

Airway Hygiene Nursing Care Is Not Effective with Drinking Warm Water Therapy

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Abstract

Pulmonary edema is a common complication in chronic and acute kidney failure which has signs and symptoms, namely shortness of breath due to hypoxia caused by a buildup of fluid in the alveoli (pulmonary edema) which can cause ineffective airway clearance. The purpose of writing this scientific work is to study and implement the nursing care process for ineffective airway clearance with warm drinking water therapy for CKD patients in the ICCU room. The research design uses case studies on two of Mr. W and Mrs. T. Nursing care is carried out using the nursing process which includes assessment, data analysis, nursing diagnosis, nursing planning, implementation and evaluation. The results of nursing care for 3 x 24 hours showed that client 1 looked quite good, not short of breath, the secret was able to come out quite a lot and was thick, the RR was 26 x/min. Meanwhile, client 2 also looks quite good, it's not tight, the secret can come out quite a lot and the RR is thick at 26 x/min. The results of the evaluation carried out, the problem of ineffective airway clearance was resolved on the third day for both participants. Implementation by recommending giving warm drinking water more frequently can help patients loosen their breathing so that secretions can come out and reduce the patient's breathing frequency.

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1. INTRODUCTION

Chronic kidney failure (CKD) is a non-communicable disease (*noncommunicable disease*) that needs to get attention because it has It is a public health problem with a high incidence rate high and has a major impact on mortality. CKD is a disease one of the diseases that is a big problem in the world because it is difficult to cure with increasing incidence, prevalence and morbidity. Chronic Kidney Failure (CKD) causes various clinical pathological conditions in the body. One of the common pathological conditions is pulmonary edema. Pulmonary edema is a common complication in chronic and acute kidney failure which has signs and symptoms, namely shortness of breath due to hypoxia caused by fluid buildup in the alveoli (pulmonary edema) which can cause ineffective airway clearance (Putri et al., 2023). Ineffective airway clearance is caused by a buildup of sputum that occurs in the airway. Efforts that can be made to treat ineffective airway clearance include drinking warm water and coughing effectively.

Chronic Kidney Failure in the world is currently increasing and becoming a serious health problem, the results of the 2021 Worldwide Weight of Infection Study, Chronic Kidney Failure ranked 27th cause of death in the world in 1990 and increased to 12th in 2020. 10 % of the world's population suffers from chronic kidney failure and millions of people die every year because they do not have access to treatment. In 2021, around 113,136 patients in the United States will experience end-stage kidney failure, the main causes of which are diabetes and hypertension, with the largest number of cases occurring in people over 70 years old. In 2021, there will be 499,800 chronic kidney failure sufferers in Indonesia (Fitri et al., 2022)

Based on the results of the 2018 national health survey, it is known that respiratory infections (Bronchitis & pneumonia) are the highest number of deaths (22.8%) and lower respiratory tract infections are one of the infections that cause the highest number of deaths in children under five (Ministry of Health of the Republic of Indonesia, 2018). In East Java province, the incidence of acute respiratory infections in children under five is 8.3% (Ministry of Health of the Republic of Indonesia, 2018).

The buildup of fluid in the alveoli of lung tissue due to decreased kidney function causes proteins that are normally excreted in urine to accumulate in the blood and can be lost in excess of production or what is commonly referred to as hypoalbuminemia (Mait et al., 2021). Hypoalbuminemia is a characteristic of chronic renal failure, reducing plasma osmotic pressure and encouraging fluid movement from pulmonary capillaries, resulting in pulmonary edema (Pradesya et al, 2016). As a result, the problem of progressive airway ineffectiveness arises which causes shortness of breath, breathing appears fast and deep or what is called breathing *kussmaul* which can threaten the patient's life (Marni et al., 2022).

The therapy used in CKD patients is pharmacological and non-pharmacological. One form of non-pharmacological therapy that nurses can implement to help relieve complaints of ineffective airway clearance includes providing warm drinking water to patients to provide a sense of comfort to patients and reduce complaints of shortness of breath experienced by patients (Fadli et al., 2022b). By drinking warm water, the particles that cause tightness and mucus in the bronchioles will be broken down, causing respiratory circulation to become smooth and encouraging the bronchioles to secrete mucus (Safitri et al., 2023).

The role of nurses is also very much needed to prevent trauma in children due to hospitalization by involving parents in every treatment action, inviting children to play during or before treatment actions are carried out, and inviting children to chat in low voices. Apart from the problem of ineffective airway clearance, the intervention that can be given is airway management by coughing effectively which aims to expel secretions, improve ventilation and increase muscle performance in breathing (Adiputra & Rahayu, 2021). Based on the description of the phenomenon above, the author is interested in taking a nursing case study with the title "Ineffective Airway Cleaning Nursing Care with warm drinking water therapy for CKD Patients in the ICCU Room".

