

USE OF RED ONION AS A FEVER REDUCE IN CHILDREN: *LITERATURE REVIEW*

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Abstract

Fever is a problem that often occurs in a child. Although fever is a normal response of the body toward an infection, unless treated properly, it can lead to serious complications. Before using drugs, fever should be overcome with simple things for example red onions. Crushed red onion then placed on the surface of the skin, can control the release of body heat. Because these plants are important for reducing fever, it is necessary to identify the scientific evidence about the effect of red onion on reducing fever in children. This study uses a literature review approach by searching for articles in the Google Scholar and Pubmed databases using keywords "Allium Ascaloricum", "Fever", "Child", and finally got 10 articles matched. Red onion contain compounds such as alliin, cycloalkane, methylation, fluroglucin, kaempferol, and essential oils that have a function to smooth the blood vessels, increase the release of heat by evaporation from the body to the environment, and it can be stated by the difference in body temperature before and after being given a red onion compress. Besides, red onion compresses, warm water compresses, and tepid water sponge compresses have different results in body temperature reduction before and after being compressed

Keywords: Children, Compound *Allium cepavar ascalonicum*, Fever, Red Onion

Introduction

Children's health problems can affect the nation's health status because children are the next generation who have the ability to continue the nation's development so that health problems solutions that occur in children need to be prioritized (Rahmawati, 2010). Fever is a condition in which the body temperature is higher than usual, although fever is the body's normal response to infection if not treated properly it will cause dehydration, deficiency of oxygen, and neurological damage to seizures (Lubis et al., 2009). Various ways can be done to reduce fever in children, one of which is the administration of antipyretic drugs, but the administration of antipyretics has side effects such as bronchospasm, erosion of blood vessels which can lead to gastrointestinal bleeding, and decreased kidney function (Cahyaningrum & Putri, 2017). Given the many side effects that occur due to the administration of antipyretics, this antipyretic should be given if simple treatment is not possible. Simple treatments that can be given to fever conditions are wearing thin clothes, drinking often, getting plenty of rest, and bathing with warm water. In addition to simple treatments, non-pharmacological treatments can also be used to reduce fever, one of which is the use of red onions. The content of organic compounds in red onion functions to destroy blood clots and lower body temperature (Lubis et al., 2009). The red onion (*Allium cepavar ascalonicum*) is a vegetable

commodity in the spice group category that functions as a food seasoning and traditional medicinal ingredient with a specific aroma.



Figure 1: Red onion

The red onion plant consists of fibrous roots, stems, leaves, flowers, fruits, and seeds, and this plant thrives in various provinces in Indonesia (Aryanta, 2019). Scrubbing red onions placed on the surface of the skin causes the veins to change size into vasodilation which causes heat loss by evaporation, resulting in a decrease in body temperature (Lubis et al., 2009).

Table 1 Content of Red Onion Active Compounds per 100 grams

Active chemical compounds in whole red onions	The active chemical compounds in chopped red onion
A-Allyl-L-Cysteine sulfoxide (SAC/Allin)	Diallyldithiosulfinate (Allisin)
Prostaglandin A-1	Thiosulfinic acid ester
Adenosine	Propantioi-S-oxide
Dephenyl-amine	Disulfide
Cycloalline	Polysulfide
Methyl-alline	Diallyl-sulfide
Dihydro-alline	Diallyl-disulfide (DDS)
Profenyl-aliin	Diallyl-trisulfide (DTS)
Aliin-profile	Sulfinyl-disulfide
Kaempferol	Ajoene
Floroglucinol	Tiofen

The active chemical compounds found in red onion have the effect of preventing, curing, and treating diseases, especially as antibacterial and antioxidant (Aryanta, 2019).

Materials and Methods

The method used in this study is a literature review by searching for articles on the Google Scholar and Pubmed databases using the keywords “Allium Ascaloricum”, “Fever”, “Child. Articles taken for review are articles that match the following keywords and criteria: full paper article, quantitative and qualitative research methods, and articles published starting in 2016. Then 10 articles were obtained which will be reviewed with details of 1 international article and 9 national articles. The first article is a study conducted by Cahyaningrum (2017), at the Kembaran Banyumas Health Center with a pre-experimental method, namely proving the difference in body temperature before and after red

