5'TH INTERNATIONAL CONFERENCE
ON HEALTH PRACTICE AND RESEARCH
"Interprofessional Collaboration in Preventing, Promoting and Curing to Improve the Quality of Life in Children with Stunting"
Journal homepage:https://ojs.stikestelogorejo.ac.id/index.php/ichpr

Application of Virgin Coconut Oil Against Pruritus in Patients Chronic Kidney Disease Stage V Causes of Polycystic Kidneys

Astri Kinanti Pangestuti[a], Danny Putri Sulistyaningrum[a]
[a]*STIKES Telogorejo, Jl. Anjasmoro Raya, Tawangmas, Semarang - 50144, Indonesia*

A R T I C L E I N F O

Article history:
Received 01 November 2023
Accepted 30 November 2023

Keywords:
chronic kidney disease stage v,
hemodialysis,
virgin coconut oil

A B S T R A C T

The kidneys can become enlarged and filled due to the expansion and enlargement of the cyst which compresses the contents of the kidney and causes loss of kidney function. If stage V CKD occurs, kidney replacement therapy is required, one of which is hemolysis. One of the complications of CKD patients with hemodialysis is impaired skin integrity. The aim of this writing is to comprehensively and systematically analyze hemodialysis nursing care for Chronic Kidney Disease (CKD) stage V patients with polycystic kidneys. This writing method uses a descriptive method by presenting case studies through a nursing care approach. Nursing diagnoses that emerged included impaired skin integrity, hypervolemia, and disturbed sleep patterns. Nursing interventions provided to address emerging diagnoses are skin integrity care, hypervolemia management, hemodialysis management, and sleep support. Evidence Based Nursing (EBN) that has been carried out is the administration of Virgin Coconut Oil (VCO) to treat pruritus in patients. The evaluation results of the four diagnoses are only the diagnosis of non-compliance which has been resolved, the other diagnoses have not been resolved. This happens because patients with Chronic Kidney Disease (CKD) stage V experience kidney function failure which will continue to occur and kidney replacement therapy will continue throughout their life.

INTRODUCTION

Chronic Kidney Disease (CKD) stage V is the terminal stage of chronic kidney disease. This disease is characterized by an irreversible decline in kidney function in maintaining metabolism and fluid and electrolyte balance with a Glomerular Filtration Rate

(GFR) of less than 15 ml/minute/1.73m2 and the need for renal replacement therapy in the form of hemodialysis (Alwi, et al, 2015). CKD stage V is one of the main health problems in the world.

Globally, around 1 in 10 of the world's population has been identified with this disease (WHO, 2018). Based on data from Pernefri (2018), as of December 31 2018, there were 198,275 patients undergoing hemodialysis in Indonesia. The incidence of CKD stage V in Central Java is 0.42% or 96,794 people (Riskesdas, 2018). The

Corresponding author: Danny Putri Sulistyanigrum
e-mail address: danny_putri@stikestelogorejo.ac.id

prevalence of CKD stage V at Panti Wilasa Citarum Hospital who underwent hemodialysis in 2023 in February was 54 people and in March there were 56 people. This proves that patients undergoing hemodialysis at Panti Wilasa Citarum Hospital experienced an increase in the following month.

Stage V CKD patients on hemodialysis can experience complaints such as fatigue, muscle weakness, dry skin, and uremic pruritus which causes an uncomfortable sensation or itching (Nakhee, 2015). The causes of pruritus are multifactorial, namely uremic conditions, skin xerosis, aging, dry skin (sweat gland atrophy), and immune dysfunction (Astuti and Husna, 2017). Nurses rarely pay attention to skin complaints experienced by patients, because nurses often focus on complaints of hypervolemia such as weight gain, edema or shortness of breath.

One alternative that can be used to overcome the problem of pruritus in CKD patients with hemodialysis is by using Virgin Coconut Oil (VCO) topically. According to research by Asri and Zuryati (2018), the use of VCO can reduce the risk factors for pruritus in chronic kidney failure patients with hemodialysis, such as dry skin becoming moist and the intensity of itching which initially often decreases. Based on this background, the author is interested in providing nursing care for stage V CKD patients with the title "Application of Virgin Coconut Oil to Pruritus in Stage V Chronic Kidney Disease Patients with Polycystic Kidney Disease".

