

Risk of Ischemic Heart Disease in Young Adults

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ABSTRACT

Aim: To determine the clinical features and risk of ischemic heart disease among young adults, specifically in the division of severity of ischemic heart diseases.

Methods: We gathered clinical and demographic data prospectively from Punjab institute of cardiology. A total of 1100 patients with ischemic heart disease are selected with age of 18- 34 years old from March 2016 to April 2017. Patient with Ischemic heart disease (n=1100, 34±18 years). All the patients fall in inclusion criteria completed the consistent questionnaire with different variables and tested in multivariate regression analysis. The main risk factors were measured in ischemic heart disease events followed by myocardial infarction, angina followed by revascularization, cardiac arrest and death factors.

Results: Total patients with ischemic heart disease are 1100, whose data have been sorting out (mean age 24 years, 56% women and 44% are men. By classification 48 % were suffering from mild, 35% from moderate and 17% from severe ischemic heart disease. The huge majority of ischemic heart disease patients (70%) were unaware of their disease at the beginning. Many symptomatic patients were also suffering from some adjacent diseases. Few patients also undergo as a minimal surgical procedure, while 79% were under medication treatment including anticoagulants, nitroglycerin, aspirin, beta-blockers and cholesterol-modifying medications.

Conclusion: In developing countries highly increased number in patients with ischemic heart disease is at dangerous level leading towards high rate of heart failure. It is due to sedentary life style and decreasing attitude of society towards active physical activities.

Keywords: Ischemic heart disease, adults

INTRODUCTION

In recent decade, Adult population with ischemic heart disease has increased abruptly, with most of patients from middle age. Due to this factor medical system use increased for routine and periodic time duration¹. The expected progression of ischemic heart disease symptoms and sequence of any past intervention must be treated without any further delay to reduce the complications². Ischemic heart disease include a wide range of clinical presentation. There are many patients who are diagnosed for the first time in adulthood. It going to be more complications if not treated accordingly. The addition of ischemic heart disease may lead to symptoms such as disability to exercise intolerance as asymptomatic patients. Most of the time cardiologist faces the challenge to sort out the relative part to symptoms in ischemic heart disease³.

Risk of ischemic heart disease in elder age group are predefined by many researchers and authors but in adult age group it is not define properly yet. However, there is many evidences

available regarding this that the risk of ischemic heart diseases are almost same as in elder age group⁴.

The perception of such risk factors is critical for the prevention of morbidities and mortality due to ischemic heart disease. Risk factor are classified in many categories, few of them are conventional risk factors, modifiable risk factors and non-traditional risk factors⁵.

Conventional risk factors are age, race, family history are prominent. In south Asians and African Americans people are predominantly reported with ischemic heart disease in young age⁶.

Modifiable risk factors including:

- High blood cholesterol level (Specially, low-density lipoprotein cholesterol [LDL-C])
- Smoking (Stop of cigarette smoking represent the single important preventive risk of ischemic heart disease)
- High blood pressure
- Obesity
- Lack of Exercises / Physical activity
- Diabetes mellitus
- Mental stress and depression.
- Non-Traditional or Novel risk factors:
- Lipoprotein
- C-reactive protein (CRP): High levels are related to the presence of inflammation.

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- Dense LDL-C particles, Small.
- Fibrinogen

Several other risk factors which are End-stage renal disease, chronic inflammatory disease affecting connective tissues, Human Immunodeficiency virus(HIV), Xanthelasmata, tissue plasminogen activator, Low serum testosterone level and Lack of sleep⁷.

METHODOLOGY

We sort out different variables with the percentage of population with less than 10.1% in 50 cardiac issue patients. In 1100 patients, clinical follow up was recommended for all the patients. Patients with only angina diagnosis were not included in this study.

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Most of the patients are fall in ischemic heart disease due to variation in modifiable risk factors, especially high cholesterol level, Obesity, blood pressure and decreased physical activity. The main risk factors were measured in ischemic heart disease events followed by myocardial infarction, angina followed by revascularization, cardiac arrest and death factors. Seven different variables were selected, high cholesterol level, Obesity, blood pressure, physical activity, diet, mental stress and C-reactive protein. Data were analyze independently and asses all the influencing affects of risks on ischemic heart disease.

RESULTS

Every patient, when selected was suppose to be explain their habits of eating and way of living. it is noted that the patients with high eating habits of oily things are more prone to develop ischemic heart disease in adult age.

