

# A study of cardiovascular profile in patients suffering from first episode psychosis at a tertiary health care centre

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## Abstract

**Background:** First episode psychosis have a significant effect on the patient and family. Psychosis is a combination of hallucinations, delusions, disorganized thinking or behaviour, negative or catatonic symptoms, and functional impairment. Various co morbidities are associated with psychosis. Cardiovascular diseases contribute to major part of mortality in psychosis. Present study is conducted to study the cardiovascular profile of patients of first episode of psychosis. **Aim and objective:** To study the cardiovascular profile in patients suffering from first episode psychosis at a tertiary health care centre **Methodology:** Total 100 patients were studied in a psychiatric OPD of tertiary health care centre. Patients diagnosed with first episode psychosis were studied. Data collected with pre tested questionnaire. Sociodemographic data, clinical examination were recorded. For cardiovascular profile BMI, waist circumference, blood pressure, fasting sugar level, serum lipids were recorded. Data analysed with appropriate statistical tests. **Results and discussion:** Mean age of the patient was  $45.3 \pm 4.9$  years. Male to female ratio was 4.5:1. In our study most commonly observed cardiovascular risk factor was dyslipidemia. 39% patients had raised serum triglyceride and 42% patients had lower HDL levels. Increased Waist circumference was observed in 38% patients.

**Key Word:** cardiovascular profile.

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## INTRODUCTION

Psychosis involves disturbances in thought, senses and perception, emotion, and behavior.<sup>1</sup> Psychotic disorders include schizophrenia, schizoaffective disorders, schizotypal disorders and delusional disorders. According to the International Classification of Diseases, 10th

Revision (World Health Organisation, 1992) schizophrenia is symptoms of hallucinations, delusions, disorganised speech, thought or behaviour, and 'negative symptoms' including social withdrawal and reduction in volition.<sup>2</sup> Psychosis illness strikes in the prime of life, during late adolescence and early adulthood. Majority of the patients recover from the initial episode but many of the patients have recurrences. In most of the patients illness lead to emotional distress, social isolation, poor social adjustment, disrupted family relationships, functional disability and stigmatization. Mortality in these patients is mainly due to injuries suicide and cardiovascular diseases. Many of the previous studies shown a large contribution of cardiovascular diseases in mortality among these patients.<sup>3,4</sup> In a study by Osborn *et al* patients with schizophrenia were compared with controls showed that patients have 3-fold increase in cardiovascular mortality between the ages of 18 and 49

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and almost a 2-fold increase in mortality between the ages of 50 and 75 years.<sup>5</sup> Incidence of myocardial infarction was most common in these patients when compared with normal controls.<sup>6</sup> This study was conducted to see the cardiovascular profile of patients of first episode psychosis at a tertiary health care centre.

## AIM and OBJECTIVE

To study the cardiovascular profile in patients suffering from first episode psychosis at a tertiary health care centre

## MATERIAL and METHODS

Present study is a prospective study carried out in patients with first episode of psychosis. Study was carried out at a tertiary health care centre. Total 100 patients attending psychiatry OPD and diagnosed as first episode psychosis were studied.

### Inclusion criteria

1. Patients diagnosed with first episode psychosis (Schizophrenia, schizotypal and delusional disorders and Mood disorders)
2. Patients above 12 years of age.

### Exclusion Criteria

1. Patients below 12 years.
2. Patients not willing to participate in the study.
3. Patients suffering from organic brain syndromes, dementia, delirium, mental retardation, substance induced psychotic disorders, withdrawal states and intoxication of various chemicals, dissociative disorders, malingering and neurological disorders. Study was approved by Institutional ethical committee.

