Study on the Incidences of Atrial Fibrillation in Acute Coronary Syndrome Patients in Eastern Afghanistan

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Abstract

Aim: Atrial fibrillation (AF) is one of the irregular and exceptionally fast heart rhythmic problems that can maintain blood clots in the heart. Therefore, AF increase the risk of stroke, heart dysfunction, and heart attack risks. The main objective of this study was to evaluate incidences of Atrial Fibrillation in Acute Coronary Syndrome in Eastern zone of Afghanistan.

Methods: This cohort study recruited 828 consecutive patients and anamnnesia was achieved during the data collection.

Results: Atrial fibrillation increased with age in both men and women. Women with AF 57.14% (n = 16) were higher than men 42.86% (n = 12) with higher significance (p<0.05) value. Accordingly, the incidences of atrial fibrillation are higher in upper aged patients. In this regard incidences of lower than 30 years aged patients are zero, 31 to 45 years aged are 2(7.14%), 46-60 years aged patients are 12(42.85%), 61-75 upper aged patients are 10(35.71%) and upper than 75 years aged patients are 4(14.28%) and the studied result was higher significance (p<0.05).

Conclusion: Poor nourishments, long term rests, tobacco usages, serum lipid hyper level, hypertensions, obesity and diabetes are the main causes of atrial fibrillation in Afghanistan.

Recommendation: The upper aged people must use quality food; unsaturated oil and less sugar in their meal and must do exercise at least one to two hours daily.

Keywords: Atrial fibrillation, myocardial infarction, sex, cardio-vascular, coronary artery, age
INTRODUCTION

Atrial fibrillation (AF) is an abnormal, irregular, and exceedingly fast heart rhythmic problem (arrhythmia) that can support blood clots in the heart. Therefore, AF support and increase the risk of stroke, heart failure, and related heart problems (Torpy et al., 2009). There are many factors which are involved in cardio-vascular diseases and are known as cardio-vascular risk factors (Hubacek et al., 2017). Cardiovascular risk factors are globally universal and include old age, high blood pressure, socio-demographical condition, poorness, parents history of the mentioned coronary heart disease, smoking and tobacco increments, alcohol drinking percentage, blood lipid level, physical performances and much rest, obesity, diabetes and poor nutrition (nezhad et al., 2016; Torpy et al., 2009). The other major cardio-vascular risk factors are hypertension, diabetes mellitus, and dyslipidemia (Hubacek et al., 2017).

Atrial fibrillation is a form of arrhythmia and kind of structural heart problems in peoples, and its incidences are increased in upper aged persons (Feinberg et al., 1995; Tsang et al., 2005). The data which are collected from various studies that had shown Atrial Fibrillation is associated with higher mortality and morbidity rate specially in upper aged persons (Benjamin et al., 1998; Miyasaka et al., 2007).

Most studies results have shown that both type 1 and type 2 myocardial infarctions individually are associated with a cardiovascular mortality rate (Gaggin et al., 2017; Kidd et al., 2016). The risk mortality rate was very high in male and female patients who were faced with Type 2 myocardial infarction but in some, it appeared higher in patients having type 1 myocardial infarction. Although some are giving opposite trends against type 2 but had trusted on fewer type 2 myocardial infarction events (Kidd et al., 2016). The researchers estimated that 40% of patients who had passed STEMI (ST-elevation myocardial infarction), those facing multi-vessel disease at index angiography (Joel et al., 1990; Jameset al., 2000). Regarding patients who faced with multi-vessel disease and compare to patients having single-vessel coronary artery disease, those with more co-morbidities, cardiovascular problems, higher prevalence of left ventricular dysfunction are late poor in-hospital outcomes (Chieh et al., 2019).

One key factor is older and upper age which is the main point for the increment risk of cerebral hemorrhage, especially the women those are older than seventy-five years, second factor is embolic strokes which are very higher in elderly aged women and having to face with an increased risk of ventricular thrombus and cardiac strokes. The last factor is gender and age which are have most significant effect on cardiac rupture associations after myocardial infarction (Soumerai et al., 2002; Gurwitz et al., 1998& Slater et al., 2000).

The most common risk factors which have been associated with atrial fibrillation are diabetes, hypertension, vascular diseases, apnea, angina, cardiac dysfunction and MI (Benjamin et al., 1994). Atrial fibrillation is more complicated in older MI patients such as those who are over 70 years and medium in 59 years aged patients (Behar et al., 1992). Afghanistan is a country where the people use poor food, particularly they like to eat much fried meat, potatoes, eggs, etc… and drink tea with higher sugar. Also Afghani people use higher amount salt, and cattle fats, butter, milk cream, ghee and much saturated fat in their nourishments. In addition, the people of Afghanistan do not like exercises and they use much tobacco. Due to these mentioned problems, obesity, higher blood pressure, blood cholesterol and try-glycerol’s, diabetes and heart problems are common in Afghanistan (Weqar et al., 2021; Weqar et al., 2020).

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Objectives of the Study

Aim of this study was to evaluate risk factors and incidences of Atrial Fibrillation in Acute Coronary Syndrome patients in Eastern zone of Afghanistan.

