Demographic Studies of Fart-e-Tadassum-Fid-Dam (Hyper-lipidaemia)

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Key words

Fart-e-Tadassum-fid-Dam, Hyperlipidaemia, Hypercholesterolaemia, Hyper-triglyceridaemia, Demographic studies

Abstract

Fart-e-Tadassum-fid-Dam (Hyper-lipidaemia) is not a single condition, but encompasses a wide range of disorders characterized by excess of fatty (lipid) substances in the blood due to metabolic derangement. The lipids include total serum cholesterol (TC), serum triglycerides (TG) and Lipoprotein (molecules of fat and cholesterol linked to protein). According to Harrison, raised fasting serum cholesterol and triglyceride levels from 4.5 mmol/dl (250 mg/dl) and according to Devidson's, raised levels of plasma cholesterol and triglyceride from 20 mmol/l is termed as Hyper-lipidaemia [1-2]

The increased level of one or more of these lipids i.e. Total cholesterol (TC), low density lipoprotein (LDL); serum cholesterol or triglyceride (TG) or both TC and TG and low level of high density lipoprotein (HDL) predispose cardiovascular ailment while raised serum level of HDL is inversely related and protect the heart against cardiovascular diseases.

The treatment of Hyper-lipidaemic state is to reduce the risk of atherosclerosis and cardiovascular disease through lowering blood lipid levels. It may be achieve by adopting certain measures: (i) by reducing the total fat intake, (ii) by eating a diet high in fruits and vegetables; (iii) by keeping alcohol consumption to no more than 1-2 standard drinks a day; (iv) by doing exercise 3 times a week for at 30 minutes at a time; (v) by stopping smoking and by managing stresses. Drug treatments applied, if diet, exercise and weight reduction have not adequately reduce the blood lipid levels. Commonly used lipid lowering agents in Allopathy are bile sequestrant resins (cholestyramine, colestipol), lovastatin, simvastatin, gemfibrozil and nicotinic acid. Unani system of Medicine also provides some herbo-animo-minerals that are in use as blood lipid level lowering/weight reducing agents since ancient times like Luk-e-Maghsool, Zeera Kirmani (Carum carvi), Karafs (Apium graveolens), Sandros, Limoon, Honey, Sirkah (Vinegar), Sikanjbeen (Venegar+ Honey), Dawaul Luk, and Safoof Mohazzil etc. The present deals with Age, Sex, Marital status, Religion, Occupation, Socio-economic status, Dietary habit, Exercise, Family history, Addiction, Temperament, and Obesity as demographic parameters.

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Introduction

Fart-e-Tadassum-fid-Dam (Hyper-lipidaemia) is not a single condition, but encompasses a wide range of disorders characterized by excess of fatty (lipid) substances in the blood due to metabolic derangement. The lipids include total serum cholesterol (TC), serum triglycerides(TG) and Lipoprotein (molecules of fat and cholesterol linked to protein).These lipoprotein are of five types: 1-Very Low Density Lipoprotein (VLDL), 2-Low Density Lipoprotein (LDL), 3-Intermediate Density Lipoprotein (IDL), 4-High Density Lipoprotein (HDL), 5-Chylomicrons (consist of triglyceride, cholesterol and protein)[1]. Scientifically raised level of chylomicrone and VLDL above the normal is known as Hyper-lipidaemia, raised level of serum triglyceride and serum cholesterol are known as Hyper-triglyceridaemia and Hyper-

cholesterolaemia respectively while the condition in which serum triglyceride and LDL level increases simultaneously above the normal level is called Combined Hyper-lipipdaemia. According to Harrison, raised fasting serum cholesterol and triglyceride levels from 4.5 mmol/dl (250 mg/dl) and according to Devidson's, raised levels of plasma cholesterol and triglyceride from 20 mmol/l is termed as Hyper-lipidaemia.[2]

The increased level of one or more of these lipids i.e. Total cholesterol (TC), low density lipoprotein (LDL); serum cholesterol or triglyceride (TG) or both TC and TG and low level of high density lipoprotein (HDL) predispose cardiovascular ailment while raised serum level of HDL is inversely related and protect the heart against cardiovascular diseases.

