients with Hypertension

Miftakhulidayanti Hajjan[1], Dian Kartikasari[1*], Eny Kusumarini[2]
[1,2]Faculty of Health Sciences, University of Muhammadiyah Pekajangan Pekalongan, Indonesia
[2]Roemani Muhammadiyah Hospital Semarang, Indonesia

Correspondence author: Dian Kartikasari
Email: dian.kartikasari1989@gmail.com
Address: Kedung Rejo RT 04 RW 05 Proyonanggan Selatan Batang
DOI: https://doi.org/10.56359/kian.v4i2.609

ABSTRACT

Introduction: Hypertension can result in kidney failure if not treated promptly and is frequently a chronic condition. Common symptoms include headaches, dizziness, and neck pain. Applying warm compresses to the neck may help alleviate pain for patients with hypertension.
Objective: This study aims to evaluate the effectiveness of warm compresses in reducing pain levels among chronic kidney disease (CKD) patients with hypertension in Sulaiman Room 6 at Roemani Muhammadiyah Semarang Hospital.
Methods: This research is a descriptive study with a case study approach method. The subject used was 1 person with the criteria of hypertensive patients with systolic blood pressure ≥ 140 mmHg and diastolic ≥ 90 mmHg, composmentis, pain scale 4-6, and no neck injuries.
Results: The results indicated that the pain level in the neck before applying the warm compress was moderate, rated on a scale of 5. After using a warm compress for three sessions of 15 minutes each, the pain level decreased to a scale of 2, which is classified as mild.
Conclusion: The application of warm compresses on the neck effectively reduces the head pain scale of hypertensive patients.

Keywords: Hypertension, Warm Compress, Pain Scale

Introduction

The kidneys are vital organs responsible for regulating blood composition by managing fluid balance, limiting waste accumulation, and maintaining stable electrolyte levels, including potassium, sodium, and phosphate. The kidneys generate enzymes and hormones that regulate blood pressure). The kidneys filter and eliminate the body's metabolic waste (1).

Chronic kidney failure arises from a reduction in the kidneys' function, leading to an imbalance in the body and the buildup of metabolic waste, such as urea, which may lead to uremia and disrupt fluid and electrolyte equilibrium (1). Chronic kidney failure is classified

based on its underlying cause, the category of glomerular filtration rate (GFR), and the category of albuminuria (2).

In Indonesia, Riskesdas Ministry of Health of the Republic of Indonesia (2018) the rate of chronic renal failure pain is 0.38% and there are 19.3% who are having hemodialysis therapy (3). Meanwhile, in Central Java, the rate of chronic kidney failure is 0.42% (4). Kidney failure is caused by many conditions, including diabetes mellitus, hypertension, primary glomerulonephritis, chronic tubulointerstitial nephritis, hereditary kidney cyst disease, secondary glomerulonephritis or vasculitis and neoplasms (Minister of Health of the Republic of Indonesia, 2023). According to the Indonesian Renal Registry (2020) (5), the leading causes of kidney failure are hypertensive kidney disease (35%), followed by diabetic nephropathy (29%) and primary glomerulopathy (8%), with 16% classified as unknown causes. In Sulaiman Room 6 of Roemani Muhammadiyah Hospital Semarang, there were 75 hypertension patients recorded from October to December 2023.

Hypertension is chronic blood pressure where the systolic pressure is above 140 mmHg and the diastolic pressure is above 90 mmHg (6). Hypertension is one of the causes of kidney failure if it is not addressed immediately and has become a long-standing condition. Clinical signs of hypertension are headache, dizziness, bleeding from the nose, and sore neck. In addition, there are also symptoms and comorbidities such as chest pain, shortness of breath, heart palpitations, blurred vision, nocturia, hematuria, and dizziness (7).

Headaches resulting from hypertension stem from vascular damage caused by elevated blood pressure, and these headaches can manifest in all peripheral vessels. Structural alterations in small arteries and arterioles lead to the obstruction of blood flow. When these blood vessels constrict, the flow through the arteries becomes disrupted. In the affected tissues, there is a decline in O2 (oxygen) levels along with an increase in CO2 (carbon dioxide) levels; this shift prompts anaerobic metabolism, which raises lactic acid levels and amplifies capillary pain sensitivity in the brain. Consequently, headaches can cause significant discomfort for individuals with hypertension (8).