METHODS

This case study uses a descriptive method. The participant was 1 patient with end-stage renal disease who routinely underwent hemodialysis twice a week. Data collection is based on interviews, observations, physical examinations and documentation studies which are outlined in a nursing care format.

RESULT AND DISCUSSION

Assessment

The assessment was carried out on April 20 2023 at 07.00 WIB both automatically and allo anamnese. The author provided nursing care for 6 days in the hemodialysis unit at Panti Wilasa Hospital, Citarum, Semarang. Patient Mr. A is 32 years old with a medical diagnosis of CKD Stage V with a history of polycystic kidney disease. Based on 2018 Indonesian Renal Registry (IRR) data, men make up the majority of CKD patients at 57% and women at 43%. Most CKD patients undergoing hemodialysis are men, because the male urinary tract is longer, which allows for higher obstruction to urine output from the bladder. One of the obstacles that occurs is narrowing of the canal (stricture) or blockage of the canal by stones (Anita, 2020). Apart from that, men tend to have negative lifestyles such as smoking or consuming alcohol which can trigger various diseases.

Older ages have a greater risk of CKD than younger ages. The kidneys cannot regenerate new nephrons, so that when kidney damage occurs or the aging process occurs, the number of nephrons decreases (Nasution, Syarif, and Musyabiq, 2020). The results of the Baltimore Longitudinal Study of Aging (BLSA) showed that creatinine clearance decreased by an average of 0.75 ml/min/year in respondents without kidney disease or other comorbidities over time with increasing age, so that after the age of 30 years , the filtration rate will decrease by 1 ml/min/1.73m^2.

Creatinine results in Mr. A is 20.70 mg/dL. Ureum and

Corresponding author: Danny Putri Sulistyanigrum
e-mail address: danny_putri@stikestelogorejo.ac.id

creatinine are chemical compounds that indicate normal kidney function. Therefore, the urea creatinine test is always used to assess kidney function in patients who are suspected of having kidney problems. If it is known that the urea creatinine in the urine has decreased, this will result in decreased glomerular filtration rate (kidney filtering function). The decrease in glomerular filtration rate causes urea creatinine to increase in the blood (Indrasari & Anita, 2015).

The results of other studies showed that blood pressure was 151/84 mmHg, dry and blackish skin, skin turgor inelastic, pruritus around the AV shunt, anemia with Hb 8.1 g/dL (Low), feeling weak, and decreased urine output to 100cc/24 hours.

Increased blood pressure is caused by increased salt retention in the extracellular volume. This condition causes peripheral tissue perfusion to increase, stimulates vasoconstriction, and increases peripheral vascular resistance (Nuari, 2017). Hypertension that occurs continuously can cause blood flow to the glomerulus to decrease and activate the renin-angiotensin-aldosterone system, thereby triggering a further increase in blood pressure.

Anemia in chronic kidney disease is generally caused by a decrease in erythropoietin production in the kidneys. Erythropoietin functions as a hormone for red blood cell maturation. Another mechanism of anemia is reduced absorption of iron and folic acid from digestion resulting in iron and folic acid deficiency. Integumentary disorders occur as a result of uremic syndrome. Uremic syndrome is caused by the accumulation of urea in the blood. This accumulation is caused by a reduced ability of the kidneys to excrete urea so that urea is reabsorbed into the bloodstream and accumulates in the blood (Hasetidyatami and Wikananda, 2019).

The results of the previous post-hemodialysis weight assessment on Mr. A is 60 kg and the Intradialytic Weigh Gain (IDWG) calculation shows a value of 5% > normal value (<3%) with an increase in body weight of 3 kg (above the body's tolerance of 1 – 1.5 kg) means that the patient is experiencing excess fluid intake. According to the Arbor Research Collaborative (2013), interdialytic weight gain is grouped into three, namely mild (< 2 %), moderate (2 – 5 %), and heavy (> 5 %). In this case, according to Bayhakki & Hasneli (2017), the ability of hemodialysis patients to maintain normal IDWG is influenced by patient compliance.