It is not a simple matter to define, what is a high, normal or low serum lipid level? because lipid levels in an individual vary from day to day and also varies with age, sex, ethnicity and country (e.g. average cholesterol levels in Japan are vary low compared with levels in the U.K i.e. two-third of people have a serum cholesterol level greater than 5.2 mmol/l. For men aged between 45 and 75 years, the median serum cholesterol is 6.2 mmol/l. For women aged 45-55 years, it is 6.1 mmol/l, and it is 6.8 mmol/l for women aged over 55 years [Durrington, 1995] but in respect of Indians, the normal level is regarded as 150-200 mg/dl due to their low socio-economic and nutritional status.

Clinically, it is of two types: Acquired hyper-lipidaemia and Familial hyper-lipidaemia. First is usually asymptomatic while second have a strong family history of early myocardial infarction, elevated and therapy resistant level of LDL in either or both parents, chest pain (angina) and may have xanthomas (Fleshed colored lesion caused by cholesterol deposit) or xanthelesmas (Cholesterol deposits on the eyelids) and obesity.[1,3-4]

The treatment of Hyper-lipidaemic state is to reduce the risk of atherosclerosis and cardiovascular disease through lowering blood lipid levels. It may be achieved by adopting certain measures: (i) by reducing the total fat intake to no more than 30% of total calories. 10% of saturated fats and no more than 300mg%(7.7 mmol) of dietary cholesterol a day; (ii) by eating a diet high in fruits and vegetables; (iii) by keeping alcohol consumption to no more than 1-2 standard drinks a day; (iv) by doing exercise 3 times a week for at 30 minutes at a time; (v) by stopping smoking and by managing stresses.[1-2]

Drug treatments applied, if diet, exercise and weight reduction have not adequately reduce the blood lipid levels. The type of drug used will depend on the type of lipoprotein elevated in the serum. Commonly used lipid lowering agents are bile sequestrant resins (cholestyramine, colestipol), lovastatin, simvastatin, gemfibrozil and nicotinic acid. Apart from the above, Unani system of Medicine also provides some herbo-animo-minerals that are in use as blood lipid level lowering/weight reducing agents since ancient times like Kawameekh, Luk-e-Maghsool, Zeera Kirmani (Carum carvi), Karafs (Apium graveolens), Sandros, Limoon, Zubdatul baher, Junteeyana Roomi, Sirkah (Vinegar), Sikanjbeen (Venegar+ Honey), Abkama, Dawaul Luk, and Safoof Mohazzil.[5-11]

Materials and Methods

The study was conducted on patients of Fart-e-Tadassum-fid-Dam (Hyper-lipidaeima) on demographic pattern in the Department of Moalejat, Ajmal Khan Tibbiya College, Aligarh Muslim University, Aligarh. Obese , Hypertensives, Atherosclerotics, patients having history of angina pectoris, palpitation, arthritis, dyspnoea, arcus cornea, xanhoma, xanthelesma and subjects having lipid level over 200mg/dl were selected for the study. Patients below 20 years of age, mentally ill, prisoners and suffering from other acute/chronic illness were excluded from the study. Parameters selected for the study were Age, Sex, Marital status, Religion, Occupation, Socio-economic status, Dietary habit, Exercise, Family history, Addiction, Temperament, and Obesity.[12-16]

Observations, Results and Discussion

Present study deals with 85 cases with reference to age. Among them 17 (20%) cases were in the age group of 21-30 years, 53 (62.35%) cases were in the age group of 31-40 years, 11 (12.95%) were in the age group of 41-

50 years and 4 (4.70%) cases were in the age group of 51-60 years [Table-1 & Fig-1]. As per the study, the highest incidence of Hyper-lipidaemia was observed in 31-40 years of age and lowest incidence of the disorder was found in 51-60 years of age. Because of non availability of data for prevalence of age in Hyper-lipidaemic patients, these observations are meaningful and it is suggested that a large size study shall be more meaningful.

