

Homeostasis Effect after Drinking Alkaline Water

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ABSTRACT

Alkaline water is the water which pH greater than 7. The water is purified to get rid of contamination of chemical and microorganisms. Alkaline water also has necessary mineral for the body. The benefits of alkaline water are anti-oxidant property, more oxygen than regular water with a small molecule that can penetrate the cells easily. The body is alkaline to some extent which give the body more oxygen. As a result, the body can detoxify and deliver the foreign matter throughout the body and also found that alkaline conditions can kill cancer cells.

Objective —To study the effectiveness of the drinking alkaline water to the homeostasis of the body, and the relationship of the amount of drinking alkaline water to the homeostasis of the body.

Materials and Methods— Experimental clinical trial in 48 healthy subjects (21 men and 27 women). Subjects were divided into 4 groups by age and the volume of drinking alkaline water per day (age 25-40 yrs and 50-60 yrs, each group were divided into 2 subgroups for drinking alkaline water 2 liters/day and 3.5 liters/day). The Homeostasis of the body were examined by Urine pH strip test of the urine in the morning, recorded before and daily for 14 days by themselves. The results were statistically analyzed by percentage, mean \pm SD and Paired t-test.

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Results —In 25-40 years group, mean urine pH after drinking alkaline water 14 days were statistically increased (p-value 0.00) 1.04 and 0.83 (in group 2 liters/day and 3.5 liters/day respectively). In 50-60 years group, mean urine pH after drinking alkaline water 14 days also were statistically increased (p-value 0.00) 0.87 and 1.29 (in group 2 liters/day and 3.5 liters/day respectively). When compare the volume of alkaline water 2 and 3.5 liters/day.

Conclusion —Drinking alkaline water for 14 days can change the homeostasis of the body to a more alkaline statistically significant. Amount of alkaline water drinking was not associated with changes in body homeostasis statistically significant.

Keywords—Alkaline water/Homeostasis of the body/urine pH strip test

INTRODUCTION

This research will be made aware of the effect of alkaline water drinking to the homeostasis of the body and will be made aware of the relationship of the amount of alkaline water drinking to change the homeostasis of the body. Statistically significant of the results will be able guide the qualification of alkaline water such as pH, volume/day that proper to drink. As well as further information on research in the future in terms of alkaline water.

“Water” is the essential to human life, our bodies consist of 70% water. Water carries nutrients to the different parts of the body, helps the body's digestive system, is an important component of the brain, help blood flow better, soluble toxins for excretion from the body, helps to ease movement and prevent the impact of various organs. Water is also a key ingredient in making the skin firmly, beauty and aged of humans as well. Good drinking water should have the following features. 1 No chemical, microbial contaminants and heavy metals. 2. water is alkaline (Alkaline Water) 3. water with minerals (Minerals).

Alkaline water is water with a pH greater than 7, thanks to purification. No contamination of chemical and microorganisms. Alkaline water also has necessary mineral for the body. The benefits of alkaline water is an anti-oxidant, has more oxygen, with a small molecule that can penetrate the cells easily, fast conditions. The body is alkaline to some extent makes the body more oxygen. As a result, the body can detoxify and deliver the foreign matter through out the body and also found that alkaline conditions can kill cancer cells.

OBJECTIVES

To study the effectiveness of the drinking alkaline water to the homeostasis of the body, and the relationship of the amount of drinking alkaline water to the homeostasis of the body.

RESEARCH DESIGN AND METHODS

This study is the clinical experimental trial. Participants were recruited and underwent screening tests. Subjects who passed the screening tests and inclusion criteria were enrolled to the study. 48 subjects (21 men and 27 women) were submitted to the study. They were with healthy, age 25-40 years and 50-60 years. Before the study performed, all the participants had undergone medical history record and physical examination. Vital signs were record and blood sample was taken for screening tests (BUN/Cr, Electrolytes)

The inclusion criteria were: Thai male or female, age 25-40 years and 50-60 years, healthy and no underlying disease, not taking any medication on a regular basis, no abuse of addictive substances, do not drink alcohol, no smoking, normal in BUN/Cr and electrolytes.

The exclusion criteria were: had an underlying disease, abnormal of BUN/Cr and electrolytes, drink coffee more than 2 cups/day.

Subjects who could pass screening tests and inclusion criteria were submitted to the study and examined the morning urine pH for baseline. Subjects were divided into 2 groups (24 subjects per group) by age (25-40 years and 50-60 years) and each group were randomized divided into 2 subgroups (12 subjects per group) by volume of alkaline water drinking per day (2 liters/day and 3.5 liters/day). Every subjects came to clinic everyday for received the alkaline water and send the record of morning urine pH to the researcher for 14 days. At the last day of the study, the researcher declare the results to subjects and follow up the adverse effects from the study.

