ASSESSMENT OF URIC ACID AND ITS ALLIED HEALTH BENEFITS AND RISKS: FOCUSING ON BRISK WALK

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ABSTRACT:

Uric acid is a chemical produced by the body as a result of breakdown in substances known as purines while purines are found normally in the body and commonly found in some food and drinks. Alteration in Uric acid is also considered linked with exercise. This research study is carried out to assess the level of uric acid concerning health benefits and risks. The participants of the study were comprised of all those males aged above 30 years. Thus the hundred participants of the study were divided into groups i.e. control group (CG) and experimental group EG. Each group was comprised of fifty (50) participants and likewise, two months of brisk walking was suggested to the EG. A 5 ml blood sample was collected from each subject and was assessed to understand the level of Uric Acid. Pre and post-test results were processed through a statistical package for social science (SPSS, version-32) and likewise, suitable statistical tools were applied for analysis. Based on findings the researcher that brisk significantly decreases the level of uric acid which indicates that exercise may have a positive impact on health.

Keywords: Exercise, Brisk walk, Uric Acid, Health Benefits, Health Risks

INTRODUCTION:

According to Desai et al (2004), Exercise is considered a basic tool for promoting health and avoiding health complications such as tension, depression, cardiovascular health problems etc. Physical activity with low intensity plays a pivotal role in the management of weight and in decreasing the level of uric acid concentration among obese individuals (Nishida et al, .2011). Regular exercise has the potential to reduce the risks of mortality and increase the life span by 4-6 years a level greater than the 1–4 years of life-shortening effect from high serum uric acid (Chen et al, 2015).

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The patients with high blood pressure had high level of uric acid and lower values of nitrite. Likewise that high level of uric acid may cause oxidative stress which can be reduced by training status (Trapé et al, 2013).The agents which contribute to elevated levels of uric acid are the usage of more purine and uric acid, obesity, drug use, physical activity and certain diseases in the blood. The foods consisted of high purine content (> 1000 mg/day) as in the viscera, meat broth, alcohol, and poultry are very risky for increasing the uric acid in the blood (Kusumayanti & Dewantari, 2017).Numerous studies indicates that there is a very close relationship of uric acid and incident diabetes and exercise. It means that exercise may cause increase and decrease in the level of uric acid as well as blood glucose level. The study conducted by Kivity et al (2013) shows that serum uric acid SUA is independently linked with diabetes outcome, significantly more in women than in men. The study conducted by that regular exercise helps in reduction of inflammation and also helps to prevent gout flares while improving mood and overall parameters of health. People with gout should not exercise during flares to avoid worsening pain and speed up recovery (Mediacl News today, ND).Different health complications such as kidneys problems, heart diseases, high blood pressure, diabetes, fatty liver diseases and metabolic syndromes all are considered associated with elevated levels of uric acid. These all health problems are very common among the general publics. In order to examine that either brisk walk either causes increase or decrease in the levels of uric acids, this particular research study will be initiated.

Objectives of the study

- To assess the level of Uric acid among the peoples aging above then 30 years
- To assess the impact of brisk walk on Uric acid among the peoples aging above then 30 years
- To suggest future remedies for the people with elevated levels of uric acids.

METHODS & MATERIALS:

The below procedures were applied by the researcher to reach certain findings and conclusions.

Participants of the study:

The participants of the study were comprised of males aging above 30 years and were selected from the executive club of the University of the Punjab, Lahore, Pakistan. The details inclusion criteria were; subjects aged above 30 years, subjects using no self-medication, subjects having no chronic health problems and subjects who gives who voluntarily participated in the study.

Subject and Subject Size:

The participants were comprised of a hundred (100) males aging above 30 years and were divided into groups i.e. control group (CG) and experimental group EG. Each group was comprised of fifty (50) participants.

Exercise Intervention:

The heart rate of the participants was assessed through the Resting Heart Rate Formula and thus brisk walking was suggested to all the participants of the study which was carried out by all the subjects for two months.

Uric Acid Assessment:

5 ml blood was collected from each subject and thus separate identification code was given to each blood sample similarly a uric acid blood test, also known as a serum uric acid measurement was taken in home care laboratories for the analysis of uric acid.

Ethical Approval:

Ethical approval was taken from the ethical review and research board of the University of the Punjab and thus informed consent was taken from each participant before participation in the study.

DATA ANALYSIS:

Pre and post-test results were processed through a statistical package for social science (SPSS, version-32) and likewise, suitable statistical tools were applied for analysis.

PRESENTATION OF DATA:

Table No. 1
Shows the Descriptive Analysis of both Groups i.e CG and EG in term of Age, Weight and Uric Acid

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age of Respondents	20	1.00	3.00	1.6000	.82078
Weight of Respondents	20	1.00	3.00	2.0000	.64889
UriPre	20	2.00	7.00	6.0000	1.21395
Uripost	20	4.50	7.00	5.7750	.73404
Valid N (listwise)	20				

The above table indicates the Descriptive Analysis of both Groups i.e. CG and EG in terms of Age, Weight and Uric Acid. The total number of respondents was twenty (N=20). Data were expressed as Minimum, Maximum, Mean and Standard Deviation. The minimum range in terms of age was 1.00, the maximum range was 3.00, the mean was 1.6000 and the standard deviation was .82078. The minimum range in terms of weight was 1.00, the maximum range was 3.00, the mean was 2.0000 and the standard deviation was .64889. The minimum range in terms of Uric Acid during the pretest was 2.00, the maximum range was 7.00, the mean was 6.0000 and the standard deviation was 1.21395. The minimum range in terms of Uric Acid during the posttest was 4.50, the maximum range was 7.00, the mean was 5.7750 and the standard deviation was .73404.

