

A COMPARATIVE STUDY OF SERUM CHOLESTEROL IN BALGHAMI AND SAFRAWI PERSONALITIES

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ABSTRACT

Background: Temperament is the central concept of Unani System of medicine that needs to be scientifically validated

Objective of this study was to find if there is any significant difference in the serum cholesterol of Balghami and Safrawi temperament healthy volunteers.

Method: After categorizing individuals into Balghami and Safrawi temperaments, their serum sample was tested for cholesterol.

Result: It was found that cholesterol was significantly more in volunteers of Balghami temperament.

Conclusion: there is a relation between temperament and serum cholesterol level that validates the Unani concept of fat being cold in nature present more in cold temperament individuals.

Key words:Balghami, Safrawi, temperament.

INTRODUCTION

It is evident in the history of the development of medicine that the study of health and disease as a branch of knowledge started in the 500 BC accredited to Hippocrates (460 BC), who established theories in context of the structure and functioning of the human body as well health and disease. Of these, temperament is one of the crucial concepts, which states that every human being will have one of the four temperaments (Mizaj) viz., Damwi, Balghami, Safrawi and Saudawi. Each temperament is attributed with some characteristics that help to identify and differentiate on personality type from the other. The most accepted criteria for temperament assessment was given by Ibn-e-Sina that consisted of ten parameters. According to Ibne-Sina^[1,2], Muscle and fat (Lahm and Shahm) is one of the ten criteria to determine human temperament and he stated that Fat always denotes coldness and in such cases there is flabbiness and deficiency of liquid and solid fat (Shahm wa Sameen) denotes heat. If fat is in excess, it denotes that the excess is in cold and moisture and that the body is cold and moist ^[3]. considering the Unani concepts that a body which is cold should have more fat than a hot body, this comparative study was undertaken with the objective of validating an important theory of Unani medicine i.e., temperament (Mizaj).

METHODOLOGY

The present study was carried out in Ajmal Khan Tibbiya College AMU Aligarh during 2001 to 2004. A total of 64 volunteers of either sex in the age group of 20-40 years having only Balghami or Safrawi temperament were randomly selected for this study and their consent was taking prior to any to examination. The temperament of volunteers was assessed through a self-designed proforma based on Ajnas-e-‘Ashra and after a thorough physical and systemic examination, only those volunteers were enrolled for the study who were apparently healthy and belonged to the specified temperament and age groups. After selecting the volunteers, a fasting venous blood sample of 5 ml was drawn from which serum was separated and analyzed for cholesterol. For estimation of cholesterol one step method of Wybenga and Pileggi^[3] was adopted.

OBSERVATION AND RESULT:

Table 1. Distribution of Volunteers according to Temperament (Mizaj) and Age

Mizaj	Male	Female	Total
Balghami	12	16	28
Safrawi	22	14	36
total	34	30	64

Table 1- shows that for total 64 healthy volunteers, 28 belonged to Balghami (12 males and 16 females) groups whereas, 36 were from Safrawi group (22 males and 14 females). There distribution is graphically presented in **Fig. 1 & 2**.

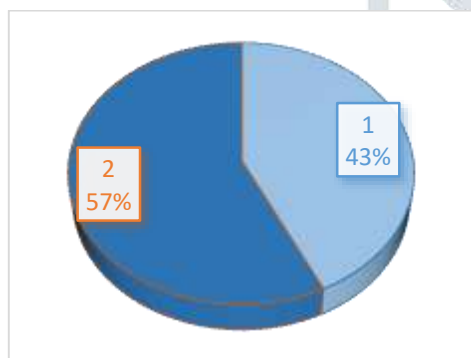


Figure 1. Distribution of Balghami Individuals according to Gender

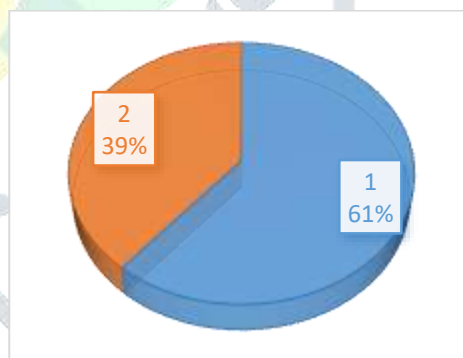


Figure 2. Distribution of Safrawi Individuals according to Gender

Table 2. Mean S.D. of Age, Height and Weight of Volunteers

Mizaj	Age	Height	Weight	BMI
Balghami	27.7±2.5	62.8±9.9	61.6±6.9	24.9±2.2
Safrawi	24.5±3.0	64.7±4.0	50.6±9.1	19.6±2.4