2. RESEARCH METHOD

This research uses the nursing evaluation method, which is a process of the final result after everything has been done from data analysis, intervention, implementation. By carrying out systematic comparisons to find out whether the problem has been resolved, partially resolved or not at all. Evaluation uses the SOAP system (subjective, objective, *assessment*, and planning), using 2 participants

3. RESEARCH RESULTS AND DISCUSSION (12 Pt)

Table 1 Distribution after taking warm water drinking therapy

Date	O'clock	Participant Evaluation 1	Day/Date	O'clock	Participant Evaluation 2
01 May 2024	14.00	S: The patient's family said the patient was still short of breath and still looked weak,	03 May 2024	14.00	S: The patient's family said the patient was still short of breath and still looked weak,

		<p>THE: The client appears weak Still looks cramped Secret can't come out TD : 170/90 mmHg N : 92x/minute RR : 32x/minute S : 36,5thC, short and shallow breathing</p> <p>A: The problem has not been resolved</p> <p>P: Intervention continues: 1. Monitor vital signs 2. Gas fuel monitor 3. Monitor sputum production 4. Do chest physiotherapy 5. Teach the patient to take a deep breath 6. Encourage the family to give warm drinks 7. Collaborative administration of bronchodilators, expectorants, mucolytics if necessary</p>			<p>THE: The client appears weak Still looks cramped Secret can't come out TD : 140/90 mmHg , N : 89x/minute, RR: 30x/minute S : 36,3thC short and shallow breathing</p> <p>A: The problem has not been resolved</p> <p>P: Intervention continues: 1. Monitor vital signs 2. Gas fuel monitor 3. Monitor sputum production 4. Do chest physiotherapy 5. Teach the patient to take a deep breath 6. Encourage the family to give warm drinks 7. Collaborative administration of bronchodilators, expectorants, mucolytics if necessary</p>
07 May 2024	14.00	<p>S: The patient's family said they were still short of breath and the secretions couldn't come out</p> <p>THE: The client appears weak The tightness is still visible Secret can't come out TD : 160/90 mmHg N : 92x/minute RR: 30x/minute S : 36,5thC, short and shallow breathing</p> <p>A: The problem has not been resolved</p> <p>P: Intervention continues: 1. Monitor vital signs 2. Gas fuel monitor</p>	08 May 2024	14.00	<p>S: The patient's family said the client is still short of breath, especially at night, and a little secretion is still coming out</p> <p>THE: The client's condition is weak Still looks cramped Secretions cannot come out yet TD : 140/80 mmHg , N : 89x/minute, RR: 30x/minute S : 36,3thC short and shallow breathing</p> <p>A: The problem has not been resolved</p> <p>P: Intervention continues:</p>

		<ol style="list-style-type: none"> 3. Monitor sputum production 4. Do chest physiotherapy 5. Teach the patient to take a deep breath 6. Encourage the family to give warm drinks 7. Collaborative administration of bronchodilators, expectorants, mucolytics if necessary 			<ol style="list-style-type: none"> 1. Monitor vital signs 2. Gas fuel monitor 3. Monitor sputum production 4. Do chest physiotherapy 5. Teach the patient to take a deep breath 6. Encourage the family to give warm drinks 7. Collaborative administration of bronchodilators, expectorants, mucolytics if necessary
08 May 2024	14.00	<p>S: The patient's family said the patient was no longer congested and the secretions had come out</p> <p>THE: The client seemed pretty nice Not crowded The secret can come out quite a lot and thickly TD : 150/90 mmHg N : 88x/minute RR: 26x/minute S : 36,5thC, normal breathing</p> <p>A: Problem resolved</p> <p>P: Intervention stopped, patient goes home: Give <i>health education</i> about</p> <ul style="list-style-type: none"> - Take medication regularly - Poly control according to the schedule given 	09 May 2024	14.00	<p>S: The patient's family said the shortness of breath had reduced and the secretions had come out</p> <p>THE: The client seemed pretty nice Not crowded The secret can come out quite a lot and thickly TD : 130/90 mmHg , N : 80x/minute, RR: 24x/minute S : 36,3thC normal breathing</p> <p>A: Problem resolved</p> <p>P: Intervention stopped, patient goes home: Give <i>health education</i> about</p> <ul style="list-style-type: none"> - Take medication regularly - Poly control according to the schedule given

