International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 06, 2020
ISSN: 1475-7192

Giving of Extra Virgin Olive Oil for Hemodialysis Patients Reduce Uremic Pruritus

[1]Ni Nyoman Muni Hrisudani, [2]*Ika Yuni Widyawati, [3]Laily Hidayati

ABSTRACT--- *Pruritus was a grievance of most often occurs in patients with hemodialysis. Pruritus was defined as an itch which happened over 6 months regularly and around 6 months after the beginning of analyzed and usually more increased with his hemodialysis. A negative impact on patient was difficulty sleeping and a mood that also related with mortality increased. This requires proper treatment which is one of them by giving extra virgin olive oil (EVOO) on uremic pruritus. The aimed of this research was to find out the effect of giving extra virgin olive oil towards uremic pruritus to hemodialysis patient in the hemodialysis's room Hospital Common the Province of West Nusa Tenggara. Quasy-Experimental Design was used in this research. The sampling method was using purposive sampling method. The sample of this research were 45 hemodialysis patients. They were divided into two group 25 respondents as control group and 20 respondents as treatment group. The independent variable in this research was applying extra virgin olive oil and dependent variable was uremic pruritus. Data were taken with 5-D Itch scale and analyzed using Wilcoxon signed Rank Test and Mann Whitney Test level* $\alpha \leq 0.05$*. Result: Statistic analyze for the treatment group showed* $p=0.000$*, and control group showed* $p=0.083$*, while statistic analyze revealed* $p=0.000$*. EVOO could improve of uremic pruritus in hemodialysis patients. It was recommended to apply EVOO for uremic pruritus. The further research should focus on extra virgin olive oil usage with observation at home.*

Keywords--- *Extra Virgin Olive Oil, Uremic Pruritus, Hemodialysis Patient.*

I. INTRODUCTION

Clinical manifestation of Chronic Kidney Disease (CKD) is caused by various factors due to decreased kidney function and accumulation of protein metabolic residues called uremic toxins(Reddy, Patel, Amstrong, & Singh, 2007). One of the symptoms caused by uremic toxin is pruritus (Reddy et al., 2007). Pruritus in patients with kidney failure or who are undergoing dialysis is called uremic pruritus (Pardede, 2010). Interview results during a preliminary study in the Hemodialysis Room of the NTB Provincial General Hospital on 10 hemodialysis patients, 6 patients stated that they had uremic pruritus. The role of nurses as providers of nursing care is to advise patients to use lotions on the market, but uremic pruritus complaints in patients do not change.

Skin lotion is a cosmetic product that functions to soften and protect the skin from dryness (Purwaningsih, Ella, & Tika, 2014). Moisturizing cosmetics based on glycerol will dry out on the surface of the skin, forming a hygroscopic layer, which absorbs moisture from the air and maintains it on the surface of the skin (Purwaningsih et al., 2014). This product makes the skin appear smoother and prevents dehydration of the skin's stratum corneum, but

[1] *NTB Provincial General Hospital, Indonesia.*
[2] *Faculty of Nursing, Universitas Airlangga, Indonesia, ika-y-w@fkp.unair.ac.id.*
[3] *Faculty of Nursing, Universitas Airlangga, Indonesia*

Received: 22 Sep 2019 | Revised: 13 Oct 2019 | Accepted: 15 Jan 2020

high glycerol concentrations can irritate the skin. The use of oils such as plant oils is more easily mixed with skin fat, is more able to penetrate stratum corneum cells, and has stronger adhesion (Savitri, 2011).

The number of hemodialysis patients in NTB Provincial Hospital in 2014 was 109 people with 20 units of hemodialysis devices. The number of hemodialysis patients who experience uremic pruritus in the hemodialysis room has not been well documented. Pruritus occurs in 33% of predialysis patients and 86% of dialysis patients do not depend on gender or age (Harlim & Paulus, 2012).

The causes of uremic pruritus in CKD patients include: xerosis, reduced transepidermal elimination, hyperparathyroidism, hypercalcemia, hyperphosphatemia, increased histamine levels, increased serotonin levels (5-hydroxitryptamine (5-HT3)), increased mast cell proliferation and uremic sensory neuropathy (Roswati, 2013). Pruritus management remains one of the most challenging in clinical matters for the treatment of Chronic Kidney Failure (Reddy et al., 2007). Patients with pruritus generally need a cool atmosphere, which can be done by, using clothes that make it cool, maintaining an environment that is not too dry, using a shower or a warm shower, and avoiding alcohol or hot/spicy foods/drinks (Pardede, 2010). The patient is asked to cut nails and scratch gently to prevent skin damage (Harlim & Paulus, 2012). The most common abnormality found in uremic pruritus is skin xerosis, so giving emollients is needed (Pardede, 2010).

