Original Article

Prevalence of ischemic heart disease with respect to lifestyle changes in diagnostic patients of CAD

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ABSTRACT

A majority of the peoples in Indian cities depend on high fat diet, smoking, ghutka chewing and improper sleep, these all are lifestyle changes, can cause ischemic heart disease. Globally, ischemic heart disease (IHD) is the leading killer. Unani System of medicine not only provides well-based medical cures for diseases, but its holistic approaches as it possess unique principles of diet, lifestyle and particularly therapeutics, to balance and enrich all aspects of physiology and psyche. All diseases are the result of poor management of the six governing (or essential) factors, beyond the ability of physics or Tabiat to maintain and restore homeostasis. In this context, lifestyle diseases can be prevented by conscious changes to the person's diet, behavior and environment. The holistic approach of Unani medicine is well placed to cover the two main pillars of lifestyle diseases, namely, prevention and treatment. In this paper, we report on the prevalence of CAD in patients with known diagnosis of CAD and try to find out its relationship with different lifestyle changes.

Keywords: Lifestyle, Unani, Smoking, Diet Habit, Physical activity

INTRODUCTION

Globally, ischemic heart disease (IHD) is the leading killer (Goyal et al., 2006). Heart disease has already reached epidemic proportions in poorer countries. Of the 45.0 million adult deaths reported worldwide in 2002, three-quarters (32 million) were due to non-communicable diseases (Singh et al., 1997). Projections show that IHD has reached epidemic proportions in many developing countries. Asian Indians have considerably higher prevalence of premature coronary artery disease (CAD) and standardized mortality rates for CAD compared with Europeans, Chinese and Malays (Bulatao and Stephens 1992; Singh et al., 1997; Sharma et al., 2005). Within the Indian subcontinent, a dramatic increase in the prevalence of CAD has been predicted in the next 20 years due to rapid changes in demography and lifestyle consequent to economic development. In India, mortality attributable to CVD is expected to rise by 103% in men and by 90% in women from 1985 to 2015 (Bulatao and Stephens 1992; Stampfer et al., 2000; Sharma et al., 2005). More importantly, the disease catches Indians young. Therefore, to stop the ruthless assault of cardiovascular diseases in developing countries, there is an urgent need to represent the disease in the health agenda of these countries.

Much of the knowledge of risk factors for coronary artery disease (CAD) has been acquired from studies conducted in the Western population. It is widely believed that the association of these risk factors with CAD in other populations needs to be ascertained, and there is speculation that differences might range from the frequency of presence of classical risk factors to their total absence or irrelevance in these populations (Bulatao and Stephens 1992; Grundy et al., 1998; Premalatha et al., 2000; Mohan et al., 2001; Khot et al., 2003; Lee et al., 2003; Sharma et al., 2005). Therefore it is imperative to undertake large population-based, prospective studies in developing countries such as India to identify CAD risk factors, both conventional and novel. However, careful scrutiny of available scientific evidence for modifiable CAD risk factors like elevated serum total and low-density lipoprotein cholesterol[LDL-C], low high-density lipoprotein cholesterol [HDL-C], smoking, diabetes, hypertension, low level of physical activity, and obesity in this population may be helpful in formulating a more immediate CAD prevention strategy (Bulatao and Stephens 1992; Grundy et al., 1998; Premalatha et al., 2000; Stampfer et al., 2000; Yarnell et al., 2000; Mohan et al., 2001; Tanasescu et al., 2002; Khot et al., 2003; Lee et al., 2003; Sharma et.al., 2005).Unani System of medicine is a medical prospective based on the humoral theory postulated by Hippocrates. According to this theory, the health of a person depends on the equilibrium of four basic fluids (Akhlat) of the body i.e. via: blood, phlegm, yellow bile and black bile. Unani physicians have attributed the structural and functional deviations, by the six essential factors of life termed as Asbab-e- Sitta Zarooriya, i.e. environment; foods and drinks; rest and body functions; emotions and psychological rest; sleep and wakefulness and retention and excretion; and Asbab-e- Ghayr Zarooriyah (Non-essential factors) include habits, occupation, habitation and exposure to sunlight (Majoosi 1889; Ahmad 1980; Antaki 1998).