onion compresses in 50 children with fever. The results showed that there was a difference in the average body temperature before and after the red onion compress. The second article is a study conducted by Faridah (2018), at the Lubuk Buaya Health Center, Padang City with an experimental method, namely analyzing the effect of giving crushed red onion to 16 toddlers who had a fever. The results showed that crushed red onion proved effective in lowering body temperature. The third article is a research conducted by Setiawandari (2021), in the Independent Practice of the Istiqomah Midwife in Surabaya using the experimental method with a total of 20 respondents who were divided into two groups, namely the group given red onion compresses as many as 10 respondents and the group given paracetamol as many as 10 respondents. The results showed that red onions are proven to be effective in lowering children's body temperature. The fourth article is a research conducted by Ibnu Rifaldi (2020), in the Work Area of the New Basirih Health Center using a pre-experimental method with a sample of 32 respondents who were divided into two groups, namely the group that was given the red onion compress intervention as many as 16 respondents and the group that was treated Tepid Water Sponge compress as many as 16 respondents. The results showed that there was a difference in effectiveness between the Tepid Water Sponge compress and the red onion compress. The fifth article is a study conducted by Harianah (2017), in Semboro Village using an experimental method with a sample of 14 children with fever who were divided into two groups, namely the group given warm water compresses as many as seven people and the group receiving red onion compresses as many as 7 people. The results showed that there was a difference in the average difference in body temperature, both those compressed with warm water and red onion compresses. The sixth article is a research conducted by Medhyana (2020), in the Pagar Ayu Polindes Working Area, Megang Sakti District, Musi Rawas Regency using an experimental method with a total of 22 respondents after immunization. The results showed that there was an effect of red onion compresses on decreasing the baby's body temperature. The seventh article is a research conducted by Riyady (2016), at the Bougenville Space Hospital dr. Haryato Lumajang used an experimental method with a sample of 20 children who were divided into two groups, namely the red onion compress group of 10 children and the warm water compress group of 10 children. The results showed that there were differences in the decrease in body temperature in the red onion compress and warm water compresses. The eighth article is a study conducted by Hayuni (2019), at the Gilingan Health Center using an experimental method with a total of 20 samples consisting of six male respondents and 14 female respondents. The results showed that the red onion compress was effective in reducing body temperature in children. The ninth article is a research conducted by Kurniati (2018), in Kaliurip Village, Purwojati District, Banyumas Regency using a qualitative method with the main informants as many as five mothers who have toddlers with fever and triangulation informants, namely families of mothers who have fever toddlers and village midwives who served in the village. The results showed that the use of herbal medicines such as *kencur*, red onion, *dadap serep* leaves, and pace for sick toddlers is in great demand because of the belief that it has been passed down from generation to generation and these herbal medicines are easy to obtain and can be grown on their own. The tenth article is a research conducted by Hartoyo (2020), in Jemasih Village, Keanggunan District, Brebes Regency, Central Java using qualitative methods. The results showed that red onions are the majority of plants grown by farmers in Jemasih Village because this plant is an herbal plant that has many benefits because of its nutritional content which has an influence on immunity and can be used to cure various diseases.

Results and Discussion

Based on the results of the literature review that has been described, not all articles explain the results of research on red onions, but there is also a combination of red onions with warm water, tepid water sponge, and paracetamol so that this becomes the basis for reviewing research articles. The literature review that has been conducted on 10 research articles resulted in eight articles using pre-experimental and experimental methods, and two articles using qualitative methods. The results showed that the average age of the children sampled in the study was children aged three to 72 months, where at that age the child's immune system was still susceptible to virus exposure so that the incidence of fever at that age increased. The lowest body temperature before being given a red onion compress was 37.4°C and the highest temperature was 38.5°C, after being given a red onion compress the average body temperature decreased by 0.43°C. Giving red onion compresses can be categorized as an intervention that is safe and effective enough to reduce fever in children because red onions contain compounds alliin, cycloalin, methylation, fluroglucin, kaempferol, and essential oils that function to smooth blood vessels, increase the release of heat by evaporation from the body to the environment. The propyl disulfide and propyl metal disulfide compounds in red onions have volatile properties so that if crushed red onions are applied to the body, it will accelerate the transfer of heat from the body to the skin. In addition, red onions also contain alliin and pectin compounds which function as antiseptics that can control growth bacteria. Research on the effect of red onion compresses, warm water compresses, tepid water sponges, and giving paracetamol to children with fever stated that all these types of interventions had the effect of reducing body temperature, but red onion compresses were more effective in reducing fever compared to warm water compresses. The red onion can be used as the first alternative to reduce fever in children because red onions are generally readily available at home and are often used as cooking ingredients, however, giving red onion compresses is only effective for children whose body temperature is not too high, that is less than 39°C because the average decrease in body temperature after being given a compress is only 0.4°C (Faridah BD, 2018).

Conclusion

Based on the results of the analysis that has been carried out, it is concluded that the red onion compress is effective for reducing body temperature in children with fever, but the red onion compress is only given at a maximum body temperature of 38°C. If the body temperature is more than 38°C then further treatment is needed and the red onion compress can only be used as a complementary therapy.

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Declaration of Interest Statement

I am interested in using complementary therapy for alternative medicine.

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