According to sex, study sample size was 85 in which 27 (31.76%) patients were male and 58 (68.23%) patients were female [Table-1& Fig-2]. This study revealed that female is more prone to Hyper-lipidaemia as compared to their counterpart and it is because of female body constitution which contains more fat in the body than males. This observation correlates with the Harrison's statements.[1]

In context to marital status, the study sample size was 85, out of which 82 (96.47%) recorded cases were married and 3 (3.53%) cases were registered unmarried at A. K. Tibbiya College Hospital [Table-1 & Fig-3]. This data denote that married persons have high prevalence of the disorder probably because of luxury, gaiety life as compared to their counterparts on one hand and less number of unmarried patient attendance in the hospital on the other.[1]

According to religion, the study sample size was 85, out of it 67 (78.82%) cases belonged to Muslim community and 18 (21.18%) cases belonged to Hindu community [Table-1 & Fig-4]. Study revealed that Muslim community was found to be more affected and probably it was because of high intake of animal flesh which is a high risk factor to predispose Hyper-lipidaemia as mentioned by almost all medical men.[17-19]

In relation to occupation, the study sample size was 85, out of it 6 (7.08%) patients were students, 57 (67.00%) patients were house wives, 20 (23.54%) patients were employees and 2 (2.38%) patient was a daily worker [Table-1 & Fig-5]. This study also revealed that highest percentage of incidence was found in house wives and least in daily worker which suggests that sedentary workers or females have the tendency to develop Hyper-lipidaemia as compared to hard workers or males.[17-19]

In context to socio-economic status, the study sample size was 85, out of it 14 (14.11%) cases belonged to upper class status, 50 (58.89%) cases belonged to middle class status and 23 (27.00%) cases belonged to low socio-economic class of people [Table-1 & Fig-6]. This study does not corresponds with the statement of Ali bin Rabban Tabri (noted physician of his time) that Farhat (cheerfulness), Rahat & sarvat (comfort & delightfulness) and Ghina (dance, music and alcoholism) predisposes Saman-e-mufrat (obesity) or Ghilzat or Lazoojat wa Dasoomat-e-Dam[25] (Hyper-lipidaemia) which is the common feature of upper class people instead of middle/lower class. One cause of this finding may be attributed to high incidence of hyper-lipidaemia in middle class people because of their neglected attitude to words dietary habits specially balance diet.

According to physical activities, the study sample size was 85, out of it 62 (72.94%) patients have sedentary life style, 18 (21.17%) patients have moderate life style and 5 (5.88%) patients hard work [Table-1 & Fig-7]. The observed data seems to be directly proportional to the observations of Ali bin Rabban Tabri.[20]

Similarly out of 85 cases, 16 (18.82%) were vegetarian and rest of 69 (81.18%) cases were non-vegetarian [Table-1 & Fig-8]. These observations also confirm the findings of Ali bin Rabban Tabri and Harrison's that sedentary life and intake of saturated fatty diet leads to hyper-lipidaemia as the subjects body is unable to utilize it properly under these circumstances.[1,20]

In respect to personal habit and presence of family history of hyper-lipidaemia, out of 85 cases 32 (37.64%) cases were smoker and have positive family history while 53 (62.36%) cases were non-smoker and had no positive family history of hyper-lipidaemia respectively [Table-2 & Fig-9-10]. Even though smoking and positive family history are the risk factors for hyper-lipidaemia but present study revealed higher percentage of non-smokers and cases did not have positive history of hyper-lipidaemia, it is probably because of increase percentage of female cases i.e. (68.23%) and they were less cooperative for exploring family history in the study.

Regarding the use of oral contraceptives, out of 58 women, 35 (60.35%) had positive history

of use of oral contraceptives while 23 (39.65%) had negative history for the same [Table-2 & Fig-11]. Harrison had described that those females who use oral contraceptives are more prone to develop Hyper-lipidaemia/obesity. Our findings were also found to be in accordance with the same.