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possess unique principles of diet, lifestyle and particularly therapeutics, to balance and enrich all aspects of physiology and psyche (Majoosi 1889; Ahmad 1980; Sina 2007; Parray SA et al., 2012)

All diseases are the result of poor management of the six governing (or essential) factors, beyond the ability of physics or Tabiat to maintain and restore homeostasis. In this context, lifestyle diseases can be prevented by conscious changes to the person's diet, behavior and environment. The holistic approach of Unani medicine is well placed to cover the two main pillars of lifestyle diseases, namely, prevention and treatment (Majoosi 1889; Ahmad 1980; Antaki 1998; Sina 2007; Parray SA et al., 2012).

Indians, because of differences in diet, physical activity, body weight and lifestyle changes consequent to affluence and cultural changes consequent to migration are higher risk of CAD. In this paper, we report on the prevalence of CAD in patients with known diagnosis of CAD and try to find out its relationship with different lifestyle changes.

METHODOLOGY

Study design: The present study is an observational, cross sectional, clinical based survey undertaken to know the prevalence of ischemic heart disease with respect to lifestyle changes in diagnostic patients of CAD visiting Azam Heart clinic, Red hills in Hyderabad. The patients from both sex; and age more than 35 were included in the study. Children and mentally retarded patients and patients with congenital heart diseases were excluded from the study. The study was conducted for 12 months and the sample size was 100.

Method of collection of data: Cardiac patients were motivated to participate in the study with the help of cardiac consultant in OPD. After taking verbal consent data were collected in a semi structured, pre designed Proforma.

Instrument used in the data collection: The instruments used were stethoscope, mercury sphygmomanometer, measuring tape, weighing machine. All physical instruments were regularly standardized throughout the entire period of collection of data.

Proforma: A detailed questionnaire was used having necessary information regarding study. Questionnaire included the information regarding demographic profile, diet history, behavioural and lifestyle related risk factor of ischemic heart disease.

Measurements of study variables

Age and sex: Patient of either sex more than 35 years of age. Age was recorded to the nearest completed year. **Habitat:** All the subjects were enquired about their place. **Urban:** A person who is living in city since long time. **Rural:** A person who is living in village since long time. **Religion:** All the subjects were enquired about their religion and recorded as Muslims and Hindus. **Occupation:** All the subjects were questioned about their work. **Associated with which disease**: including hypertension, diabetic mellitus and thyroid disorders. **Family history of CAD:** All the subjects were questioned about family history of CAD. **Alcohol consumption:** The subjects were asked regarding their habits of Alcohol consumption. Yes/no if yes in daily / weekly pattern, especially **Table 1.**Parameters

being drinking and morning drinking. **Smoking:** The subjects were questioned regarding their smoking habits. Past smoker (left since at least one year)/ current smoker. **Tobacco chewing:** the subjects were questioned regarding their habits of using smokeless tobacco like chewing tobacco, chewing Guthka, betel, etc. **Exercise profile:** All subjects were questioned regarding their physical activities. Regular or irregular; **Regular:** Minimum physical activity of 15-20 minutes of moderate intensity 3 times per week like walking or hiking / jogging/ running/ playing/ swimming etc. **Diet History:** The subjects were questioned in detailed regarding their dietary habits. It include type of diet either they are vegetarian or non-vegetarian or mixed, type of oil used in cooking refined oil or unrefined or raw, they consume high fat diet like saturated fats or low fat diet like monounsaturated or polyunsaturated fats, Subjects were even enquired about high fat diet consumption of type of meat whether they consume more mutton, poultry, or fish etc. **Anthropometry:** Anthropometric measurements included height and weight measurements, and the body mass index (BMI) was calculated using the formula weight (kg)/height (m2). Waist and hip were measured using standard techniques, and the mean of two measurements was taken for calculating the waist-hip ratio (WHR). As per WHO guidelines, persons with BMI in between 18-25 were indicated normal weight and persons with BMI >25 indicated over weight respectively.

Statistical analysis

For the categorical lifestyle factors, such as smoking habit, physical exercise, diet history and the use of prescribed medicines, associated diseases with treatment history, and anthropometric calculations were taken as per protocol. Data was mainly summarized in the tabulated form with percentage.

