



The Effectiveness of Warm Water Therapy for Constipation

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ABSTRACT

Constipation can be caused by the lack of water intake. Continues constipation that is not treated can cause various health problems in the digestive system. The purpose of the study is to find out the effectiveness of drinking warm water in the morning before breakfast in treating constipation. 25 participants volunteered to participate in this study. The subjects have a history of recurrent constipation in the last 3 months, had no defecated in the past 3 days at the time of the study, and had no urge to defecate. The subjects did not consume laxatives nor herbs to facilitate defecation. The subjects were given 500 cc of warm water before breakfast every day for three consecutive days. The effectiveness of therapy is measured by percentage of the subjects that can defecate on the first day, second day and the third day. The result of the study shows that the therapy was 68% effective ($p = 0,000$) on the first day, 88% effective ($p = 0,000$) at the second day, and 84% effective ($p = 0,000$) on the third day of therapy. During the three days of intervention, 60% subjects ($p = 0,000$) can defecate every day and 96% subjects ($p = 0,000$) can defecate at least once in three days of the study. Based on this study warm water therapy can be used as an alternative way to overcome constipation. Further studies are needed to evaluate the efficacy of the warm water with longer treatment period. A larger sample selection and treatment based on etiology are needed to be considered in future studies.

Keywords: Constipation, Warm Water Therapy

INTRODUCTION

Constipation can be caused by the lack of water intake. Continues constipation that is not treated can cause various health problems in the digestive system, especially in the colon, where defecation is confined. Warm water can stimulate peristaltic and move out the stool from colon. The purpose of the study is to find out the effectiveness of drinking warm water in the morning before breakfast in treating constipation to 25 participants who had history of recurrent

constipations in the past 3 months. The study shows that warm water therapy is effective to treating constipation.

Constipation is a condition in which individuals defecate less than three times a week, accompanied by hardened and dry stools which can sometimes be difficult to remove through the anus and cause discomfort in the rectum (Brown, 2011; National Institute of Diabetes and Digestive and Kidney Disease (1), 2018). However, the definition of constipation is not limited to the above circumstances, because each individual have their own defecation pattern (Gray, 2011; National Institute of Diabetes and Digestive and Kidney Disease (1), 2018).

In general, every individual has experienced non-serious constipation because it occurs in a short period of time and can return to normal. However, if constipation occurs and continues to be ignored, it can cause discomfort and several health problems (Armstrong, 2017; National Institute of Diabetes and Digestive and Kidney Disease, 2018). Health problems that can be caused by constipation are hemorrhoids, rectal bleeding, anal fissures, rectal prolapse and fecal impaction (Bennington-Castro, 2016; Stanford Health Care, 2019)

Constipation can be classified based on the cause into two, namely structural constipation due to structural abnormalities or due to stool obstruction, and functional constipation due to impaired colonic or anorectal motility (Bahruca, et al, 2013). Functional constipation can be divided into primary constipation, that is, constipation that cannot be determined, and secondary constipation is constipation that have a known cause (Rose, 2014). Based on the length of constipation, constipation can be classified into acute and chronic. Acute constipation lasts for several days, while chronic constipation is constipations that last more than three months (Cafasso, 2017).

Various factors that can cause constipation are as follows:

1. Too much water absorption from food in the colon. One reason is if the colon muscles contract slowly, it causes the stool to move slower thus the liquid from the food be more absorbed. This makes the stool dry and hard (Felman, 2017).
2. Diet. Fiber is needed for bowel movement and prevents long-standing food waste in the colon. Food rich in fiber are found in vegetables, fruits, nuts, seeds and whole grains. Foods that are low in fiber can trigger constipation, such as milk, cheese, dairy products, and meat (Felman, 2017; National Institute of Diabetes and Digestive and Kidney Disease , 2018; Potter and Perry 2010). Food that contain high iron or iron supplements, can cause constipation due to the slow absorption of iron, so that iron remaining in the digestive tract causes an imbalance of normal microbes causing constipation (Matulesy, 2015).