According to temperament, out of 85 cases, 70 (82.35%) cases were of Balghami (phlegmatic temperament), 11 (12.95%) cases were of Safravi (bilious temperament) and 4(4.70%) case was of Damvi (sanguineous temperament) [Table-2 & Fig-12]. Similarly, in another demographic event i.e. obese ness, 62 (72.94%) cases were obese and 23 (27.06%) cases were of normal built [Table-2 & Fig-13]. These observations showed that highest incidence was of Balghami temperament and obese cases and these findings are in accordance with the experiences of Ismail jurjani and Azam khan.[6,21]

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Table-1

Showing distribution of Age, Sex, Marital status, Religion, Occupation, Socio-economic status Physical Activities and Dietary habit distribution

	Number	Percentage		Number	Percentage
1. Age - n=85					
21-30 years	17	20.00	31-40 years	53	62.35
41-50 years	11	12.95	51-60 years	04	04.70
2. Sex - n=85					
Male	27	31.76	Female	58	68.23
3. Marital status - n=85					
Married	82	96.47	Unmarried	03	03.53
4. Religion - n=85					
Muslims	67	78.82	Hindus	18	21.18
5. Occupation - n=85					
Students	06	07.08	House wives	57	67.00
Employees	20	23.54	Daily workers	02	02.38
6 Socio-economic status - n=85					
Upper class	12	14.11	Middle class	50	58.89
Lower class	23	27.00	-	-	-
7. Physical Activities - n=85					
Sedentary worker	62	72.95	Moderate worker	18	21.17
Hard worker	05	05.88	-	-	-
8. Dietary habit - n=85					
Non-vegetarian	69	81.18	Vegetarian	16	18.82

Table-2

Showing distribution of Family history of hyper-lipidaemia, Addiction, Temperament and Obesity

	Number	Percentage		Number	Percentage
9. Family history of hyper-lipidaemia - n=85					
History Positive	32	37.64	History Negative	53	62.36
10. Addiction - n=85					
Smoker	32	37.64	Non smoker	53	62.36
11. H/o Oral contraceptive use - n=58					
History Positive	35	60.35	History negative	23	39.65
12. Temperament - n=85					
Phlegmatic	70	82.35	Bilious	11	12.95
Sanguinous	04	04.70	Melancholic	-	-
13. Obesity - n=85					
Obese	62	72.94	Normal built	23	27.06