In table 1. Evaluation results were carried out 3x24 hours for each participant. At the evaluation stage, it is hoped that the breathing pattern will improve, the respiratory frequency will decrease, the patient will look quite well, sputum production will decrease and sputum can come out, shortness of breath will not occur. The evaluation results for both patients showed that the nursing care evaluation was carried out over 3 days. Participant 1's condition shows that the client looks quite good, not tight, the secret can come out quite a lot and thickly, the RR is 26 x/min, while participant two also experiences the same thing, namely the client looks quite good, not tight, the secret can come out quite a lot and thickly. RR becomes 26 x/min

Evaluation is an assessment by comparing changes in the patient's condition (observed results) with the goals and outcome criteria created at the planning stage. Evaluation refers to assessments, stages and improvements. In evaluation, the nurse assesses the client's reaction to the intervention that has been given and determines what the goals of the nursing plan are acceptable. Evaluation also helps nurses determine targets for the results they want to achieve based on joint decisions between the nurse and the client. Evaluation focuses on individual clients and groups of clients themselves. Ability to know the standards of nursing care, normal client responses to nursing actions (Hadinata & Abdillah, 2022). The criteria for nutritional fulfillment according to SLKI PPNI (2018) are that breathing frequency improves; a sufficient amount of sputum can be released and the patient does not feel unwell.

According to researchers, based on the results of the evaluation carried out, the problem of ineffective airway clearance was resolved on the third day for both participants. Implementation by recommending giving warm drinking water more frequently can help patients loosen their breathing so that secretions can come out and reduce the patient's breathing frequency.

4. CONCLUSION

Assessment

The results of the study found that both patients had the same complaints, namely shortness of breath even though they were not active, nausea and vomiting for participant 1 while participant two had no vomiting.

Nursing Diagnosis

The nursing problem that emerged in both clients was ineffective airway clearance which was related to increased sputum production and accumulation of secretions.

Nursing interventions

Nursing intervention carried out 3 x 24 hours in a row. With the aim of making the airway better and normal.

Implementation

The main nursing implementation carried out by researchers was encouraging families to provide warm drinking water.

Evaluation

In the evaluation carried out, the problem of ineffective airway clearance was resolved on the third day for both participants.

5. BIBLIOGRAPHY

- Adiputra, I. M. S., & Rahayu, K. M. N. (2021). Mengkonsumsi Air Hangat Sebelum Tindakan Nebulizer Meningkatkan Kelancaran Jalan Nafas Pada Pasien Asma. *Jurnal Profesi Keperawatan*, 5(1), 38–49.
- Annisa, R., Mufidah, A., Ching cing, M. T., Nurwidiyanti, E., Syokumawena, Riskawaty, H. M., Idris, B. N. A., Istianah, Firmanti, tria A., Apriza, Suprayitna, M., Ernawati, Raharjo, R., & Afrida, M. (2020). *Keperawatan Medikal Bedah* (Cetakan Pertama). Media Sains Indonesia. www.medsan.co.id
- Asmuji. (2021). *Manajemen keperawatan: konsep dan aplikasi*. Universitas Muhamadiyah Jember Press.
- Fadli, F., Sarinengsih, Y., & Tsamrotul, N. (2022a). Pengaruh Fisioterapi Dada Disertai Minum Air Hangat Terhadap Bersihan Jalan Nafas Pada Balita ISPA. *Jurnal Keperawatan*, 14(3). <http://journal.stikeskendal.ac.id/index.php/Keperawatan>
- Fadli, F., Sarinengsih, Y., & Tsamrotul, N. (2022b). Pengaruh Fisioterapi Dada Disertai Minum Air Hangat terhadap Bersihan Jalan Napas Pada Balita ISPA. *Jurnal*