Assessment of Mr. A said that during his illness he had difficulty falling asleep. He can only sleep soundly for 5 hours at night from 03.00 – 08.00 and doesn't take a nap, so he feels tired easily and lacks sleep. Research conducted by Damayanti & Anita (2021) shows that the majority of chronic kidney failure patients who undergo routine hemodialysis therapy for more than three months have poor sleep quality. This is due to increased levels of inflammatory cytokines which cause changes in sleep quality and amount of sleep, caused by several factors, namely physiological factors, physical disease factors and environmental factors.

Etiology of CKD Stage V in Mr. A is caused by polycystic kidneys. Polycystic kidney disease (PKD) is characterized by multiple, bilateral and expanding cysts that gradually disrupt and destroy the normal kidney parenchyma due to pressure. The kidneys may become enlarged (sometimes the size of a football shoe) and filled with clusters of cysts that resemble grapes. The expansion and enlargement of the cyst compresses the

Corresponding author: Danny Putri Sulistyanigrum
e-mail address: danny_putri@stikestelogorejo.ac.id

contents of the kidney, causing loss of kidney function and even kidney failure (Zahra, Setyawati, and Sujendra, 2019).

Physical examination of the heart revealed that the ictus cordis border was located at the 6th IC parallel to the left anterior axilla (abnormal), meaning that there was dilation of the heart to the left. This is because the heart muscle pumps blood with greater effort than normal. Over time, this excessive workload will cause the heart muscle to thicken, resulting in the heart becoming larger in size (Smeltzer, et al, 2014).

On physical examination of the lungs it was found that there were additional breath sounds, crackles and on examination of the thorax it was found that there was pulmonary edema. Excess fluid in the body can cause two manifestations, namely increased blood volume and edema. The hydrostatic pressure increases very sharply so that it presses a certain amount of fluid up to the pulmonary capillary membrane. As a result, pulmonary edema occurs with manifestations in the form of accumulation of sputum, dyspnea, coughing, and wet rhonchi sounds (Mubarak, 2015).

Nursing Diagnosis, Intervention, Implementation and Evaluation

a. Impaired skin integrity is related to changes in circulation

   Skin integrity disorders are damage to the skin (dermis and/or epidermis) (Tim Pokja SDKI PPNI DPP, 2017). Factors related to impaired skin integrity are changes in circulation, because this corresponds to the condition of patients who have CKD Stage V and experience dry and blackish skin, inelastic skin turgor, pruritus around the AV shunt, in addition there is an increase in creatinine of 20.70 mg /dL.

Determining the diagnosis of impaired skin integrity is because waste from the body that should be excreted through urine but is reabsorbed by the skin causes pruritus, changes in skin color, uremic frost, and dry skin. This can cause disruption to skin integrity. If it is not treated immediately, it will cause irritation to the point where the wound becomes infected due to scratching the itchy skin (Chorininda, 2020).

To overcome this problem, the author determined a goal, namely that after nursing intervention, it is hoped that skin integrity will increase. The nursing intervention that has been prepared is skin integrity care.

The nursing action that has been given to patients is to recommend using products made from Virgin Coconut Oil (VCO) oil on the skin. Giving VCO to Mr. A is done twice a day after bathing in the morning and bathing in the evening for seven days. The results showed a decrease in the intensity of itching felt on the patient's skin. Based on research conducted by Asri and Zuryati (2018), there is an effect of giving VCO therapy applied to the skin thinly and evenly for seven days with a frequency of twice a day after bathing in the morning and evening.

The final evaluation can be concluded that the patient's skin integrity problem has not been resolved, therefore the nurse continues the intervention, namely using products made from petroleum or oil on dry skin and recommending using coconut oil or VCO.