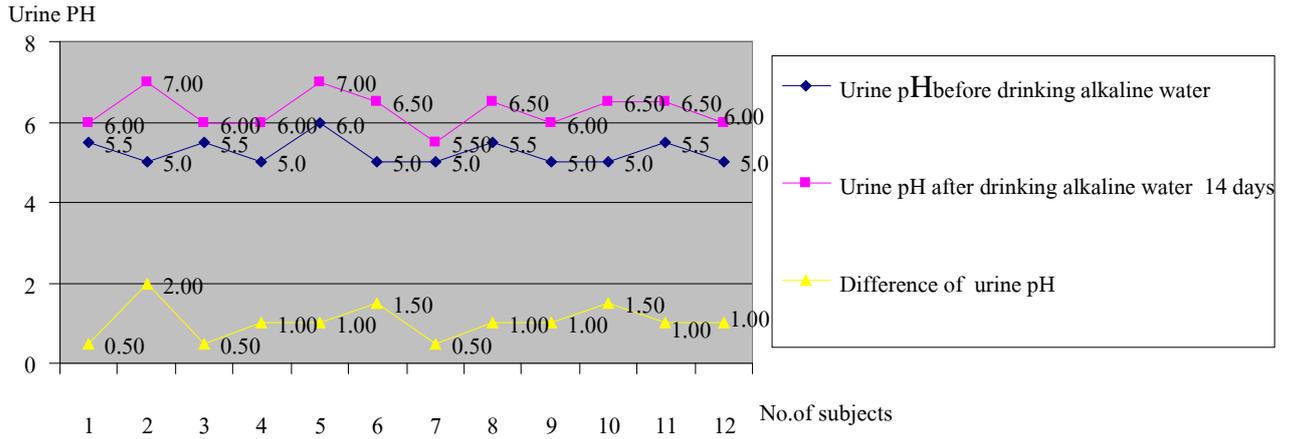
STATISTICAL ANALYSIS

Data were analyzed statistically using percentages, means and standard deviations for descriptive data. Differences between before and after drinking alkaline water were analyzed by Paired t-test analysis. The relationship of the amount of drinking alkaline water to the homeostasis of the body were analyzed by Pearson correlation test.

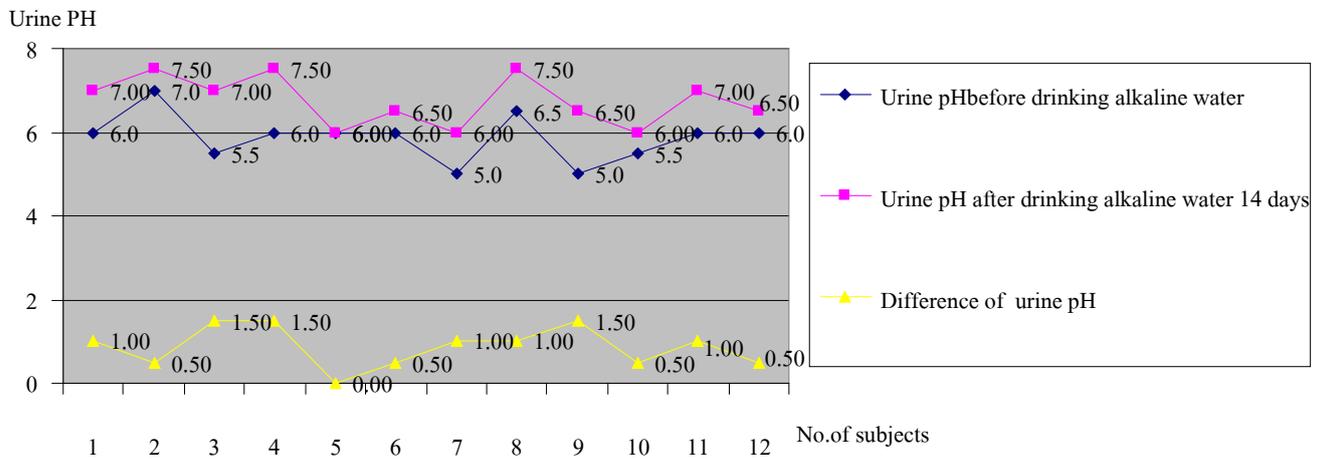
RESULTS

The general characteristics of participants were 48 subjects submitted to the study, composing of 21 men and 27 women with a mean age of 30.54 ± 3.77 in 25-40 years group and 54.25 ± 3.11 in 50-60 years group.

