

THE EFFECT OF ONION (*Allium ascalonicum* L.) COMPRES TOWARD BODY TEMPERATURE OF CHILDREN WITH HIPERTERMIA IN BOUGENVILLE ROOM DR. HARYOTO LUMAJANG HOSPITAL

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INTRODUCTION

Hyperthermia is a condition where the body temperature is higher than usual , and is a symptom of a disease[1]. If not promptly treated hyperthermia may cause an increase in respiratory rate and pulse, increased heart rate, chills, excessive sweating, increased thirst, mild to severe dehydration, and seizures[2]. Hyperthermia can occur in 1 of 2,000 cases in children aged 1 to 10 years which is ascribed to the pediatric emergency department . Increased body temperature at an ordinary child makes parents into becoming stressed and anxious[3].

Onion is a multipurpose herb that can be used to lower the body temperature[4]. Phytochemical compounds contained in the onions one of which is a flavanoid [5]. Flavonoids show more than one hundred kinds of bioactivity was shown among other antipyretic effect, analgesic and anti-inflammatory [6]. Flavonoid found in onions as much as 29%. Flavonoids in onions second highest after green tea, where onions are also often used in everyday activities within the community so it is very easy to find in the community[5]. Red onion , besides containing flavonoids, also contains organic sulfur compounds that Allylcysteine sulfoxide (Alliin) which serves destroy the formation of blood clots. This makes the smooth blood circulation so the heat from the body can be more easily distributed to the peripheral blood vessels.

Data based on the results of preliminary studies conducted in space Bougenville dr. Lumajang Haryato hospital diseases showed 10 patients treated in the room is DHF, Seizures Fever, vomiting, GEA, pneumonia, typhoid, GEDR, bronchitis, Talasemi, and Febris. DHF disease ranked first in which there are 37.3 % of the top ten most prevalent diseases are DHF or 72 out of 193 patients. Based on the description of the background above, the writer is interested in studying the effect of onion compress to temperature changes in patients with hyperthermia. The general objective of this study was to analyze the effect of onion compress therapy in patients with hyperthermia treated in Bougenville dr . Haryato Lumajang.

METHOD

Method of the research was quasy experiment with control group pretest and posttest design. The samples of this study were 20 children chosen by purposive sampling who has a sign hyperthermia. Researchers determine the number of samples taken 10 samples for the control group and 10 samples to treatment groups. The population in this study were all patients of children who are hospitalized in Space Bougenville dr. Haryato Lumajang who had signs of hyperthermia. The sample used in this study is a client who has a sign hyperthermia and met the inclusion criteria set by the researchers.

RESULT AND DISCUSSION

Body Temperature Hyperthermia Clients Before and After Onions Compress

Table 1. Data body temperature Before and After Intervention Guide Compress Shallots the treatment group in dr . Haryato LumajangKabupaten Lumajang February and March 2016(n=10)

No.	Categori	Pre intervention		Post intervention	
		Jumlah	(%)	Jumlah	(%)
1	High Hypothermia	0	0	0	0
2	Midle Hypothermi	0	0	0	0
3	Normothermia	0	0	4	40
4	Low Hyperthermia	5	50	5	50
5	Middle Hyperthermia	4	40	1	10
6	High Hyperthermia	1	10	0	0
Total		10	100	10	100

Source: Primer Data (February-March 2016)

Based on Table 1 it can be seen that the body temperature treatment groups prior to compress onion 40 % in the category of moderate hyperthermia. After compresses onion, body temperature decreased in the category of moderate hyperthermia is 1 person (10 %).

Based on Table 2. it can be seen that there is a decrease in body temperature average in the group treated by 1,09°C that of the average before being given compresses onion for 38,32°C be given compress 37,23°C after onion. The negative sign in the difference column shows that there is a decrease in the body temperature of the respondents in the treatment group.

Giving compresses onion, there are two components that work is compound allisin (allisin) and flavonoids. Allisin active substances contained in the onion has the effect bakteriostatic and bacteriocidal. Flavonoids work as inhibitors of cyclooxygenase (COX) by inhibiting prostaglandin formation process by utilizing the flavonoid substance that acts as an antipyretic. Cyclooxygenase (COX) function triggers the formation of prostaglandins. There is the effect of giving the onion to drop in body temperature in febrile children aged 1-5 years [7].