A valid written consent was taken from the patient or caregiver after explaining study to them. Data was collected with pre tested questionnaire. Data included sociodemographic characteristics such as age, sex. Detailed history of the patient was taken. Through clinical examination was done by the principal investigator. Diagnosis was done by principal investigator according to ICD 10 –Classification of Mental Behavioral Disorder Diagnostic Criteria For Schizophrenia ,schizotypal and delusional disorders F20—F29 and Mood (affective ) disorders F30—F39.<sup>2</sup> Cardiovascular profile included clinical examination, investigations like CBC, blood glucose level , lipid profile ,etc. Weight was taken with calibrated weighing machine. Waist circumference was measured in centimeters (cm), at a point midway between the inferior costal margin and the superior iliac crest, at the end of the normal expiration while standing. Blood pressure was measured in supine position. Average of two

reading was taken If BP was found to be high ( $\geq 140/90$ ) then a third reading after 30 min was obtained. Fasting venous blood sample was collected under aseptic condition to estimate fasting blood sugar, triglycerides (TGA) and high-density lipoprotein (HDL). Data was analysed with appropriate statistical tests.

## RESULTS

Table 1 shows distribution of patients according to age and sex. Majority of the patients were in the age group of 19-64 years (74%). Elderly patients were 5% .none of the female patient was above 65 years. Age group of 12-18 years included 21 % patients. out of total 100 patients 82 were male and 18 were female. Table 2 shows distribution of patients according to habits. Addiction is more commonly seen in males (72 out of 82). Most commonly observed addiction was alcohol (51%) followed by tobacco (40%). Opioid addiction was seen in 6% patients while sleeping pill addiction was seen in 7% patients. Sleeping pill addiction was seen more commonly in females (2 out of 18). Table 3 shows mean value of cardiovascular profile variables. Mean weight of the patient was  $68.23 \pm 3.54$  kg. Weight of patient ranged from 46-91 kg. Mean BMI (body mass index) was  $25.04 \pm 1.41$  kg/m<sup>2</sup>. Mean waist circumference of the patient was  $86.21 \pm 5.32$  cm. Mean systolic blood pressure of the patients was  $128.6 \pm 21.9$  mm/Hg. Mean diastolic pressure of the patient was  $92 \pm 9.53$  mm/Hg. Mean fasting blood sugar was  $97.46 \pm 19.5$  mg/dl. Mean total cholesterol of the patients was  $173.32 \pm 27.51$  mg/dl while mean serum triglyceride and mean serum HDL were  $154.92 \pm 23.75$  mg/dl and  $45.82 \pm 5.8$  mg/dl respectively. Table 4 shows distribution of patients of first episode of psychosis according to cardiovascular profile variables. Variables with risk of cardiovascular disease were age in males above 40 years and age above 50 years in females. Total 22 patients were having age above the criteria. Out of total 100 patients 27% patients were having BMI above 25 kg/m<sup>2</sup>. Cut off point considered is standard value for Asian patients. waist circumference in 38% patients was more than the criteria . Systolic blood pressure above 130mm of HG was seen in 25% patients. 17% patients showed diastolic blood pressure above 85 mm of Hg. Abnormal blood pressure ( $>130/>85$  mm of Hg) is seen in 21 patients. out of these 21 patients 11 were diagnosed hypertensive and taking the treatment. Patients with fasting blood sugar above 100mg/dl and diagnosed Diabetes Mellitus were 19. Raised serum triglyceride ( $>150$  mg/dl) was seen in 39 patients while HDL was more than the risk factor criteria in 42 patients.

**Table 1:** Distribution of patients of first episode of psychosis according to age and sex

Sr No	Age Group (Years)	Male	Female
1	12-18	17	04
2	19-64	60	14
3	>65	05	00
4	Total	82	18

**Table 2:** Distribution Of Patients Of First Episode Of Psychosis According To Addiction And Sex

SrNo	Addiction	Male	Female
1	Alcohol	46	05
2	Tobacco (smoking)	38	02
3	Opioids	04	02
4	Sleeping Pills	05	02
5	No Addiction	10	07

**Table 3:** Cardiovascular Profile Variables In Patients Of First Episode Of Psychosis

Variables	Mean Value
Weight (Kg)	68.23± 3.54
BMI (Kg/M <sup>2</sup> )	25.04± 1.41
Waist Circumference (cm)	86.21± 5.32
Systolic Blood Pressure (mm/Hg)	128.6± 21.9
Diastolic Blood Pressure (mm/Hg)	92± 9.53
Fasting Blood Sugar (mg/dl)	97.46± 19.5
Total Cholesterol (mg/dl)	173.32±27.51
Seum triglyceride (mg/dl)	154.92±23.75
HDL(mg/dl)	45.82±5.8