Table No. 2
One sample t-test shows the pre and post test results of both CG and EG in term of Uric Acid

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
UriPre	20	6.0000	1.21395	.27145	1.213954	19	.000
Uripost	20	5.7750	.73404	.16414	35.184	19	.000

The above table shows the pre and post-test results of both CG and EG in terms of Uric Acid. Data were explained as mean, standard deviation, df, t value and level of significance. The mean of both CG and EG in terms of uric acid during the pretest was6.0000, the standard deviation was 1.21395, df was 19, the t value was1.21395 and the level of significance was 000 likewise mean of EG in terms of uric acid during the posttest was 6.2000, the standard deviation was .73404, df was 19, t value was35.184 and level of significance was.000, Therefore the results indicants a significant difference between both CG and EG in terms of uric acid during pre and post-test analysis.

Table No. 3
Independent sample t test shows the pre and post test results of both CG and EG in term of Uric Acid

Group Statistics

	GROUPS	N	Mean	Std. Deviation	Std. Error Mean	df	t	Sig.
Uri iPre	Control Group	10	5.8000	1.54919	.48990	18	-.028	.223
	Experimental Group	10	6.2000	.78881	.24944	13.373	.028	
Uri post	Control Group	10	5.8500	.88349	.27938	18	.447	.920
	Experimental Group	10	5.7000	.58689	.18559	15.68	.447	

The above table shows the pre and post-test results of both CG and EG in terms of Uric Acid. Data were explained as mean, standard deviation, df, t value and level of significance. The mean of CG in terms of uric acid during the pretest was 5.8000, the standard deviation was 1.54919, df was 18, and the t-value was 028 Likewise mean of EG in terms of uric acid during the posttest was 6.2000, the standard deviation was .78881, df was 13.373, t value was-028 and level of significance during both times of both groups was .223. The mean of CG in terms of uric acid during the posttest was 5.8000, the standard deviation was 27938, df was 18, t value was 447 likewise mean of EG in terms of uric acid during the posttest was 5.7000, the standard deviation was .58689, df was 15.68, t value was .447and level of significance during both times of both groups was .920. Hence there is a significant difference in the test results of CG and EG in terms of Uric Acid. A significant decline was found in Uric Acid Levels during pre and post-test results of EG.

RESULTS AND DISCUSSION:

The current study was associated with brisk walking and alteration of uric acid levels among adults above 30 years similarly the results of the study reveal that the mean of CG in terms of uric acid during the pretest was 5.8000, the standard deviation was 1.54919, df was 18, and the t-value was 028 Likewise mean of EG in terms of uric acid during the posttest was 6.2000, the standard deviation was .78881, df was 13.373, t value was-028 and level of significance during both times of both groups was .223. The mean of CG in terms of uric acid during the posttest was 5.8000, the standard deviation was 27938, df was 18, t value was 447 likewise mean of EG in terms of uric acid during the posttest was 5.7000, the standard deviation was .58689, df was 15.68, t value was .447and level of significance during both times of both groups was .920. Hence there is a significant difference in the test results of CG and EG in terms of Uric Acid. A significant decline was found in Uric Acid Levels during pre and post-test results of EG.

In line with this emerging finding of the study, the results of the study conducted by Francis & Hamrick, (1984). Indicated that acute exercise means exercise with low intensity has a long-lasting impact on serum uric acid levels as compared to chronic exercise. The study further stated that mechanisms for these changes are discussed as well as the implications of coronary disease.

Such an emerging concept is supported by results that aerobic exercise caused a statistically significant increase in salivary UA concentration. Uric acid (UA) is an end product of purine metabolism and has been recommended to function as the most important antioxidant molecule in saliva (Battino et al. 2002).

The same findings are drawn by González et al (2008) that moderate intensity significantly reduces the level of serum uric acid serum creatinine, while arterial blood pressure and urea had significant results in both study groups.

In line with these findings, an investigation was carried out among hypertension patients who were divided into CG and EG and thus eight weeks of continuous exercise training program ranging from 45 to 60 minutes throughout this time was applied to EG and found a significant result in term of Uric acid and all other allied parameters (Lamina & Okoye 2010).

CONCLUSION:

Based on data analysis and findings the researcher concluded that exercise has a significant positive impact on the level of uric acid because a decrease was found among the participants of the study which means that brisk walk is beneficial concerning health.

RECOMMENDATIONS:

As a result of the findings and conclusion, the below recommendations are hereby made by the researcher

1. General masses may be made aware of the health benefits of brisk walking with special reference to uric acid
2. Walking and jogging tracks should be made in public parks to provide opportunities for walking and jogging for all ages.

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