Emollients function as occlusions or form layers that had the ability to replace the natural hydrophilic layer, thereby reducing trans epidermal water loss (TWEL) (Okada & Koichi, 2004). Emollients can work on normal skin or with abnormalities so that it can be used for the treatment of skin disorders, anti-inflammatory, anti-antibiotic and antipruritic (Okada & Koichi, 2004; Partogi, 2008). Olive oil or olive oil besides having emollient properties, also contains vitamin C which can produce collagen which is beneficial for the skin and vitamins E and K which function as nutrients for the skin (Surtiningsih, 2005). Natural ingredients contained in olive oil such as monounsaturated fats, glycerides, moisturizers, and anti-aging, are very beneficial for skin health and beauty (Agung, 2014). Extra virgin olive oil is olive oil with the best quality because of the small production process stages, so that the antioxidant content, especially vitamin E is very high (Astawan, Tutik, & Nurayla, 2015).

II. METHODOLOGY

This research method uses a quasy experiment research method. The population in this research were patients undergoing hemodialysis in the hemodialysis room of the NTB Provincial Hospital. The sampling technique used is non-probability sampling with purposive sampling method. The sample consisted of an affordable population taken according to inclusion criteria, from 79 hemodialysis patients who experienced uremic pruritus.

Patients included in the inclusion criteria were 54 people, then divided into 2 groups: 27 treatment groups and 27 control groups. In the process of the research treatment groups become 20 respondents and control group become 25 based on drop out criteria. Treatment group was given extra virgin olive oil and control group was given usual lotion with no extra virgin olive oil on it.

The independent variable of this research is the administration of extra virgin olive oil and the dependent variable of this research is uremic pruritus. This research has been reviewed and stated as ethically approved by the Health Research Ethics Committee, Faculty of Medicine, Airlangga University, Surabaya.

Data were collected before the intervention was given extra virgin olive oil and after given the intervention of extra virgin olive oil as a post test. Posttest was carried out after the intervention was given on 2 weeks. Then the data obtained were analyzed with Wilcoxon sign rank test (comparative test of two paired samples) and Mann Whitney test (comparison of two free samples) with $p<0.05$.

III. RESULTS

Table 1 shows that in the posttest of treatment group obtained changes after being given extra virgin olive oil as many as 6 people (30%) had no pruritus, and experienced uremic pruritus as many as 14 people (70%). In the control group post test results, there were still those who experienced the most severe pruritus as many as 1 person (4%) and who experienced moderate pruritus as many as 24 people (96%).

Statistical results using the Wilcoxon signed rank test found a decrease in uremic pruritus in the treatment group after being given extra virgin olive oil with a value of p=0.000 which means there was a significant effect on giving extra virgin olive oil against uremic pruritus. Results in the control group were found that was p=0.083 which means the administration of extra virgin olive oil had no effect on the uremic pruritus of the group.

In the Mann Whitney test statistic results, the post test results obtained data p=0.000 which means that there was a very significant difference between the treatment group and the control group, so it was concluded that the administration of extra virgin olive oil affects the uremic pruritus.

Table 1: Distribution of uremic pruritus in each group and statistical result

Criteria	Treatment Group				Control Group			
	Pre test		*Post test*		*Pre test*		*Post test*	
	F	%	F	%	F	%	F	%
No uremic pruritus	0	0	6	30	0	0	0	0
Low uremic pruritus	18	90	14	70	21	84	24	96
Severe uremic pruritus	2	10	0	0	4	16	1	4
Total	20	100	20	100	25	100	25	100
Statistical Results	*Wilcoxon rank sign test* (p=0.000)				*Wilcoxon rank sign test* (p=0.083)			
	Mann Whitney Test (p=0.000)							

Based on the results of the research note that there is an influence of extra virgin olive oil on uremic pruritus in the treatment group. Respondents who were given extra virgin olive oil for 14 days said there were changes in the itching felt.

The most common abnormality found in uremic pruritus is skin xerosis, so giving emollients is very necessary. The results of Okada & Matsumoto's study showed that gels containing high water content effectively increased the itching reduction in hemodialysis patients with mild uremic pruritus (Okada & Koichi, 2004). They also recommend that patients with uremic pruritus take a bath every day to avoid irritation of the skin, avoid bathing

with warm water that can make the skin dry, and afterwards use ingredients with emollient content that is applied to the skin (Okada & Koichi, 2004).

This research is also supported by the results of other research, which is the effect of using extra virgin olive oil (EVOO) on the prevention of pressure ulcers in patients at risk based on the Braden scale (Haryati, 2014). Olive oil (olive oil) is recognized as one of the healthy vegetable oils because it contains less saturated fat, and converts lenoleic (omega-6) and linoleic acid (omega-3) recommended essential fatty acids (Haryati, 2014). The content of fatty acids contained in olive oil can maintain moisture, flexibility, and skin smoothness (Haryati, 2014).