Pain management consists of two main approaches: pharmacological and non-pharmacological. Pharmacological methods involve analgesics, which effectively relieve pain but pose risks of addiction and side effects. Non-pharmacological methods include warm compresses, relaxation techniques, and distraction strategies (9).

Warm compresses provide localized heat that helps manage pain by relaxing muscles and dilating blood vessels. This process increases oxygen and nutrient delivery to brain tissue (10). The benefits of warm compresses include pain relief, improved blood flow, reduced muscle spasms, and decreased joint stiffness (11).

A preliminary study conducted by the author highlights a patient with hypertension and renal insufficiency (creatinine level of 3.12), referred to as Mrs. Ko. She has a longstanding history of hypertension, approximately spanning 10 years, and reports experiencing neck stiffness and heaviness during episodes of elevated blood pressure. Although she manages her condition with medication and rest, she is unfamiliar with the application of warm compresses as a means to alleviate her neck discomfort. The study addresses the question, "How do warm compresses applied to the neck affect pain levels in CKD patients with hypertension in Sulaiman Room 6 of Roemani Hospital?"

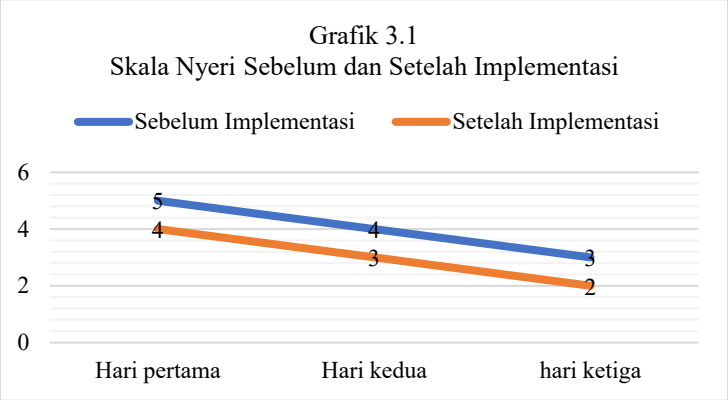
Objective

This study aims to evaluate the effectiveness of warm compresses in reducing pain levels among chronic kidney disease (CKD) patients with hypertension in Sulaiman Room 6 at Roemani Muhammadiyah Semarang Hospital.

Method

This study uses Google Scholar to find Indonesian articles, utilizing keywords such as "hypertension," "warm compress," and "pain scale." Conducted in the Sulaiman 6 room at Roemani Muhammadiyah Hospital in Semarang, it focuses on chronic kidney disease patients with hypertension experiencing neck pain. The research examines the use of warm compresses to alleviate pain.

Result



Graph 3.1 shows a decrease in the pain scale from the first to the third day. On day one, the pain score was 5 before warm compresses and decreased to 4 after 15 minutes. On day two, it started at 4 and dropped to 3 after a similar treatment. By day three, the score was 3 before warm compresses and fell to 2 after 15 minutes.

Discussion

The study by Rahmanti & Pamungkas (2022) demonstrated that two subjects experienced reduced pain after applying a warm compress on the neck for three days, with each session lasting 15 minutes. Subject I's headache intensity decreased from a scale of 6 (moderate) to a scale of 3 (mild), while Subject II's headache reduced from a scale of 5 (moderate) to a scale of 2 (mild) (12).

A study by Vitriya et al. (2022) revealed a significant reduction in pain levels for patients suffering from hypertensive headaches associated with stage V chronic kidney disease (CKD) complications. These patients received warm compresses three times consecutively. Initially, on the first day, the pain scale averaged 6, but by the third day, it decreased to 1, reflecting an average pain reduction of 1.6 points over the three days (13).

Warm compresses are an effective tool for pain management, as they provide heat through conduction, which induces vasodilation (the widening of blood vessels). This process promotes muscle relaxation and enhances circulation, increasing the delivery of oxygen and

nutrients to the tissues. In the neck, numerous blood vessels supply the brain. Hypertensive patients often experience headaches due to reduced blood flow and increased vascular spasms. By using warm compresses, it is possible to relax the muscles around the blood vessels and improve blood flow to brain tissue (11).

