Correlation of pH in Urine with Capacity of Drinking Water per Day

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Abstract: *The objective of our study was to show correlation of pH of urine with capability of drinking water per day. Measurement of acidity or alkalinity of urine is termed as urine pH. The normal pH of urine is 7.0. If higher the pH than 7 it means it is basic and if number are lower than 7 it means that pH is acidic. Doctors and health organization recommended people to drink 2.5 liter in a day. Without water human can only live for few days. Many tests can be performed to diagnose the pH value in urine such as microscopic exam, dipstick method and visual exam. A total of 100 subjects participated from Bahauddin Zakariya University in our current research. In our research we used dipstick method for the measurement of pH in urine. In dipstick method, dipstick strips were used on that ten different bands were present. It was concluded that pH in urine have significant relation with capacity of drinking water per day. Male who drink 1-4 and 5-8 glasses of water in day have 33.33% and 66.67% chance of alkaline pH and female who drink 1-4 glasses had 25% chance of acidic pH and 8.33% chance of basic pH.*

Keywords: *pH of urine, Capacity of drinking water, Relation of pH with water*

1. INTRODUCTION

Measurement of acidity or alkalinity of urine is termed as urine pH. Urine consists of salts, water, and other waste products of kidney. The balance of these components affects the pH of urine. The normal pH of urine is 7.0. If higher the pH than 7 it means it is basic and if number are lower than 7 it means that pH is acidic. The average pH of urine is 6. Blood glomerular filtrate is normally acidified by kidneys from a pH of near about 7.4 to pH about 6 in urine. The range of pH from 4.5-8 that depends on individual's acid-base status. According to American association of clinical chemistry, the average pH of urine is 6. If pH of urine is less than from 6 it indicate kidney stones. The major factor that affects urine pH is food. Foods have main affect on value of pH. In acidic food grains, sodas, sugary foods, high protein foods, and included. In alkaline foods most fruits, nuts and vegetables are included. If an individual have high or basic pH then it is a sign of many diseases e.g; kidney stones, kidney related disorders, respiratory alkalosis, gastric suctioning, vomiting, kidney failure and urinary tract infection (UTI). If pH is low or acidic then it indicates starvation, diarrhea, dehydration and diabetes. Many tests can be performed to diagnose the pH value in urine such as microscopic exam, dipstick method and visual exam.

Drinking water is water that is able to drink. It is clean enough to drink for community and is also said to be potable water. From drinking water we can make food products and it is used for many other purposes. Capacity of drinking water changes from one person to another and it depends on sex, age, climate, environmental conditions and body activity. Body need more water consumption after hardworking or exercise. Doctors and health organization recommended people to drink 2.5 liter in a day. Without water human can only live for few days. It is most necessary nutrient. Drinking more water prevents us from heart and kidney diseases. It prevents our skin from drying.

The objective of our study was to correlate pH of urine with capability of drinking water per day.

2. MATERIALS AND METHODS

A total of 100 subjects participated from Bahauddin Zakariya University in our current research. In our research we used dipstick method for the measurement of pH in urine. In dipstick method, dipstick strips were used on that ten different bands were present. We collected the sample of all

subjects in urine sample containers separately and then dip the dipstick strip in urine sample for few seconds. Then took out strip from urine sample and hold it for few minutes in air. When strip started to change the colour we noted the pH readings.

3. RESULTS

In table1 results showed that maximum male individuals had average pH value. Male who drink 1-4 glasses in day had 10% basic pH and only 2 people had pH 7 and 9. Male who drink 5-8 glass of water in a day had 2% individuals 7 pH.

Table1.*Correlation of pH in urine with capacity of drinking water in a whole day in males*

Males	pH of Urine				
	5	**6**	**7**	**8**	**9**
1-4 water's glass	0%	10%	1%	0%	0%
5-8 water's glass	0%	3%	2%	0%	0%
9-12 water's glass	0%	0%	0%	0%	0%

In females who drink 5-8 glass of water in day had 11% average pH and 7% individuals had pH in ranges of 5, 7, 8 and 9 pH. All results are given in table2.

Table2. *Correlation of pH in urine with capacity of drinking water in a whole day in females*

Females	pH of Urine				
	5	**6**	**7**	**8**	**9**
1-4 water's glass	3%	18%	1%	0%	0%
5-8 water's glass	2%	11%	2%	2%	1%
9-12 water's glass	0%	1%	1%	0%	0%

4. DISCUSSION

Our research work was questionnaire based study. In our research we showed correlation pH of the urine with capability of drinking water in a day. First of all we too permission of all participated subject either they are willing for research or not. When they permitted, then firstly we asked them how many glass of water they consume in a whole day. Then test their urine sample and correlate pH of urine with capacity of drinking water. Tue H. Hansen and Mette T. Thomassen work on effect of drinking water pH in the human gut microbiota. Markus MacGill suggested that alkaline water has adverse affect than acidic water, alkaline water increases pH in urine.

5. CONCLUSION

It was concluded that pH in urine have significant relation with capacity of drinking water per day. Male who drink 1-4 and 5-8 glasses of water in a day have 33.33% and 66.67% chance of alkaline pH respectively and female who drink 1-4 glasses had 25% chance of acidic pH and 8.33% chance of basic pH.

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