Researchers believe that the decrease in uremic pruritus in respondents is influenced by the administration of extra virgin olive oil to the itchy body for 14 days. The control group did not experience a change in the reduction of uremic pruritus because no extra virgin olive oil intervention was given. The results of this research are consistent with the results of other research which stated that the change in the degree of diaper rash caused by the administration of olive oil given to the experimental group helps moisturize the skin and nourish the skin, and can limit germs in feces and urine direct contact with the skin (Jelita, Sri, & Ulfa, 2014). In theory olive oil (olive oil) is useful for softening the skin, maintain skin moisture and elasticity, while smoothing the process of skin regeneration (Jelita et al., 2014).

The mechanism of action of extra virgin olive oil (Olea Europae) that is with the occlusive effect that is owned prevents water loss in the stratum corneum so that trans epidermal water loss (TEWL) is reduced which results in increased skin hydration and moisturized skin (Purwaningsih et al., 2014). Moist skin is expected to reduce uremic pruritus in hemodialysis patients.

The advantage of extra virgin olive oil is its purity, it does not change physically even if it is placed in the refrigerator for days (Haryati, 2014). Extra virgin olive oil contains monounsaturated fatty acids which are higher than other types of olive oils and contain antioxidants and tocopherol (Haryati, 2014). Extra virgin olive oil also contains up to 85% oleic acid (Haryati, 2014). Sunflower seed oil and canola also contain high oleic acid but do not have healthy aroma, taste, or antioxidants (Agung, 2014).

Researchers believe that respondents who received extra virgin olive oil intervention made the skin smoother and prevented trans epidermal water loss. Respondents felt the impact of the intervention both gradually and directly. Respondents experienced a decrease in itching gradually over 14 days. This is in line with the benefits of extra virgin olive oil itself, which is emollient properties, also contains vitamin C which can produce collagen which is beneficial for the skin and vitamins E and K which function as nutrients for the skin.

IV. CONCLUSION

Patients who undergo hemodialysis with uremic pruritus, before being given extra virgin olive oil experience a poor quality of life. Hemodialysis patients who undergo uremic pruritus after being given an intervention in the form of giving extra virgin olive oil have decreased in duration, degree, direction, disability, distribution of uremic pruritus. Giving extra virgin olive oil to uremic pruritus in patients undergoing hemodialysis has decreased because it contains emollients that are occlusive in nature and contain vitamins C, E and Squalene which can nourish the skin.

REFERENCES

1. Agung, I. (2014). *Dahsyatnya Tin & Zaitun*. Surakarta: Al-Qudwah Publishing.
2. Astawan, M., Tutik, W., & Nurayla, A. N. (2015). *Fakta dan Manfaat Minyak Zaitun*. Jakarta: PT Kompas Media Nusantara.
3. Harlim, A., & Paulus, Y. (2012). Pruritus Uremik pada Penyakit Ginjal Kronik. *Majalah Kedokteran FK UKI*, *28*(2).
4. Haryati, S. (2014). *Pengaruh Penggunaan Extra Virgin Olive Oil untuk Pencegahan Luka Tekan pada Pasien Beresiko Berdasarkan Skala Braden di RSUD Cengkareng*. Universitas Esa Unggul.
5. Jelita, M., Sri, H. M. A., & Ulfa, N. (2014). Pengaruh Pemberian Minyak Zaitun (olive oil) Terhadap Derajat Ruam Popok pada Anak Diare Pengguna Diapers Usia 0-36 Bulan Di RSUD Ungaran Semarang. *Jurnal Ilmu Keperawatan Dan Kebidanan (JIKK)*.
6. Okada, K., & Koichi, M. (2004). Effect of Skin Care With an Emmolient Containing a High Water Content on Mild Uremic Pruritus. *Therapeutic Apheresis and Dialysis*, *8*(5).
7. Pardede, S. O. (2010). Pruritus Uremik. *Sari Pediatri*, *11*(5).
8. Partogi, D. (2008). *Kulit Kering*. Universitas Sumatera Utara.
9. Purwaningsih, S., Ella, S., & Tika, A. B. (2014). Formulasi Skin Lotion dengan Penambahan Keragenan dan Antioksidan Alami dari Rhizopora Mucronata Lamk. *Jurnal Akuatika*, *5*(1).
10. Reddy, S. R. K., Patel, T. V, Amstrong, A. W., & Singh, A. K. (2007). Uremic Pruritus. *Kidney International Reports*, *72*.
11. Roswati, E. (2013). Pruritus pada Pasien Hemodialisis. *CDK-203*, *40*(4).
12. Savitri, C. Y. (2011). *Perbandingan Daya Kelembaban Minyak Zaitun (Olea Europaea) dan Gliserol dalam Sediaan Krim Tangan*. Universitas Sumatera Utara.
13. Surtiningsih. (2005). *Cantik dengan Bahan Alami: Cara Mudah, Murah, dan Aman untuk Mempercantik Kulit*. Jakarta: PT Elex Media Komputindo.