Conclusion

The study found that applying a warm compress to the nape of the neck significantly reduced pain levels in participants. Initially, pain was rated at 5 out of 10, indicating moderate discomfort, but after three days of treatment, it decreased to 2. This suggests that warm compresses effectively alleviate headache severity in hypertensive patients.

References

1. Siregar CT. Buku Ajar Manajemen Komplikasi Pasien Hemodialisa. Yogyakarta: Deepublish; 2020. 71 p.
2. Murton M, Goff-Leggett D, Bobrowska A, Garcia Sanchez JJ, James G, Wittbrodt E, et al. Burden of Chronic Kidney Disease by KDIGO Categories of Glomerular Filtration Rate and Albuminuria: A Systematic Review. Adv Ther. 2021;38(1):180–200.
3. Kemenkes RI. Hasil Riset Kesehatan Dasar Tahun 2018. Kementrian Kesehat RI. 2018;53(9):1689–99.
4. Riskesdas Jawa Tengah. Laporan Riskesdas 2018 Kementrian Kesehatan Jawa Tengah Republik Indonesia. Laporan Nasional Riskesdas 2018. 2018. 88–94 p.
5. Indonesian Renal Registry. Registry Ginjal Indonesa. 2020;
6. Putri LF, Kartikasari D, Faizah N. Penerapan Terapi Foot Massage Untuk Menurunkan Tekanan Darah Pada Pasien Hipertensi Di Ruang Sulaiman 4 Rs Roemani Muhammadiyah Semarang. MAHESA MALAHAYATI Heal STUDENT J. 2023;3.
7. Marni, Soares D, Ulkhasanah ME, Rahmasari I, Firdaus I. Penatalaksanaan Hipertensi [Internet]. Pekalongan: Nasya Expanding Management; 2023. Available from: https://www.google.co.id/books/edition/Penatalaksanaan_Hipertensi/bQTrEAAAQBAJ?hl=id&gbpv=1&dq=manifestasi+klinis+hipertensi&pg=PR5&printsec=frontcover
8. Salvataris S, Ayubbana S, Ludiana L. Penerapan Kompres Hangat Leher Terhadap Skala Nyeri Pada Pasien Hipertensi Di Wilayah Kerja Puskesmas Yosomulyo Kec. Metro Pusat Tahun 2021. J Cendikia Muda. 2022;2(4).
9. Oscar Valerian F, Ayubbana S, Tri Utami I, Keperawatan Dharma Wacana Metro A, Valerian FO, Ayubbana S, et al. Penerapan Pemberian Kompres Hangat Pada Leher Terhadap Penurunan Intensitas Nyeri Kepala Pada Pasien Hipertensi Di Kota Metro. J Cendikia Muda [Internet]. 2021;1(2):1–5. Available from: http://jurnal.akperdharmawacana.ac.id/index.php/JWC/article/view/208
10. Suwaryo P agina widyaswara, Melly ESU. Studi Kasus: Efektifitas Kompres Hangat Dalam Penurunan Skala Nyeri Pasien Hipertensi. J Ners Widya Husada. 2018;5(2):67–74.
11. Sari IP, Sari SA, Fitri NL. Penerapan Kompres Hangat pada Tengkuk Pasien Hipertensi dengan Masalah Keperawatan Nyeri. J Cendikia Muda [Internet]. 2021;1(1):60–6. Available from: http://jurnal.akperdharmawacana.ac.id/
12. Rahmanti A, Pamungkas KAS. Penerapan Kompres Hangat pada Leher terhadap penurunan skala nyeri kepala pada pasien hipertensi. J Fisioter dan Ilmu Kesehat

Sisthana. 2022;4(2):36–43.
13. Vitriya L, Aziz A, Khodriyati NS. Implementasi Pemberian Kompres Hangat Pada Leher Terhadap Penurunan Intensitas Nyeri Kepala Pada Pasien Hipertensi Di Rsup Dr. Sardjito Yogyakarta. 2022;629–39.