Corresponding author: Danny Putri Sulistyanigrum
e-mail address: danny_putri@stikestelogorejo.ac.id

b. Hypervolemia is associated with impaired regulatory mechanisms

Hypervolemia is an increase in intravascular, interstitial and/or intracellular fluid which is mostly caused by disruption of regulatory mechanisms in the body (Tim Pokja SDKI DPP PPNI, 2017). Factors related to hypervolemia are disturbances in regulatory mechanisms, because this is in accordance with the condition of patients who have CKD Stage V disease and experience excess fluid volume with fluid balance monitoring results of +155 cc/24 hours.

The diagnosis of hypervolemia is determined because a decrease in kidney function causes disturbances in the excretion of waste products (waste from the body) so that they remain trapped in the body. These waste products are urea and creatinine, which in the long term can cause intoxication by urea in high concentrations, which is called uremia syndrome. High levels of creatinine also have an impact on the glomerular filtration rate (GFR) which can cause oliguria, which is a condition where urine production is <400 mL/24 hours and even anuria, which is a condition where the kidneys are unable to produce urine (Smeltzer & Bare, 2015).

To overcome this problem, the author determined a goal, namely that after carrying out nursing intervention, it is hoped that fluid balance will increase. The main nursing intervention that has been prepared is management of hypervolemia. The supporting intervention is hemodialysis management.

Nursing actions that have been given to patients include checking for signs and symptoms of hypervolemia, monitoring hemodynamic status, carrying out hemodialysis procedures, teaching HD access infection prevention, teaching how to measure and record fluid intake and fluid output, teaching how to limit fluids (gargling using mint-flavored mouthwash).

The final evaluation can be concluded that the patient's hypervolemia problem has not been resolved. Therefore, the intervention is continued by the nurse, namely checking for signs of hypervolemia and weighing, carrying out hemodialysis procedures using aseptic principles, adjusting filtration according to the need to withdraw excess fluid.

c. Sleep pattern disturbances are related to environmental obstacles

Sleep pattern disorders are disturbances in the quality and quantity of sleep due to external factors (Tim Pokja SDKI DPP PPNI, 2017). Factors related to disturbed sleep patterns are environmental barriers, because according to the patient's condition during illness they have difficulty starting to sleep because they feel that their sleeping hours have followed their usual sleeping hours and their sleeping hours are influenced by work factors as well.

The diagnosis of disturbed sleep patterns was determined because chronic kidney failure patients who underwent routine hemodialysis therapy for more than three months mostly had poor sleep quality caused by several factors, one of these factors was increased levels of inflammatory cytokines which caused changes in sleep quality

Corresponding author: Danny Putri Sulistyanigrum
e-mail address: danny_putri@stikestelogorejo.ac.id

and amount of sleep time (Damayanti and Anita, 2021).

To overcome this problem, the author determines a goal, namely that after this is done, it is hoped that sleep patterns will improve. The main nursing intervention that has been prepared is sleep support.

Procedures to increase comfort include adjusting the Fowler position by raising the head and chest to a height of 45 - 900 to increase maximum inhalation, thereby allowing the lungs to expand optimally. Modify the environment by controlling lighting and noise. Educational measures are provided by teaching patients to carry out autogenic relaxation, according to research by Wulandari, Ibrahim, and Fatimah (2018) proves that autogenic relaxation has a positive influence on the sleep quality of hemodialysis patients. This is indicated by a significant and statistically significant decrease in the value of the PSQI instrument after treatment (p value = 0.000). In general, autogenic relaxation will show positive results if done regularly. Changes that occur during relaxation and after relaxation affect the work of the autonomic nervous system. This relaxation causes an emotional response and a calming effect, so that physiologically the dominant sympathetic nervous system changes to dominant parasympathetic. The sensation or feeling of calm, lightness and warmth that spreads throughout the body is an effect that can be felt from autogenic relaxation (Ismarina, Herliawati, & Muharyani, 2015).

The final evaluation can be concluded that the problem of the patient's sleep pattern disturbance has not been resolved, therefore the nurse continues the intervention, namely modifying the environment, carrying out procedures to increase comfort, and teaching autogenic relaxation.

CONCLUSION

Evaluation of the application of the use of Virgin Coconut Oil (VCO) found that the itching sensation was reduced. In this case, it indicates that there is an influence from giving Virgin Coconut Oil (VCO) to reduce complaints of the patient's pruritus but not optimally.