RESULT AND DISCUSSION

Several recent studies have confirmed that Cardiovascular Diseases (CVD) has reached epidemic proportions in many developing countries. In fact, in India, as per studies of Bulato et al, the mortality attributable to CVD is expected to rise by 103% in men and by 90% in women from 1985 to 2015 (Bulatao and Stephens 1992; Stampfer et al., 2000; Sharma et al., 2005). Further, the data has shown that the disease catches young Indian. Therefore, to stop the ruthless assault of CVD in developing countries, there is an urgent need to represent the disease in the health agenda of these countries. The present study was envisaged to know the lifestyle changes in 100 randomly selected subjects of known and diagnostic CVD patients visiting Azam Heart clinic, Red hills in Hyderabad.

Among the study population out of 100 cases 56 (56%) were males and 44(44%) were females. This indicates that Ischemic Heart Disease is more common in males as compared to females. On the basis of occupation, men were 17(17%), 34(34%) and 05(05%) subjects were from Business, employee, and others; while as in women 39(39%) and 05(05%) subjects were from House wife, and others respectively. The reason behind higher prevalence in male patients may be due to eating of junk foods outside the home, high fat diet consumption, ghutka chewing, cigarette smoking and psychological stress at the place of work is more prevalent in males as compare to females. However, recent few studies have suggested that women are more prone to

S. No	Parameter	A	B
1.	**Marital Status**	Married (99)	Unmarried (01)
2.	**Sex distribution**	Male (56)	Female (44)
3.	**Age Distribution**	35-44 (12), 45-54 (27)	55-64 (29), 65-74 (22), 75-84 (08), 85-94 (02)
4.	**Religion**	Muslim (98)	Hindu (02)
5.	**Occupation**	Male: Business man (17), Employees (34), others (05)	Female: (39 House wife), others (05)
6.	**Diet**	Vegetarian (04)	Mixed (96)
7.	**Shift of Work**	Day shift (78)	Night Shift (22)
8.	**Type of work**	Sedentary work (78)	Moderate (42)
9.	**Type of sleep**	Adequate Sleep (70)	In adequate (30)
10.	**Family history of IHD**	Associated (47)	Not associated (53)
11.	**Type of exercise**	Moderate Exercise (22)	Not any Exercise (78)
12.	**Dietary Habits**	Alcohol (10), Smokers (20), Ghutka (4), Tobacco &Betal (39),	No Habits (20)
13.	**Consumption of Fat**	Saturated Fat (49)	Unsaturated (15), Mixed (36)
14.	**Type of oil**	Refined (96)	Unrefined (4)
15.	**BMI**	Male: <30 =45 (80.3%), >30= 11 (19.6%)	Female: <25= 11 (25%), >25=33 (75%)
16.	**Associated Diseases**	HTN (38), DM (10), HTN+DM (41), Thyroid Disorder (02)	Not Associated (09)

N= 100 (A+B), in bracket: number as well as percentage of patients in respective parameter

CHD than men(Goel et al., 2003; Yusuf et al., 2004; Sharma et al., 2005; Goyal et al., 2006; Shaw et al., 2009

On the basis of age group prevalence in the study population, highest was in the age group 55-64 years [29(29%)], followed by 45-54 years [27(27%)], 65-74 years [22(22%)], 35-44 years [12(12%)] respectively; and least in 85-94 years followed by 75-84 years [2 (2%)] and [8 (8%)] respectively.

There were 99(99%) subjects were married and 1(1%) was Unmarried respectively. On the basis of religion, there were 2(2%) subjects were from Hindu religion and 98(98%) subjects were from Muslim religion. This difference may be attributed to higher attendance of Muslim Patients in Azam Heart Clinic in Red Hills, Hyderabad.

Among the studied population (100 subjects), 38(38%) subjects were having history of HTN, 10(10%) subjects were having history of DM, 41(41%) subjects were having history of both HTN & DM, only 2(2%) subjects were having history of Thyroid disorders & 9(9%) subjects were have not associated with HTN,DM & Thyroid disorder. It is a certain fact from various studies that these associated diseases have a potent role in CAD (Kaul et al., 1986; Bulatao and Stephens 1992; Grundy et al., 1998; Stampfer et al., 2000; Van den Hoogen et al., 2000; Goel et al., 2003; Goyal et al., 2006; Shaw et al., 2009; Mathew et al., 2013).