Table 3. Mean & S.D. of Age, Height and Weight of Male Volunteers

Mizaj	Age	Height	Weight	BMI
Balghami	27.2±2.6	65.29±16.1	63.2±10.4	24.2±2.6

Safrawi	25.3±3.7	66.6±4.3	23.7±10.4	19.8±2.8
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Table 4. Mean & S.D. of Age, Height and Weight of Female Volunteers

Mizaj	Age	Height	Weight	BMI
Balghami	28.1±2.5	61.1±1.3	59.62±2.1	25.6±1.2
Safrawi	23.4±2.1	61.9±0.9	45.7±4.9	19.3±2.0

Table 5. Comparison of serum cholesterol in Balghami & Safrawi Volunteers

Mizaj	Cholesterol (Mean & Standard Deviation)	Standard Error of Mean
Balghami	167.4 ± 15.6	2.948
Safrawi	156.8 ± 10.4	1.733
Significance	t = 3.2549 at df = 62, Standard Error of difference = 3.257, The P value is 1.6698. This result is significant at $p < .05$.	

Inference: There is significant difference in the serum cholesterol levels of the individuals of Balghami temperament. Balghami persons had more of cholesterol in their serum as compared to Safrawi persons. The same results can be seen in the **Fig. 3** below.

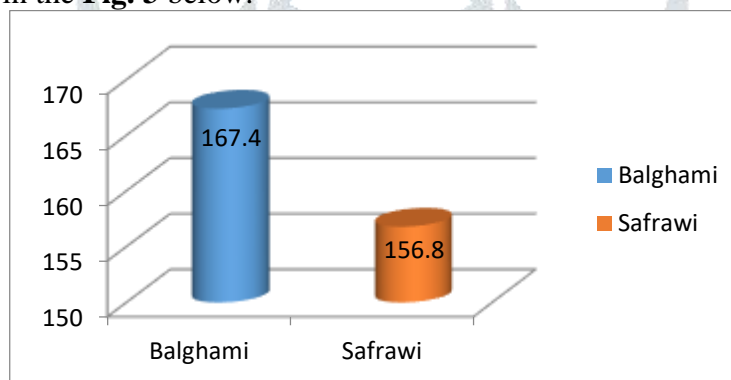


Figure 3. Comparison of serum cholesterol in Balghami & Safrawi Volunteers

Table 6. Comparison of serum cholesterol in Balghami & Safrawi Male Volunteers

Mizaj	Cholesterol (Mean & Standard Deviation)	Standard Error of Mean
Balghami	176.03 ± 21.1	6.0910
Safrawi	158.5 ± 12.4	2.6437
Significance	t = 3.0653 at df = 32, Standard Error of difference = 5.719, The P value is 1.694. This result is significant at $p < .05$.	

Inference: the cholesterol level had significant differences in males of Balghami and Safrawi temperament. Serum Cholesterol was more in Balghami persons as compared to Safrawi individuals. **Fig. 4** graphically represents the same result.

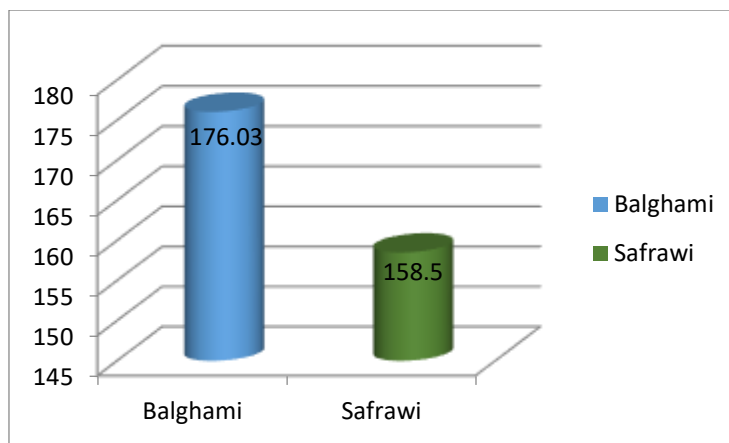


Figure 4. Comparison of serum cholesterol in Balghami & Safrawi Male volunteers

Table 7. Comparison of serum cholesterol in Balghami & Safrawi Female volunteers

Mizaj	Cholesterol (Mean & Standard Deviation)	Standard Error of Mean
Balghami	160.96 ± 7.1	1.7750
Safrawi	154.3 ± 7.4	1.9777
Significance	t = 2.5133 at df = 28, Standard Error of difference = 2.650, The P value is 1.701. This result is significant at $p < .05$.	