MATERIAL AND METHODS

Total population of the present cohort study was 828 patients presenting for treatment of AF at Afghan Momand Medical complex and research center from 10/09/2022 to 10/03/2023. Patient’s demographics and medical anamnesis was achieved during the data collection. Atrial fibrillation entry as defined by the ECG were used according to the guide of (January et al., 2014). Sampling were nonrandomized consecutive trial and target population was categorized by male and female and five various aged groups such as below 30 years, 31 to 45 years, 46 to 60 years, 61 to 75 and above 75 years. Statistical analysis was performed using SPSS statistical software version 17.0 and SPSS-Chi square test was used to test statistical significance for continuous variables. P-values of less than 0.05 were considered statistically significant.

RESULTS

From total of 828 patients, 481 (58.1%) were male and 347(41.9%) were female, and the mean age of the patients were 45 (30-90) years. During this study atrial fibrillation was identified totally in 28 patients. Atrial fibrillation incidence percentage was higher in female patients which was 16 (57.14%) while occurrences in male were 12 (42.86%) with higher significance (p<0.05) value. Accordingly, the incidences of atrial fibrillation are higher in upper aged patients. In this regard incidences in patients aged lower than 30 year were zero, 2(7.14%) in patients aged 31-45 years, 12 (42.85%) in patients aged 46-60 years, 10 (35.71%) in patients aged 61-75 years, and 4(14.28%) in patients aged more than 75 years. In regards to age factor, the results had higher significance (p<0.05). During the taking of anamnesis, there were many people who do not eat quality food and used much fried food, saturated ghee, butter, cream, sugars, salts. Also, the people like to rest and use tobacco as entertainment. The summary of the results is presented in table 1 and table 2.

Table 1: Incidences percentage of atrial fibrillation in male and female patients

<table>
<thead>
<tr>
<th>Gender</th>
<th>Valid</th>
<th>Frequency</th>
<th>Percent%</th>
<th>Valid percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>No</td>
<td>469</td>
<td>97.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>12</td>
<td>2.5</td>
<td>42.86</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>481</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>No</td>
<td>331</td>
<td>95.4</td>
<td>57.14</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>16</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>347</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
Fig 1: Significance (p<0.05) of AF incidences percentage in male and female patients.

Table 2: Incidences percentage of atrial fibrillation in various aged patients

<table>
<thead>
<tr>
<th>Patents’ age</th>
<th>Number of Patients</th>
<th>AF positive Incidences</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower than 30 years</td>
<td>20</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>31-45 years</td>
<td>136</td>
<td>2</td>
<td>138</td>
</tr>
<tr>
<td>46-60 years</td>
<td>412</td>
<td>12</td>
<td>424</td>
</tr>
<tr>
<td>61-75 years</td>
<td>186</td>
<td>10</td>
<td>196</td>
</tr>
<tr>
<td>Upper than 75 years</td>
<td>46</td>
<td>4</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>800</strong></td>
<td><strong>28</strong></td>
<td><strong>828</strong></td>
</tr>
</tbody>
</table>

Fig 2: Significance (p<0.05) of AF incidences percentage in various aged patients.
DISCUSSION

The incidences of AF in acute coronary syndrome patients at Chinese hospitals are ranged from 6.7% to 13.4% (Zhang et al., 2020; Wang et al., 2019). But the present study result which is carried out at Afghan Mommand Medical complex had less than the result of Chinese hospitals. A study which is completed by (Na Wu et al., 2023) had found incidences of the AF 8.21% and 6.12% in its study. Also, the present study Incidences of AF is less than Na Wu et al study.

Age is one of the independent risk factors for AF. Incidences of AF are doubling in every ten year ages increments (Benjamin et al., 1994). Some other studies also shown that, age is one of the independent risk factor for AF in acute coronary syndrome patients (Karatas et al., 2016; Mazzone et al., 2018). The present study result is also higher in upper aged patients which is similar to Benjamin et al and Karatas et al. In a study completed at national institute of cardiology the overall AF was documented in 360 (5.4%) of the patients with acute coronary syndrome (González et al., 2015). The present study over all incidences is 28(3.38%) which is less than González et al’s.

The prospective study including 600 patients was carried out in Coronary Care Unit (CCU) Department of Cardiology Clinical Center of Montenegro. During the hospital period they had shown over all incidences of AF in 48 (8%) patients. From these percentage, 69.9% incidences occurred in upper aged patients and also there were 32(66.7%) AF positive cases in male and 16(33.3%) in female (Vukmirović et al., 2017). So, the present study overall percentage of AF incidences are less and AF upper aged patients’ percentage are near to Vukmirović et al’s study result but the present study AF incidences result in gender (male and female) is less close to them.

A cohort study was conducted at Dhaka medical college and hospital, where 100 patients (male=73, female=27) were diagnosed with of ACS and AF. During this study most of the patients were in to 51-60 age group (53%) were positive (Shamim et al., 2019). This current study incidences of 46-60 years aged patients’ results were similar to Shamim et al’s. Finally, this study found AF in acute coronary syndrome patients higher in upper aged peoples and according to gender AF is higher in female patients than male.

CONCLUSION

This study demonstrated that AF is common in both male and female patients but higher in female than male and strongest predictor of AF develop during the hospital period was older age. AF incidences are higher between the age of 46-60 and 61 to 75 years. In addition, poor nourishments, tobacco usage, exercise avoidance, much sugar, salt and lipid feeding and hypertensions are the main causes of such kind of problems.

RECOMMENDATION

Others researchers should investigate the incidences of myocardial infarctions and its causes in eastern zone of Afghanistan.

Acknowledgment

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Conflict of Interest

The authors express no conflict of interest in any part of the research.

REFERENCES