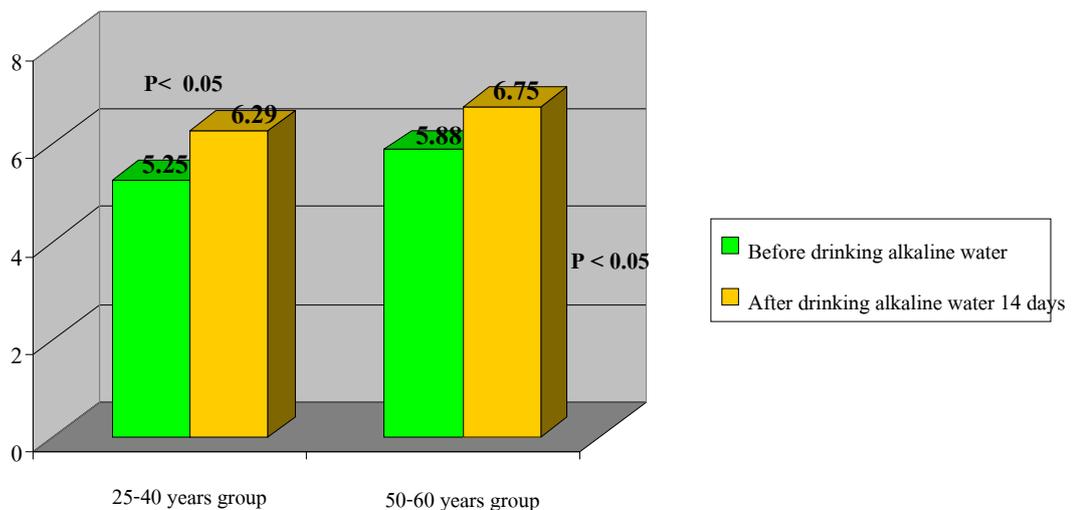
Mean urine pH after drinking alkaline water 14 days in group that drunk alkaline water 2 liters/day (both 25-40 years group and 50-60 years group) were increased statistically significant 1.04 and 0.88 (p-value 0.00) in 25-40 years group and 50-60 years group respectively. Mean urine pH after drinking alkaline water 3.5 liters/day also increased statistically significant both groups (0.83 in 25-40 years group and 1.29 in 50-60 years group, p-value 0.00)



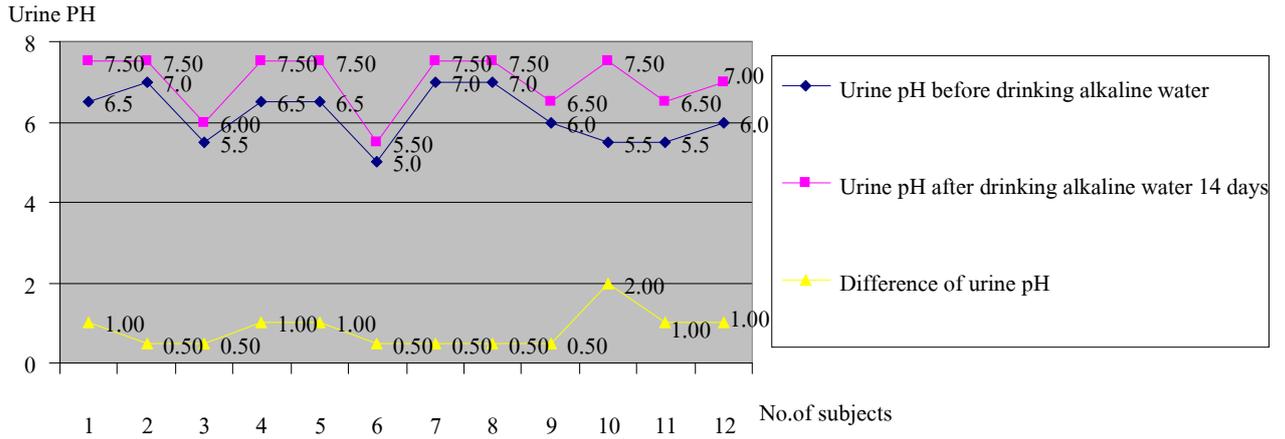
Picture 1:Urine pH in 25-40 years group,drinking alkaline water 2 liters/day