Table 2. Differences in body temperature Before and After Intervention Onions Compress in the treatment group in dr. Haryato Lumajang Lumajang February and March 2016(n=10)

Code of Responden	Boddy Temperature				
	Before	Kategori	After	Kategori	Difference (Δ)
P.1	37,6	Low Hyperthermia	36,5	Normothermia	-1,1
P.2	37,7	Low Hyperthermia	36,6	Normothermia	-1,1
P.3	37,8	Low Hyperthermia	36,8	Normothermia	-1,0
P.4	37,9	Low Hyperthermia	36,9	Normothermia	-1,0
P.5	38,0	Low Hyperthermia	37,5	Low Hyperthermia	-0,5
P.6	38,4	Middle Hiperthermia	37,7	Low Hyperthermia	-0,7
P.7	38,7	Middle Hiperthermia	37,0	Normothermia	-1,7
P.8	38,7	Middle Hiperthermia	37,5	Low Hyperthermia	-1,2
P.9	38,9	Middle Hiperthermia	37,4	Low Hyperthermia	-1,5
P.10	39,5	High Hiperthermia	38,4	Middle Hiperthermia	-1,1
Total	383,2		372,3		-10,9
Mean	38,32		37,23		-1,09

Source: Primer Data (February-March 2016)

Body Temperature Hyperthermia Clients Before and After Warm Compress

Based on Table 3. it can be seen that the body temperature in the control group pretest more than half of that 6 respondents (60%) were in the category of low hyperthermia while 4 respondents (40%) are in the category of moderate hyperthermia. At the time of post-test can be known of the drop in temperature in the category hyperthermia was initially 4 into 2 respondents are in the category of moderate hyperthermia.

Based on Table 4 it can be seen that a decline in the average body temperature in the control group of 0,65°C that of the average pretest for 38,12°C be 37,47°C after posttest. The negative sign in the column difference showed that there was a decrease in body temperature in the control group. The fever may occur due to multiple etiologies ie when the temperature set point increases, for example when the infection is a major cause of fever, when the reproduction of heat metabolic example on hyperthyroidism, when hot environments beyond

the capability of heat dissipation eg hyperpyrexia malignant due to anesthesia, space industrial work very hot and sauna, the release of heat disorders for

Tabel 3. Body temperature data on the pretest and Posttest Control Group Client Hipertermi in dr . Haryato Lumajang Lumajang February and March 2016 (n=10)

No.	Categori	Pre intervention		Post intervention	
		Jumlah	(%)	Jumlah	(%)
1	High Hiperthermia	0	0	0	0
2	Middle Hiperthermia	0	0	0	0
3	Normothermia	0	0	2	20
4	Low Hiperthermia	6	60	6	60
5	Middle Hiperthermia	4	40	2	20
6	High Hiperthermia	0	0	0	0
Total		10	100	10	100

Source: Primer Data (February-March 2016)

Table 4. Differences in body temperature on the pretest and Posttest Control Group Client Hipertermi in dr . Haryato Lumajang Lumajang February and March 2016 (n=10)

Kode Responden	Suhu Tubuh				
	Sebelum	Kategori	Setelah	Kategori	Difference (Δ)
P.1	37,6	Low Hiperthermia	37,2	Low Hiperthermia	-0,4
P.2	38,7	Middle Hiperthermia	38,1	Low Hiperthermia	-0,6
P.3	38,9	Middle Hiperthermia	38,6	Middle Hiperthermia	-0,3
P.4	38,6	Middle Hiperthermia	37,8	Low Hiperthermia	-0,8
P.5	37,9	Low Hiperthermia	36,5	Normothermia	-1,4
P.6	38,6	Middle Hiperthermia	38,5	Middle Hiperthermia	-0,1
P.7	37,8	Low Hiperthermia	37,0	Low Hiperthermia	-0,8
P.8	38,2	Low Hiperthermia	37,1	Low Hiperthermia	-1,1
P.9	37,7	Low Hiperthermia	37,0	Low Hiperthermia	-0,7
P.10	37,2	Low Hiperthermia	36,9	Normothermia	-0,3
Total	381,2		374,7		-6,5
Mean	38,12		37,47		-0,65