3. **Physical inactivity.** Constipation is more often found in individuals with physical inactivity. Physical activity can balance hormones and enzymes in the digestive system, so that the intestine is more easily contracted to remove stool. Physical activity can increase appetite. When the volume of food eaten increases, the intestinal contractions automatically increase to the colon, resulting in a drive to defecated (Huang, Ho, Lo, and Lam, 2014)
4. **Medicines.** Some medicines have constipation as a side effect such as narcotics, several types of pain killers, antidepressants, anticonvulsants, iron supplements, calcium blockers, diuretics, etc. Regular use of laxatives can cause the normal defecation reflex to disappear. Cessation of use can cause constipation (Armstrong, 2017; Felman, 2017; National Institute of Diabetes and Digestive and Kidney Disease, 2018; Potter and Perry 2010).
5. **Pregnancy.** Increased progesterone hormone in pregnant women causes peristaltic motion to slow down and cause water absorbs from the food in the colon to increase and cause constipation. An enlarged abdomen causes pressure on the intestine and rectum, resulting the flow of fecal discharge becomes uneventful which triggers constipation (Armstrong, 2017; Felman, 2017; National Institute of Diabetes and Digestive and Kidney Disease, 2018).
6. **Age.** The older age group is often more affected by constipation due to a decrease in metabolism which results in a lack of intestinal activity (Armstrong, 2017; Felman, 2017; National Institute of Diabetes and Digestive and Kidney Disease , 2018).
7. **Neglecting the desire for defecation.** The urge to defecate can be lost if neglected, the stool that is supposed to be released is maintained and constipation occurs (Felman, 2017).
8. **Lack of fluid intake.** Lack of regular fluid intake contributes to the incidence of constipation. Soft drinks containing caffeine and alcohol can trigger constipation (Armstrong, 2017; Felman, 2017; National Institute of Diabetes and Digestive and Kidney Disease, 2018).
9. **Health Disorders and Diseases.** Some disorders or health problems that can lead to constipation is a problem in the colon or rectum such as a tumor, hirschprung disease etc. Patients with Irritable Bowel Syndrome (IBS) tend to experience constipation. Besides this, disruption of the nervous system, endocrine and metabolism disorders, and other disorders can cause constipation (Armstrong, 2017; Felman, 2017; National Institute of Diabetes and Digestive and Kidney Disease , 2018).

Signs and symptoms of constipation include at least two of the following complaints: frequency of defecation is less than three times a week, 25% of defecation is done by: straining, the stool hard and dry, incomplete feeling after defecating, the sensation of obstruction is felt, or defecate is done by manual maneuvers i.e. removing the stool with fingers (Cafasso, 2017). This situation can be accompanied by abdominal cramps or pain, flatulence, vomiting, fever and loss of appetite (Felman, 2017). The criterion for chronic constipation is if the signs above last more than three months.

Various efforts can be made to prevent and treat constipation. The easiest way is to change the life style such as eating more high fibers food, drinking more water, exercising, hastening to defecate once urge comes, and cope with stress. If by changing the lifestyle of constipation is still constant, it is necessary to get further treatment in the form of laxatives, suppositories, or by doing an enema. However, if the situation remains unchanged, it is likely that constipation needs to be addressed medically (Armstrong, 2017; Setyorini, 2018).

Warm water can ease constipation. Ginting, Waluyo and Sukmarini (2015) found that consuming sufficient quantities of warm water will maximize digestion. Warm water will moisten the stool in the intestine so that the stool will come out easily during defecation. Hamidin (2012) conveyed that warm water can hasten the process of defecation through a runny and watery condition in the intestine. The watery atmosphere will facilitate the small intestine to push out leftover food which will be absorbed by the large intestine. Warm water will cause hydrostatic and hydrodynamic effects which make the blood circulation in the abdomen to become smoother.

Another research conducted by Yuanita (2011) also showed that warm water will ease the digestion process. The large intestine requires a runny and watery atmosphere to remove stool. Drinking warm water will make particles in the intestine broken down so that the digestion process becomes smooth and push out feces. It was supported by Suchita, Jinal, Mona and Dhrubo (2015) which stated that the body will maintain the temperature of food and drink in each digestive process. Drinking warm water will accelerate the regulatory process because the body will not spend much energy to regulate the temperature. Warm water that softens the stool will cause the defecation process to be faster in constipation.