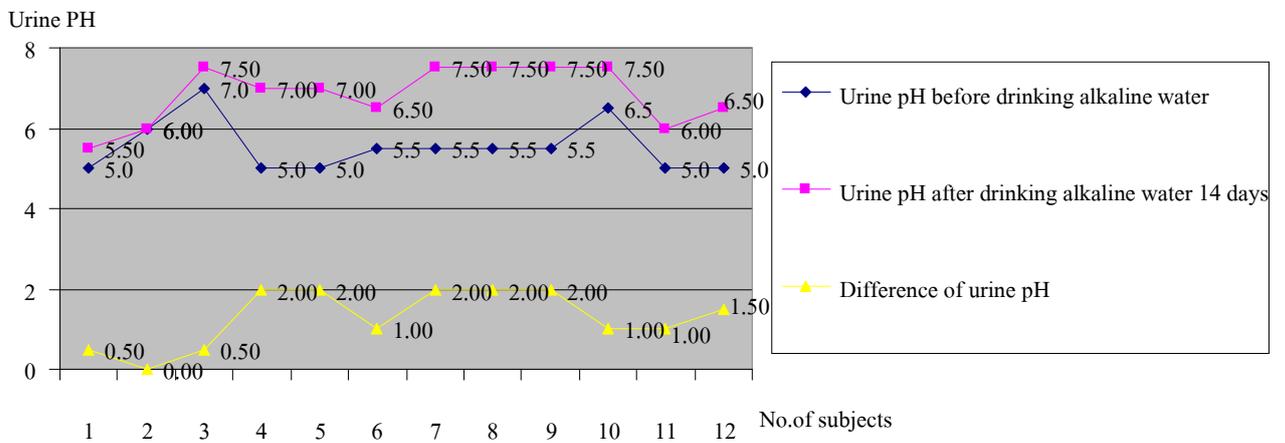
Picture 2:Urine pH in 50-60 years group,drinking alkaline water 2 liters/day



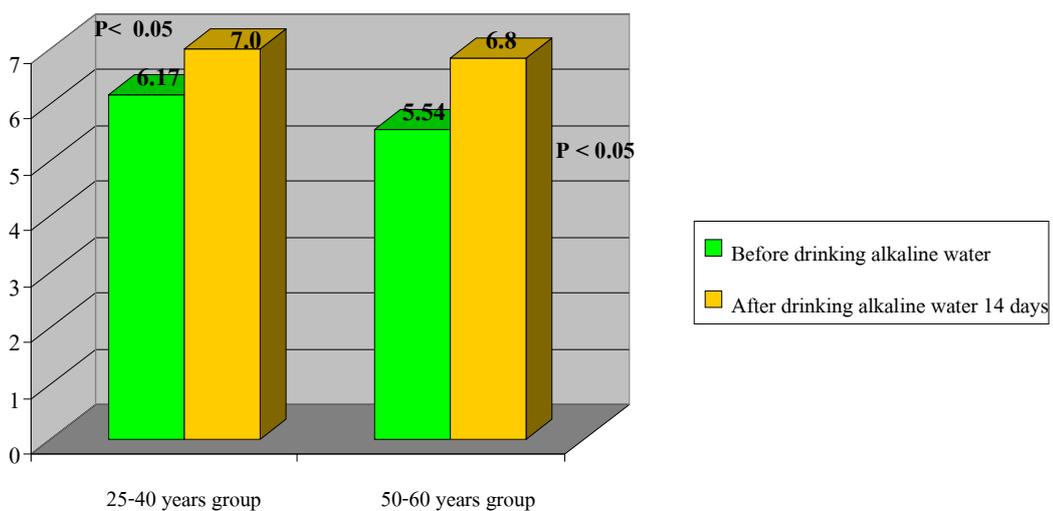
Picture 3:Comparison of mean urine pH in group of alkaline water drinking 2 liters/day



Picture 4: Urine pH in 25-40 years group, drinking alkaline water 3.5 liters/day



Picture 5: Urine pH in 50-60 years group, drinking alkaline water 3.5 liters/day



Picture 6: Comparison of mean urine pH in group of alkaline water drinking 3.5 liters/day

About the relationship of the amount of drinking alkaline water to the homeostasis of the body found that mean urine pH after drinking alkaline water 2 liters/day were not related with mean urine pH after drinking alkaline water 3.5 liters/day statistically significant at p-value 0.05

(in 25-40 years group:p-value=0.638,in 50-60 years group:p-value=0.724 by Pearson Correlation test)

CONCLUSIONS

Drinking alkaline water volume of 2 liters/day and drinking alkaline water of 3.5 liters/day for 14 days can change the homeostasis of blood in the body to a more alkaline significant statistically (p-value 0.00). There was no correlation of the amount of drinking alkaline water to change the homeostasis of blood statistically significant, the reasons that can made the results like this may be from 1. The study does not control the diet of each subject. 2. Background of the homeostasis of the body each subject does not equal. 3. The record of volume of alkaline water drinking were record from subjects themselves. However, results of this study are supporting the effectiveness of drinking alkaline water that can change the homeostasis of the body more alkaline.

For aspect of adverse events during the study, no serious adverse effects of alkaline water was observed and reported.

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