- Keperawatan*, 14(3), 851–856.
<http://journal.stikeskendal.ac.id/index.php/Keperawatan>
- Fitri, Y., Darliana, D., & Amalia, R. (2022). Asuhan Keperawatan Pada Pasien R dengan Chronic Kidney Disease Stage V di RSYD dr. Zainoel Abidin Banda Aceh. *JIM FKep*, 1(2), 21–28.
- Hadinata, D., & Abdillah, A. J. (2022). *Metodologi Keperawatan* (S. Wahyuni, Ed.; Edisi 1). Widina Bhakti Persada. www.penerbitwidina.com
- Hapipah, Istianah, Kaseger, H., Kristiani, R. B., Simon, M. G., & Making, M. A. (2020). *Asuhan Keperawatan Pasien Dengan Gangguan Sistem Perkemihan Berbasis, SDKI, SLKI dan SIKI* (Edisi 1). CV. Media Sains Indonesia. www.medsan.co.id
- Kalonio, E. D., Ratulangi, J. I. L., Parwata, N. M. R., Tuegeh, J., Habibah, N., Gurning, S. H., Martawinarti, Netisa, Brata, A., Hamka, Kusumawardani, Nurul, Saptaningrum, E., Fione, V. R., Horhoruw, A., Feriadi, E., Shufyani, F., Simarmata, Y. B. C., & barung, E. N. (2024). *Bunga Rampai Farmakoterapi Sistem Perkemihan* (Cetakan I). Media Pustaka Indo. www.mediapustakaindo.com
- Kusuma, H., Suharini, Ropiyanto, C. B., Hastuti, Y. D., Hidayati, W., Sujianto, U., Widyaningsih, S., Lazuardi, N., Yuwono, I. H., Husain, Fi., & Galih, E. (2019). *Buku Panduan Mengenal Penyakit Ginjal Kronis dan Perawatannya* (Cetakan 1). Fakultas Kedokteran Universitas Diponegoro.
- Liyanage, T., Toyama, T., Hockham, C., Ninomiya, T., Perkovic, V., Woodward, M., Fukagawa, M., Matsushita, K., Praditpornsilpa, K., Hooi, L. S., Iseki, K., Lin, M. Y., Stirnadel-Farrant, H. A., Jha, V., & Jun, M. (2022). Prevalence of chronic kidney disease in Asia: A systematic review and analysis. *BMJ Global Health*, 7(1). <https://doi.org/10.1136/bmjgh-2021-007525>
- Mailani, F. (2023). *Sistem Perkemihan, Gangguan Dan Penatalaksanaannya* (Edisi 1). Eureka Media Aksara.
- Mait, G., Nurmansyah, M., & Bidjuni, H. (2021). Gambaran Adaptasi Fisiologis Dan Psikologis Pada Pasien Gagal Ginjal Kronis Yang Menjalani Hemodialisis Di Kota Manado. *Jurnal Keperawatan*, 9(2), 1–6.
- Marni, L., Asmaria, M., Hasmita, Yessi, H., & Milatama, T. R. (2022). Penatalaksanaan Asuhan Keperawatan Pada Pasine Dengan Chronic Kidney Disease (CKD) di Ruang Marwa RS Aisyiyah Pariaman. *Jurnal Kesehatan Sainika Meditory*, 6(1), 325–330. <https://jurnal.syedzasaintika.ac.id>
- Nurarif, A. H., & Kusuma, H. (2015a). Aplikasi asuhan keperawatan berdasarkan diagnosa medis & NANDA. In *trjectoriesof sleep quality and mood in the perinatal period*. <https://doi.org/10.1016/j.cep.2009.12.006>
- Nurarif, A. H., & Kusuma, H. (2015b). *Aplikasi Asuhan Keperawatan NANDA NIC NOC* (Edisi 1). Medi Action Publishing.
- PPNI, T. P. S. D. (2017). Standar Diagnosis Keperawatan Indonesia Definisi dan Indikator Diagnostik Edisi 1. In *Dewan Pengurus Pusat PPNI*. <https://doi.org/10.1080/15022250.2015.1015765>
- Putri, S. I., Dewi, T. K., & Ludiana. (2023). Penerapan Slow Deep Breathing Terhadap Kelelahan (Fatigue) pada Pasien Gagal Ginjal Kronik di Ruang HD RSUD Jendral Ahmad Yani Metro Tahun 2022. *Jurnal Cendikia Muda*, 3(2), 291–299.
- Risnawati, Herman, A., Kurniawan, F., Shafwan, A., Harmanto, Njakatara, U. N., Armayani, Elmukhsinur, A., Andyka, Fidora, I., Halimah, & Perdana, S. (2021). *DOKUMENTASI KEPERAWATAN* (Edisi 1). CV. Eureka Media Aksara.
- Safitri, A. S. D., Safrudin, & Ernasari. (2023). Efektivitas Minum Air Hangat dan Batuk Efektif terhadap Bersihan Jalan Napas Pasien Tuberkulosis Paru. *Window of Nursing Journal*, 4(2), 173–182.

- Wahyu Kurniawan, A. (2019). *Manajemen Sistem Perkemihan Teori Dan Asuhan Keperawatan* (Edisi 1). Literasi Nusantara. www.penerbitlitnus.co.id
- Zahroh, R., & Istiroha. (2023). *Konsep Dasar dan Asuhan Keperawatan Sistem Perkemihan* (Cetakan Pertama). Sagusatal Indonesia.
- Zuliani, Malinti, E., Faridah, U., Sinaga, R. R., Malisa, N., Rahmi, U., Mandias, R., Frisca, S., Matongka, Y. H., & Suwanto, T. (2021). *Gangguan pada Sistem Perkemihan* (Edisi 1). Yayasan Kita Menulis. <https://www.researchgate.net/publication/353946767>