ACKNOWLEDGEMENT (if any)

There isn't any.

REFERENCES

Anita, D. (2020). Penilaian Status Gizi Pasien Gagal Ginjal Kronis Melalui Biokimiawi Darah. Yogyakarta:Universitas Aisyiyah Yogyakarta.

Ariani, S. (2016). Stop Gagal Ginjal dan Gangguan Ginjal Lainnya. Yogyakarta: Istana Media.

Aspiani, R. Y. (2021). Asuhan Keperawatan pada Klien dengan Gangguan Sistem Perkemihan. Jakarta: Trans Info Media.

Asri, N. F. S. dan Zuryati, M. (2018). Pengaruh Pemberian Terapi VCO (Virgin Coconut Oil) Terhadap Pruritus pada Klien Gagal Ginjal Kronik Dengan Hemodialisis di RSIJ Cempaka Putih Tahun 2018. Jakarta: Universitas Muhammadiyah Jakarta

Cahyaningsih, N. D. (2014). Hemodialisis (Cuci Darah): Panduan Praktis Perawatan Gagal Ginjal: Yogyakarta: Mitra Cendikia Press.

Chorininda, D. (2020). Studi Literatur: Asuhan Keperawatan pada Pasien Gagal Ginjal Kronik dengan Masalah Keperawatan Kerusakan Integritas Kulit. Ponorogo: Universitas

Corresponding author: Danny Putri Sulistyanigrum
e-mail address: danny_putri@stikestelogorejo.ac.id

Muhammadiyah Ponorogo.

Dewi, A., Kristyawati, S., Purnomo. (2016). Pengaruh Minyak Kelapa Terhadap Penurunan Rasa Gatal pada Pasien Diabetes Melitus di RSUD Kota Salatiga: Jurnal Ilmu Keperawatan dan Kebidanan (JIKK).

Dwajani, S., Prabhu, M., Gurumurthy, R. & Hiremathada, S. (2018). Importance of medication adherence and factors affecting it: IP International Journal of Comprehensive and Advanced Pharmacology. 3(2): 69–77.

Emilia, I., Yunita, P. P., Dewi, N. & Melly, N. (2021). Pembuatan Virgin Coconut Oil (VCO) dengan Cara Fermentasi di Desa Gunung Megang Kecamatan Gunung Megang Muara Enim.

Endah, S. (2015). Kebutuhan Dasar Manusia. Yogyakarta: Graha Ilmu.

Ismarina, D., Herliawati., dan Muharyani, P.W. (2015). Perbandingan Perubahan Tekanan Darah Lansia Penderita Hipertensi Setelah Dilakukan Terapi Musik Klasik dan Relaksasi Autogenik di Wilayah Kerja Puskesmas Palembang: Jurnal Keperawatan Sriwijaya. 2(2).

Ipema, K. J. R., Kuipers, J., Westerhuis, R., Gaillard, C. A. J. M., Van Der Schans, C. P., Krijnen, W. P., & Franssen, C. F. M. (2016). Causes and Consequences of Interdialytic weight gain: Kidney and Blood Pressure Research.

Istanti, Y. P. (2014). Hubungan Antara Masukan Cairan Dengan Interdialytic Weight Gains (IDWG) pada Pasien Chronoc Kidney Disease di Unit Hemodialisis RS PKU Muhammadiyah Yogyakarta. Yogyakarta: Universitas Muhammadiyah Yogyakarta

National Kidney Foundation. (2016). About Chronic Kidney Disease. https://www.kidney.org/ Diakses: Jumat, 14 April 2023 pukul 20.03

Nuari, N. A. dan Widayati, D. (2017). Gangguan pada Sistem Perkemihan & Penatalaksanaan Keperawatan. Yogyakarta: VC Budi Utama.

Puwoastuti, E. dan Walyani, E. S. (2016). Anatomi Fisiologi & Biokimia Keperawatan. Yogyakarta: Pustaka Baru Press.

Corresponding author: Danny Putri Sulistyanigrum
e-mail address: danny_putri@stikestelogorejo.ac.id