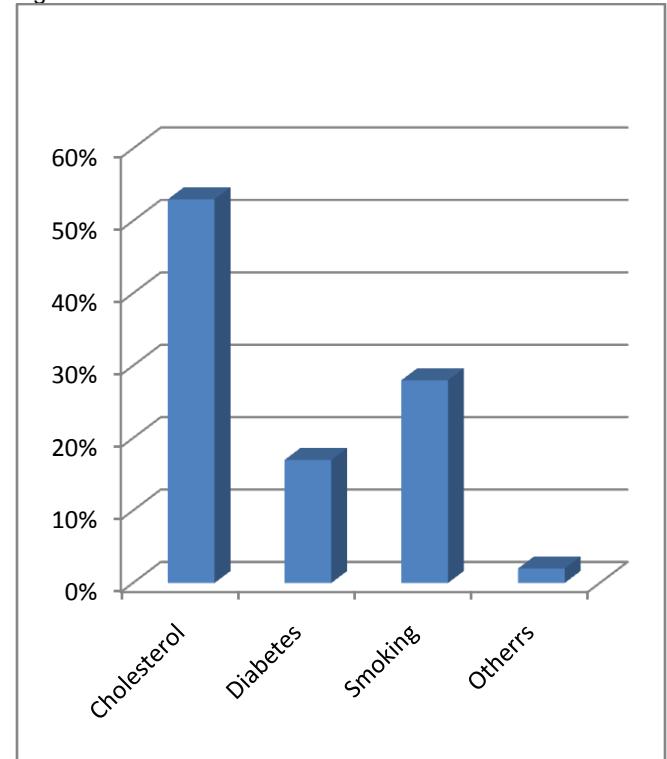
Total patients with ischemic heart disease are 1100, whose data have been sorting out (mean age 24 years, 56% women and 44% are men. By classification 48% were suffering from mild, 35% from moderate and 17% from severe ischemic heart disease. The huge majority of ischemic heart disease patients (70%) were unaware of their disease at the beginning. Many symptomatic patients were also suffering from some adjacent diseases. Diet with high oily ingredients and less physical activity were found

to be major causing factor of ischemic heart disease in adult age group. Few patients also undergo as a minimal surgical procedure, while 79% were under medication treatment including anticoagulants, nitroglycerin, aspirin, beta-blockers and cholesterol-modifying medications.

Table:1 Different variables Risk Factor presentation.

| | Male | | Female | |
|-------------------------------|---------------|-----------|---------------|-----------|
| | Relative risk | CI 95% | Relative risk | CI 95% |
| Age | 1.02+ | 1.03-1.05 | 1.03+ | 1.02-1.04 |
| Blood Pressure | | | | |
| Normal | 1.5 | Reference | 1.5 | Reference |
| High Normal | 1.73 | 1.4-1.87 | 1.62 | 1.3-1.76 |
| Hypertension Stage 1 | 1.98 + | 1.5-2.3 | 1.94+ | 1.4-2.1 |
| Hypertension Stage 2 | 2.21 + | 1.1-2.6 | 2.3+ | 1.6-2.5 |
| Smoking (y/n) | 1.92+ | 1.46-2.56 | 1.53+ | 1.24-2.43 |
| Diabetes (y/n) | 1.57 | 1.03-2.62 | 1.9 | 1.52-2.70 |
| Cholesterol LDL ,mg/dL | | | | |
| <125 | 1.4 | Reference | 1.4 | Reference |
| 125-145 | 1.72 | 0.81-2.13 | 1.83 | 1.17-2.03 |
| >145 | 2.38+ | 1.63-2.45 | 2.23+ | 1.75-2.32 |
| Cholesterol HDL ,mg/dL | | | | |
| <30 | 1.2 | Reference | 1.2 | Reference |
| 30-45 | 1.63 | 1.49-1.96 | 1.42 | 1.23-1.74 |
| >45 | 1.35 | 1.27-1.83 | 1.59 | 1.26-1.95 |

Fig. 1: Risks



DISSUSION

For the very first time, we are able to know that there is strong relationship with anxiety and depression in developing ischemic heart disease in young adults. Our research identifies that the age group from 22-28 years were more sensitive towards their responsibilities and work environment in office⁸. If all this is not suitable according to their choice and personality then they are diverted towards the factors leading to anxiety and depression development. As in depression they are more likely to gain body weight abruptly due to disturbance in mood. They ultimately turn towards the development of ischemic heart disease in young age⁹.

A clinically major finding was sleep disturbance, which may lead towards increasing the habit of eating, as in adult age group obesity is a major cause of developing ischemic heart disease¹⁰. Increasing trend of eating fast food is also a major disturbing cause of developing obesity in adult age group¹¹. This observation enhances many points regarding the limiting of physical activity, which is also becoming the major risk factor in young adults developing ischemic heart disease. Therefore, strategies to avoid in developing ischemic heart disease in adult age group should also focus on increasing physical activities of daily living¹².

Semsarian C et al concluded that the unexplained risk factor in ischemic heart disease are playing a major role in increasing the fatal effects and patients with adult age group. Establishing the clear role of modifiable risk factors, patients with adult age can be better treated with ischemic heart disease¹³. All the guidance and prevention regarding ischemic heart disease should be spread in society, in order to maintain the young adult population healthy as they can play a better role in developing society¹⁴.

In current study, the clinical follow up of patients were taken randomly and it feels that the modifiable risk factor of ischemic heart disease are becoming more dangerous in adult age group. All these risk factors can be prevented by psychological counseling of patients and through proper diet plan by nutrition. Most of the modifiable risk factors of ischemic heart disease can be prevented simply by changing the living environment of patient¹⁵.

In this study, there are many limitations. First, although all the available sources are used to take data of patients but this study is only applicable on few regions of Punjab as most of the patients are from urban areas of the province. Few cases cannot be enrolled because of insufficient demographic data. Second, many methodological approaches were used during the study but cannot represent all the risk factors

individually. Finally, the scope of this study cannot be applied all over the world¹⁶.

CONCLUSION

It is concluded that increasing risk of ischemic heart disease in adults can be modifiable by following medication and by changing habits of lifestyles. In developing countries highly increased number in patients with ischemic heart disease is at a dangerous level leading towards high rate of heart failure. It is due to sedentary life style and decreasing attitude of society towards less physical activities in activity of daily life.

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