Another important independent risk factor for CAD cases emerging out of Indian studies is family history of CAD (Kaul et al., 1986; Premalatha et al., 2000; Goel et al., 2003; Mathew et al., 2013). In our study, 47(47%) subjects were associated with family history and while as, 53(53%) subjects were with negative family history. Though addition of family history of CAD to other risk factors causes only a 1% increase in the highest population attributable risk (Yusuf et al., 2004) it must be emphasized that modifiable physiological variables such as blood pressure, serum cholesterol, and abdominal obesity are also partially under genetic control. As per Goel et al, the family history of CAD is emerging as the second most

important risk factor in young Indian patients (Goel et al., 2003; Sharma et al., 2005).

On the basis of different habits, physical exercise, type of work style and sleep pattern of the studied population, it shows a strong relation with the CAD. All these are potent lifestyle factors for the prevalence of CAD (Hu et al., 1997; Van den Hoogen et al., 2000; Yarnell et al., 2000; Tanasescu et al., 2002; Yusuf et al., 2004; Mathew et al., 2013). On the basis of habit, 10(10%) were consuming Alcohol, 20(20%) were smokers, 4(4%) were Ghutka consumers, 39(39%) were Tobacco and Betel chewers & 27(27%) were no habits. Similarly, in study population only 22(22%) subjects were doing regular exercise and 78(78%) were not doing exercise; 70(70%) subjects were adequate sleep and 30(30%) were inadequate sleep; 58(58%) subjects were having sedentary type of work and 42(42%) were physical type of work respectively. However, in the study population 78(78%) subjects were on day work and 22(22%) subjects were night shift. It indicates that more population was actively on greater risk, as all these factors have well known and potent role for the deadly disease especially the smoking, tobacco chewing and alcoholism respectively (Yarnell et al., 2000; Goel et al., 2003; Yusuf et al., 2004; Sharma et al., 2005; Goyal et al., 2006).

The studied population has been observed for a correlation with different dietary habits, psycho and social support from family as well. In the study population more number of subjects 96(96%) were on mixed diet; while as only 4(4%) subjects were vegetarian. Similarly, 96(96%) subjects were consuming refined oil and 4(4%) were consuming raw / unrefined oil. Further on the basis of nature of fat, 49(49%) subjects were consuming high fat diet (i.e. saturated); 15(15%) subjects were consumed low fat diet (i.e. unsaturated); while as, 36(36%) subjects were consumed both saturated and unsaturated diet respectively. Further, on the basis of psycho-analysis and support from social point of view, 36(36%) subjects were affected from depression, 20(20%) subjects were show lack of

social/family support, and 44(44%) subject's affected from stress. BMI of the study population in Male (56) shows less than 30 in 45(i.e. 80.3%) subjects and greater than 30 in 11(i.e. 19.6%) subjects; while as in 44 females, BMI less than 25 in 11(i.e. 25%) subjects and greater than 25 in 33(i.e.75%) respectively.

Several studies have shown a significant positive association between saturated fat and disease; while as inverse association between polyunsaturated-fat intake and the risk of disease has been found by different studies (Hu et al., 1997; Singh et al., 1997; Premalatha et al., 2000; Van den Hoogen et al., 2000; Yarnell et al., 2000; Tanasescu et al., 2002; Yusuf et al., 2004).

CONCLUSION

Unani physicians have attributed the structural and functional deviations, resulting environmental factors called as Asbab-e-Sitta Zarooriyah (Six essential factors) and Asbab-e- Ghayr Zarooriyah (Non-essential factors) to which human beings are continuously exposed. In fact, the lifestyle changing factors have shown a potent role in developing diseases like Ischemic heart diseases as well. It is need of time, to slow the prevalence of CVD cases in countries like India, particularly among the working-age population. In this aspect, the major initiatives needed to combat CVD, includes; promotion of diet and physical activity, generation of awareness among both sexes, or development of guidelines for risk factors especially for smoking, alcoholism etc. and the therapeutic strategies.

The major risk factors which increase the likelihood for developing CHD, includes obesity, physical inactivity, family history of premature CHD. So, to reduce the risk of CHD among the high risk population, it may concluded that a multifactorial approach offers the best opportunity for (1) saving patients at high risk and (2) preventing development of high-risk status in the first place.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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