The proper fluid intake is necessary and affects the elimination needs. When the fluid intake is inadequate, the elimination needs will be disrupted. The result in this study proved that the use of warm water for patients with constipation is useful to reduce the problem of constipation.

METHODS

The study was conducted in March 2018 at the girls' dormitory of a private university in Bandung West Java, Indonesia. The target population of the study are students who are actively enrolled at the university and live in the girls' dormitory of the University. The sample selection is done by purposive sampling. There are 50 people who meet the criteria for participating in the study, but only 25 people who voluntarily want to participate in this study.

Inclusion criteria to select participants as follow: aged between 17-25 years, have a history of recurrent constipation in last three months or more, have not defecated in the past 3 days at the time of the study, and had no urge to defecate. The participants agreed not to consume laxatives or herbs to facilitate defecation during the study. The subjects were given 500 cc of warm water with temperature 45°C at 04.30 AM before breakfast every day for three consecutive days.

Data collection was conducted with the agreement of each participant. After being given 500 cc warm water therapy at a temperature of 45°C to participants, they were asked to fill out a defecation time record sheet if defecation was successful. The effectiveness of therapy is measured by the percentage of the subjects that can be defecated on the first day, second day and the third day.

RESULTS

The result of the study shows that the therapy was 68% effective ($p = 0,000$) on the first day, 88% effective ($p = 0,000$) on the second day, and 84% ($p = 0,000$) effective on the third day of therapy. During the three days of therapeutic intervention drinking warm water before breakfast, it was found 15 subjects (60%, $p = 0,000$) could defecate every day, 6 subjects (24%) defecation twice, three subjects (12%) defecation once and only one subject (4%) cannot be defecated at all. In other words, that out of 25 subjects, 24 subjects (96%, $p = 0,000$) can be defecated at least once in three days' intervention.

DISCUSSION

The results of the study shows that drinking warm water therapy before breakfast was 68% effective ($p=0,000$) on the first day, 88% effective ($p=0,000$) at the second day, and 84% effective ($p=0,000$) on the third day of therapy. In three days experiment it was found out 96% ($p=0,000$) subjects at least successfully defecated once in the three days of the experiment, even 60% ($p=0,000$) subjects successfully defecated every day.

Lack of fiber and fluid is one of the factors causing constipation (Nafisa, Yulianto and Hendryanny, 2015; Saputra, Marlenywati and Saleh, 2016). Tilon (2015) explains that reducing the causative factors can be a step to overcome constipation. Increasing fluid intake can be done to expedite the process of defecation and ease the work of the kidneys.

The results of this study found that the administration of warm water therapy in the morning was effective for constipation. A study conducted by Hikaya (2014) found that giving 500 ml of water for three days would help reduce constipation in patients with stroke. Suchita, Jinal, Mona and Dhrubo (2015) explain that drinking water on an empty stomach will help stimulate bowel movements and help overcome constipation by softening and pushing out feces.

Waluyo and Sukmarini (2015) stated that drinking warm water before breakfast can stimulate a sensation to defecate better. This happens because after drinking warm water the body's fluid intake will increase so that there is no absorption of water reserves in the intestine. Water absorption in the intestine will be reduced so that the stool will be more soft and easy to move from the colon to the anus.

Guyton and Hall (2011) explain that the abdomen is an organ that has receptors for heat. Warm water can cause heat waves in the human body, so that it will stimulate the work of the intestine. Hamidin (2012) explains that warm water will cause a thin and runny atmosphere in the intestine so that the small intestine will easily push out leftover food into the large intestine. Yuanita (2011) and Ginting, Waluyo and Sukmarini (2015) added that in addition to the small intestine, the large intestine also needs a runny and liquid atmosphere to excrete feces. After drinking warm water, the particles in the intestine will be broken down so that the digestive circulation becomes smoother and causes feces to be pushed out from the colon.

Even though this study shows effective results of warm water for constipation, further studies are needed to evaluate the efficacy of the warm water with longer treatment period, larger sample selection and treatment based on etiology.

CONCLUSION

Based on this study, regularly drinking warm water before breakfast can be used as an alternative way to overcome constipation. Nurses and other health workers can use these findings as a cheap and easy first attempt to overcome constipation both in the community and clinical environments.

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