Fig- 1

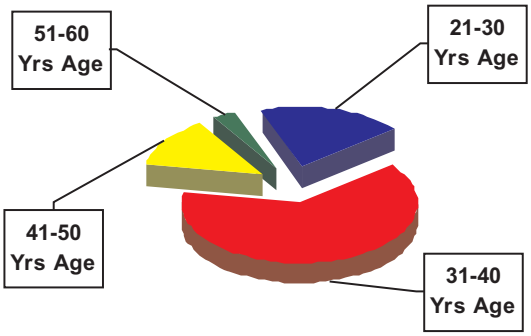

Fig- 2

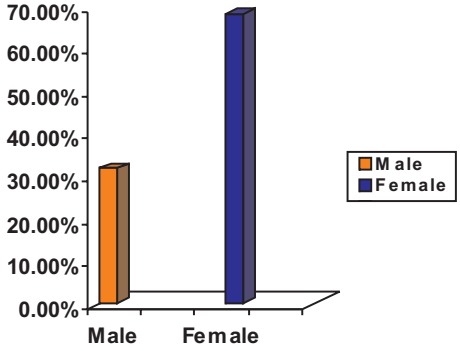

Fig- 3

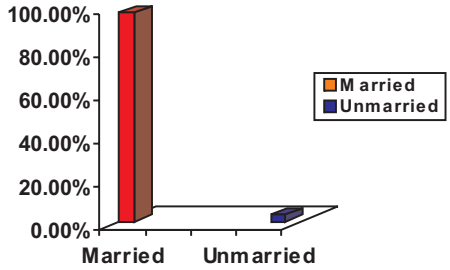

Fig- 4

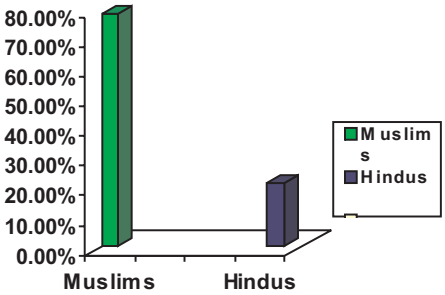

Fig- 5

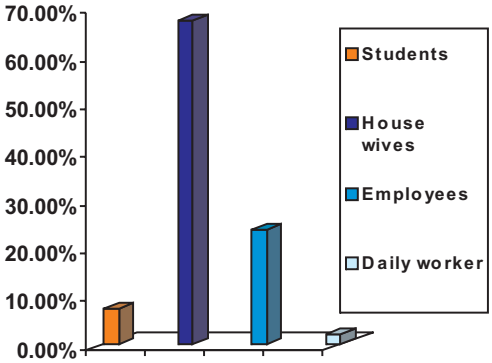

Fig- 6

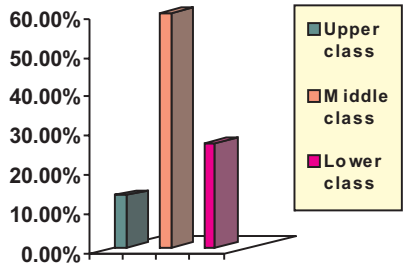

Fig- 7

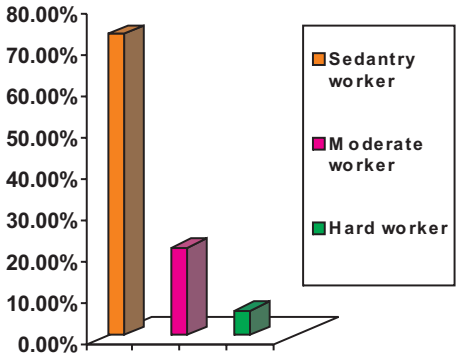

Fig- 8

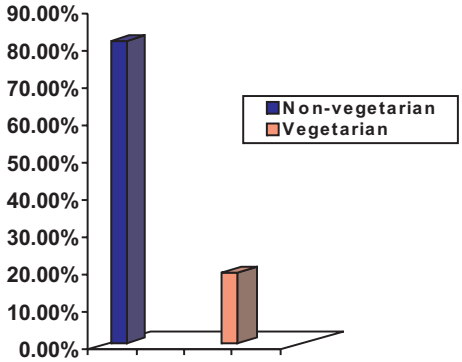

Fig- 9

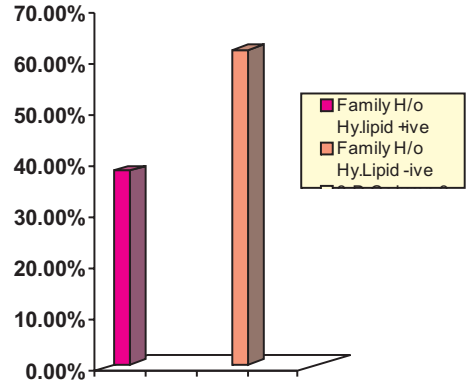

Fig- 10

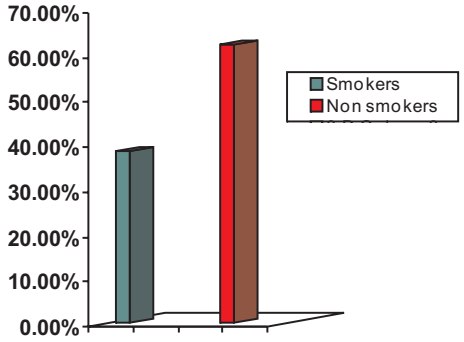

Fig- 11

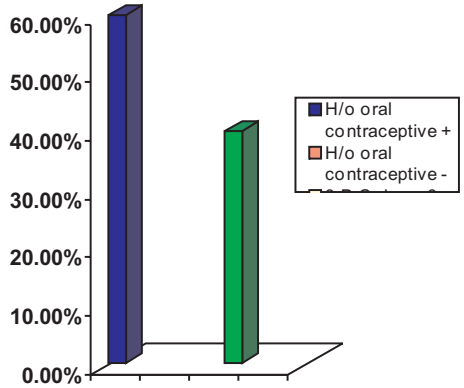

Fig- 12

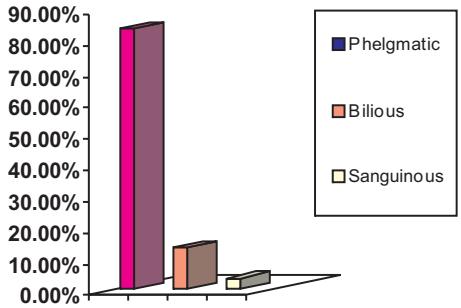

Fig- 13