Inference: the cholesterol level had significant differences in females of Balghami and Safrawi temperament. Serum Cholesterol was more in Balghami persons as compared to Safrawi temperament volunteers. **Fig. 5** graphically represents the same result.

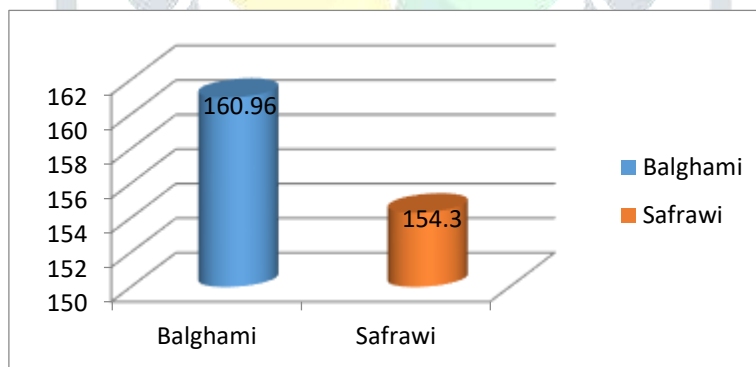


Figure 4. Comparison of serum cholesterol in Balghami & Safrawi Female volunteers

DISCUSSION:

According to Unani classical literature Fat (Shahm) always denotes coldness and flesh (Lahm) denotes hotness. If fat is in excess in the body it indicates that the body is cold and wet (Barid-Ratab), whereas excess in flesh indicates that the body is Hot and wet (Har-Ratab) [6]. Therefore it was hypothesized that the serum cholesterol level may reveal strong relationship with their temperament, in future which may be helpful for determination of temperament. Total 64 healthy volunteers of both sexes having Balghami (Phlegmatic) and Safrawi (Billious) temperament were randomly selected for this study. Of these 28

belonged to Balghami (Phlegmatic) temperament (12 males and 16 females) groups whereas 36 were from Safrawi group (22 males and 14 females) as shown in table No. 1.

The volunteers were also observed according to their age, height, weight and BMI. The mean and standard deviation of age, height, weight and BMI of both groups were calculated as shown in table No. 2. The Mean & S.D. of Age, Height and Weight of male and female volunteers were also observed as shown in table No. 3 & 4.

After assessment of temperament a fasting venous blood sample of 5 ml was drawn from which serum was separated and analyzed for cholesterol. For estimation of serum cholesterol one step method of Wybenga and Pileggi^[4, 5] was adopted. The serum cholesterol was estimated, the mean and standard deviation of Balghami (Phlegmatic) and Safrawi (Choleric) temperament volunteers were calculated it was found that the mean serum cholesterol level in Balghami volunteers was 160.96 with the standard deviation of 7.1 while the mean serum cholesterol level in Safrawi volunteers was 154.3 with the standard deviation of 7.4. The serum cholesterol level were also compared in male and female of Balghami and Safrawi volunteers and it was found that the mean serum cholesterol level in males of Balghami temperament volunteers was 176.03 with the standard deviation of 21.1, while the mean serum cholesterol level in males of Safrawi temperament volunteers was 158.5 with the standard deviation of 12.4, whereas the mean serum cholesterol level in females of Balghami temperament volunteers was 160.96 with the standard deviation of 7.1, while the mean serum cholesterol level in females of Safrawi temperament volunteers was 154.3 with the standard deviation of 7.4.

The independent t test was applied to test the significance of the result, it was found that the difference of serum cholesterol level in Balghami and Safrawi temperament volunteers was statistically significant at $p < .05$ (Table No. 5). The difference of serum cholesterol level in males and females of Balghami and Safrawi temperament volunteers was statistically significant at $p < .05$ (Table 6 & 7).

It can be concluded that the serum cholesterol level in healthy Balghami volunteers is higher than that of Safrawi volunteers.

CONCLUSION:

It was concluded that there was a significant difference at $p < .05$, in the serum cholesterol level of total volunteers as well as for male and female subjects in Balghami and Safrawi groups. The levels of serum Cholesterol were higher in the Balghami person as compared to Safrawi, but these results confirm the assumptions of Unani scholars like Ali Ibn-e-Abbas Majusi^[6] who considered fat is of cold temperament and Abu Sahel Masihi who said that the cause of fat is coldness^[7, 8]. We suggest that further extensive research on large sample size is required to analyze the relationship between serum cholesterol level and temperament.

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