Source: Primer Data (February-March 2016)

Warm compresses effect on the body where there are temperature changes mean body temperature of the patient before action is taken warm compress of 38.9°C and then after treated with warm compresses for 10 minutes of being turned by 37, 9°C [10] . Results were consistent with studies conducted at this time that the administration of warm compresses can affect the decrease in body temperature . The results of another study that also conform to this study the research done, applying warm compresses effectively to decrease body temperature in febrile children aged 1-3 years[11].

example ectodermal dysplasia, as well as a combination of several factors. One management to reduce fever is using a compress using warm water [8].

Apply warm water temperature affects the body by widening the blood vessels (vasodilation), provide additional nutrients and oxygen to seldan dispose of garbage body, increasing blood supply to areas of the body, can accelerate healing and soothing. In addition, the provision of warm compresses will give a signal to the hypothalamus through the spinal cord[9]. When the receptors are sensitive to heat dihipotalamus stimulated effector systems emit signals start sweating and peripheral vasodilation. Changes in the size of blood vessels diaturoleh vasomotor center in the medulla oblongata in the brain stem, under the influence of hypothalamic anterior portion, causing vasodilatation. This causes vasodilation occurrence disposal or energy or heat loss through increased skin (sweating) , is expected to decrease body temperature to reach normal circumstances back.

Temperature differences in the treatment group and control group

Table 5. Body Temperature Difference Clients Hipertermi the treatment group and the control group in patients Hipertermidi dr. Haryato Lumajang Lumajang February and March 2016(n=20)

Variabel	Mean		Mean Difference
	pre	post	
Treatment Group	38,32	37,23	-1,0900
Control Group	38,14	37,47	-0,6500

Sumber: Data Primer (Februari-Maret 2016)

Based on Table 5 it can be seen that the temperature in the treatment group had a greater drop penurunan compared with the control group,

ie a decrease 1,09°C in the treatment group while the control group 0,65°C pada decline.

Giving compresses onion, there are two components that work is compound allixin (allisin) and flavonoids. Allisin active substances contained in the onion has bakteriostatis and bacteriocidal effects [11]. Allisin is a compound derived from alliin oxidized, an antibacterial compound, but do not have antiviral activity. The compound can reduce bacterial cysteine in the body that interfere with the disulfide bonds in proteins of bacteria. Allisin shows the activity of bacteria by inhibiting the synthesis of RNA quickly and thoroughly and inhibits bacterial protein synthesis of DNA and potentially.

Allisin compound has volatility at a temperature of 20 ° C to 40 ° C. Shallots are crushed to release the enzyme alliinase that serves as a catalyst. The reaction will occur within 10-60 seconds. In order for this reaction does not quickly occur, then the onion, chopped oil can be added, as the group has properties allilil sulfide can be dissolved in oil as a non-polar solvent. Oils can function as an insulator, because the oil is able to conduct heat well [12].

Giving a warm compress on the control arm in the axillary regions have a good effect in lowering body temperature in a child with hyperthermia because the area has a large blood vessel so that the control group also decreased body temperature due to the mechanisms. From the above results can be seen compress onion has a temperature drop of more than the warm water compress. This is because the content of the onion can lower the temperature, among others flogroglusin, sikloaliin, metialiin, kaempferol, quercetin, and essential oil while on a warm compress only warm water without the addition of other substances [13].

CONCLUSION

The research and analysis of the discussion can be concluded that the effect of the onion compress to decrease body temperature in the room Bougenville dr. Haryato Lumajang is characteristic of respondents in the age distribution shows that the age of 1-3 years (60 %) more than those with 3-5 years of age (60 %), there was a drop in body temperature after onion compress in the treatment group with a mean difference: -1.09, there is a drop in body temperature after applying warm compresses to the control group with a mean difference: -0.65, there is a difference in body temperature in the treatment group and the control group after compresses onion. These results indicate that compresses onion can lower body temperature in clients with increased body temperature.

Recommendations of this study is to disseminate warm compresses therapy as an early treatment to clients with increased body temperature.

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