



Asian Journal of Research in Biological and Pharmaceutical Sciences

Journal home page: www.ajrbps.com



HAIRFALL AND ITS RELATION WITH SPECIFIC GRAVITY OF URINE

Shahida*¹ and Muhammad Imran Qadir¹

¹*Institute of Molecular Biology and Biotechnology, Bahauddin Zakariya University, Multan, Pakistan.

ABSTRACT

During the period of menopause as an effect of changes in hormone status, this actually extends from 3 to 7 days in women. Hair fall problem is seen due to hormonal imbalance in this state. During this study hair fall due to hormonal imbalance is related to urine specific gravity. Urine specific gravity is a test in which urine density is compared with the density of water. This test is simply known as urinalysis. Beets, carrots, rhubarb, blackberries, fava beans are rich of water and make the urine dilute. Dipstick procedure is used to check the specific gravity and if specific gravity is between 1.002 -1.030 it comes under normal state. If it is above 1.010 it specifies mild dehydration, higher value indicates more dehydration. Relation between hair fall and urine specific gravity is found significant.

KEYWORDS

Nutrition, Urine and Hair fall.

Author for Correspondence:

Shahida,

Institute of Molecular Biology and Biotechnology,

Bahauddin Zakariya University,

Multan, Pakistan.

Email: shahida3120@gmail.com

INTRODUCTON

Menopause is a condition which extends from 3 to 7 days in women. Most of the women complain in this condition that they are affected by hair fall problem. This is because of the hormonal imbalance in this state (Shapiro, Wiseman, and Lui, 2000)¹. Beside hormones, nutrition also has a great impact on the hair growth cycle. Human diet must contain the essential ingredients such as steroids which make hair integument in the skin and promote growth (França, Rodrigues, Ledon, Savas, and Chacon, 2013)². Other are proteins, composed of amino acids such as L-lysine present in hair roots maintain hair shape and volume, cysteine, methionine these are sulphur containing amino acids and the foundation of keratin protein of which hair are made up of. Fats present in diet are usually

the part of steroids hormones. Carbohydrates usually cover major portion of diet. Vitamins such as C, B and A greatly influence the hair growth. If hair fall problem is not treated by the healthy diet then some medication is used along with hormonal dosage (Goluch-Koniuszy, 2016)³.

Urine specific gravity is a test in which urine compared with the density of water. Commonly this test is known as urinalysis. This gives the demonstration about the kidney condition and its working whether it is producing dilute urine or concentrated urine. Concentration of urine is directly related to the water intake process. Drinking of more water produce dilute urine and on the other if less water is taken concentrated urine is produced. Some fruits are also rich of water content and make urine more diluted such as carrot, black berries, and beets. The condition in which more concentrated urine is produced is refers as diabetes insipidus, sometime it also indicate different kidney problems along with the urinary tract infections hyponatremia. Dipstick test is one of the common test used to check the specific gravity of the urine. Its results are interpreted as if the specific gravity is between 1.002 -1.030 it comes under normal state. If it is above 1.010 it specifies mild dehydration, higher value indicates more dehydration (Oppliger, Magnes, Popowski, and Gisolfi, 2005)⁴.

MATERIAL AND METHODS

Sample collection

One hundred individuals were selected for dipstick urine test and were provided with small bottles to collect their urine in it, with dipstick reader the values the specific gravity of their urine was measured.

Method

Selected individuals were ask to follow the procedure given below

Urine which is to be collected must be fresh and well mixed. Hold the testing strip from the opposite side to dip it in the collected urine specimen.

All the testing area should be plunged into it. After that removes the testing strip soon from the specimen. If it remains dipped into the urine for long time then the entire test reagents present on it will be washed away. Keep the reagent strip in a horizontal position and use sucking towel to remove excess urine. Each individual using this dipstick should place the strip soon on the reader tray in order to read the results. To protect the remaining strips which are not used it is necessary to charge the cap of the bottle as soon as possible. Each individual is allowed to record the value of their urine specific gravity on the provided Performa.

RESULTS

Under the dipstick method hundred individual urine was analyzed to check their specific gravity of urine. Average value of 22 male individual's urine specific gravity is 0.700842 with standard deviation of ± 0.488506 . All of these individuals have intense hair fall. While rest of the 27 male has no intense hair fall with mean specific gravity of 0.4102 and its standard deviation is ± 0.511522 . On the other hand 26 female have an intense hair fall with mean specific gravity of 0.257625 and ± 0.454049 is its standard deviation. While rest of the 26 female have no intense fall with the average urine specificity of 0.49352 with ± 0.523205 standard deviation value. Combine mean value of male and female with intense hair fall is 0.453465 as shown in Table No.1.

T-Test Analysis

T-test was performed separately for males and females. For male p-value which was estimated as 0.063898 and for females 0.099082712 was calculated as T-test value. As the p-value is less than 0.1 of the T-Test present that there is a significant relation between intense hair fall and specific gravity of urine as shown in Table No.1.

Table No.1: Mean, standard deviation and p-value of male and female

S.No	Gender	No intense hair fall	Intense hair fall	p-value
		Mean + standard deviation	Mean + standard deviation	
1	Male	0.4102, ± 0.511522	0.700842, ± 0.488506	0.063898
2	Female	0.49352, ± 0.523205	0.257625, ± 0.454049	0.099082712
3	Both	0.453465	---	---

CONCLUSION

Hormonal imbalance and nutritional deficiency both majorly affect the growth of the hair. In this study hair fall due to hormonal imbalance is related to urine specific gravity. Urine specific gravity is a test in which urine density is compared with the density of water. Significant results are obtained when the affect of urine specific gravity was measured with intense hair fall. There may be a genetic relation of intense hairfall and specific gravity of urine.

ACKNOWLEDGEMENT

The authors wish to express their sincere gratitude to Institute of Molecular Biology and Biotechnology, Bahauddin Zakariya University, Multan, Pakistan for providing necessary facilities to carry out this research work.

CONFLICT OF INTEREST

We declare that we have no conflict of interest.

BIBLIOGRAPHY

1. Shapiro J, Wiseman M and Lui H. Practical management of hair loss, *Canadian Family Physician*, 46(7), 2000, 1469-1477.
2. Franca K, Rodrigues T S, Ledon J, Savas J and Chacon A. Comprehensive overview and treatment update on hair loss, *Journal of Cosmetics, Dermatological Sciences and Applications*, 3(3A1), 2013, 1-8.
3. Goluch-Koniuszy Z S. Nutrition of women with hair loss problem during the period of menopause, *Przegląd menopauzalny= Menopause review*, 15(1), 2016, 56-61.
4. Oppliger R A, Magnes S A, Popowski L A and Gisolfi C V. Accuracy of urine specific gravity and osmolality as indicators of hydration status, *International journal of sport nutrition and exercise metabolism*, 15(3), 2005, 236-251.

Please cite this article in press as: Shahida and Muhammad Imran Qadir. Hairfall and its relation with specific gravity of urine, *Asian Journal of Research in Biological and Pharmaceutical Sciences*, 7(2), 2019, 56-58.