**Table 4:** Distribution Of Patients Of First Episode Of Psychosis According To Cardiovascular Profile Variables

Sr No	Variables	No Of Patients	Percentage
1	Age (>40 yrs Male , > 50 yrsFemale )	22	22%
2	BMI (> 25 Kg/M <sup>2</sup> )	27	27%
3	Waist Circumference (>90cm Male > 80cm Female)	38	38%
4	Systolic Blood Pressure (> 130mm/Hg)	25	25%
5	Diastolic Blood Pressure (>85 Mm/Hg)	17	17%
6	Abnormal Blood Pressure (>130/>85 Mm/Hg) Or Diagnosed Hypertensive	21	21%
7	Fasting Blood Sugar (>100mg/Dl) Or Diagnosed DM	19	19%
8	Serum Triglyceride (>150 Mg/Dl)	39	39%
9	HDL(<40mg/Dl Male , < 50 Mg/Dl Female )	42	42%

## DISCUSSION

In our study Majority of the patients were in the age group of 19-64 years (74%). Elderly patients were 5%. Mean age of the patient was 45.3± 4.9 years. Male to female ratio was 4.5:1. Similar findings were observed in previous studies where male show preponderance.<sup>7</sup> Gender discrimination can be a cause for low prevalence in female for attending the health services. In our study Addiction is more commonly seen in males (72 out of 82). Most commonly observed addiction was alcohol (51%) followed by smoking (40%). On the contrary phutane *et al* found that smoking was the commonest addiction among the patients.<sup>7</sup> Mean weight of the patient was 68.23± 3.54 kg. Mean BMI (body mass index) was 25.04± 1.41kg/m<sup>2</sup>. Mean waist circumference of the patient was 86.21± 5.32 cm. similar findings were

seen in phutane *et al.*<sup>7</sup> Mean systolic blood pressure of the patients was 128.6± 21.9 mm/Hg. Mean diastolic pressure of the patient was 92± 9.53 mm/Hg. Similarly Phutane *et al*<sup>7</sup> found that mean systolic blood pressure of 126.1±13.5 mg/dl. Mean fasting blood sugar was 97.46± 19.5 mg/dl. Mean total cholesterol of the patients was 173.32±27.51mg/dl while mean serum triglyceride and mean serum HDL were 154.92±23.75 mg/dl and 45.82±5.8 mg/dl respectively. In accordance with our study Phutane *et al* observed mean serum HDL level of 48.2 ±11.3 mg/dl.<sup>7</sup> In our study most commonly observed cardiovascular risk factor was dyslipidemia. 39% patients had raised serum triglyceride and 42% patients had lower HDL levels. Increased Waist circumference was observed in 38% patients. similar findings were observed in Yusuf *et al*<sup>8</sup> where they found

obesity, hypertension and dyslipidemia in schizophrenic patients. In studies carried out on chronic psychosis found that chronic psychotic patients had higher prevalence of obesity, tobacco addiction, dyslipidemia, hypertension and diabetes than the age and gender matched normal controls.<sup>9-11</sup> Studies done on first episode psychosis found different results. In a study by Ryan *et al* patients had significantly higher fasting plasma glucose levels than controls. HDL cholesterol was not different from the controls but total cholesterol was lower in patients.<sup>12</sup> Sengupta *et al* observed no significant differences in fasting plasma glucose levels, glucose tolerance, body mass index, waist circumference and pulse pressure when compared first-episode psychosis patients with age, gender, and race matched controls.<sup>13</sup> Another study done by Verma *et al* found that patients had a significantly higher prevalence of diabetes but lower frequencies of obesity and total and LDL cholesterol.<sup>14</sup>

## CONCLUSION

Hypertension and dyslipidemias are common cardiovascular risk factors found in patients with first episode psychosis.

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