

Cross- Sectional study of differences in phenomenology of acute psychosis with or without cannabis

Pal V. S¹, Rastogi P², Chauhan A³, Niranjana V⁴

¹Dr. V. S. Pal, Associate Professor, ²Dr. Pali Rastogi, Assistant Professor, ³Dr. Amrita Chauhan, Post Graduate Resident, ⁴Dr. Vijay Niranjana, Assistant Professor. All authors are affiliated with Department of Psychiatry M.G.M Medical College Indore, MP, India.

Address Correspondence: Dr. Pali Rastogi, Assistant Professor, Department of Psychiatry, Mahatma Gandhi Memorial Medical College, A. B. Road, Indore, India. E-mail- dr.palrastogi73@gmail.com

Abstract

Background: There has been plethora of research regarding cannabis use disorder but very few studies reported demographic and phenomenological differences of acute psychosis with cannabis use to those of acute psychosis without cannabis use. This study attempted to evaluate the demographic and phenomenology differences between two groups of patients presenting with acute psychosis with cannabis use and acute psychosis without cannabis use. **Material & Method:** Two groups of patients recruited for study were 'Cases with Cannabis' and 'control without Cannabis' presenting with acute psychosis with preceding cannabis use and second one presenting with acute psychosis without preceding cannabis use in out-patient department of psychiatry, M.Y hospital, Indore. Assessment done using rating scales. **Results:** Acute psychosis with cannabis was characterized by primarily polymorphic clinical picture with predominance of positive and mood symptoms both in clear and disturbed sensorium. Acute psychosis without cannabis was characterized by mixed positive and negative symptoms in clear sensorium. In 'Cases with cannabis' group 96.7% were males and 3.3% were females, mean age was higher (33.7%) than control (27.7%) group. **Conclusion:** Acute psychosis with cannabis is characterized by primarily polymorphic clinical picture with predominance of positive and mood symptoms both in clear and disturbed sensorium. Acute psychosis without cannabis is characterized by mixed positive and negative symptoms. General symptoms of psychosis were also more in acute psychosis without cannabis.

Key words: Cannabis, Acute Psychosis, Cannabis Psychosis, Phenomenology

Introduction

The use of cannabis has been known to mankind for the time immemorial and has been deeply ingrained in Indian Culture exemplified by its heavy use on occasion "Mahashivaratri". The United Nations Office on Drugs and Crime (UNODC) reports that 3.9% of the global adult population uses cannabis. Data from the National Household Survey in India demonstrated a prevalence figure of 4% and 3.3% for lifetime and current cannabis users [1]. However, cannabis use has been widely reported to induce acute psychotic experiences, to affect the severity of psychotic symptoms, and previous meta-analyses have reported a 2-fold increase in the risk to develop a

psychotic disorder in cannabis users compared to nonusers [2]. The principal psychoactive compound in cannabis is delta-9-tetra hydrocannabinol, content of which varies in different preparations of cannabis [3]. Adverse mental health effects generally seen with more potent forms of cannabis. THC and other cannabinoid agonists produce their effect by interacting with an endogenous cannabinoid signaling system. There are two types of cannabinoid receptors. CB1 receptors found primarily in the brain and mediate the psychological and behavioral effects of THC [4]. Cannabis is one of the environmental factors that has received attention in recent literature as possibly contributing to risk for psychotic disorder. Most researchers conclude to few types of psychosis associated with cannabis use: Acute toxic or

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organic psychosis, acute functional psychosis, chronic psychosis which persist after abstinence, amotivational syndrome and schizophrenia S [5]. The study of cannabis effects on clinical course and outcome remains an interesting area both from academic and clinical point of view[6].

Material & Method

Study Place-Study was conducted in department of psychiatry, MGM Medical College after clearance obtained from institutional ethic committee of MGMMC Indore.

Study design-The study was carried out with a Cross-sectional design.

Sampling Method-30 patients were selected in each group with purposive sampling (Acute psychosis with cannabis use and acute psychosis without cannabis use) after satisfying inclusion criteria and taking informed consent.

Inclusion criteria

1. Patient or legally accepted relative giving written informed consent
2. Patients fulfilling criteria of acute psychosis with or without cannabis (As per ICD-10)
3. Patient aged 18-60 yrs
4. Patient taking alcohol not in dependence pattern

Exclusion criteria

Persons were excluded from participation in the study if they met any of the following:

1. Patient taking other substance excluding tobacco
2. Patient with mental retardation
3. Patient having organic brain disorder
4. Patient having life threatening medical condition
5. Patient having history of mental illness prior to onset of cannabis use in first group

We relied on self-reported data of cannabis use regarding pattern, type, duration, and amount of use which was further confirmed by key relatives. Data regarding cannabis use was collected using drug abuse screening test (DAST-20). Diagnosis in both groups made with ICD-10-DCR [7]. Patients were recruited from OPD, IPD and emergency department with purposive sampling and assessed with scales for comparison of phenomenology using PANSS (positive and negative syndrome scale), OAS (overt aggression scale) and YMRS (Young mania rating scale). Two groups were assessed for socio-demographic variables with Semi structured data entry Performa. In two major groups these similar diagnosis matched for any differences cross-sectionally.

Statistical Method- Data analysis done with spss software. Data gathered was of non-normal distribution so we applied non-parametric test i.e., Mann-Whitney test to test the significance. P value less than 0.05 was considered as statistically significant.

Results

In 'Cases with cannabis' group 96.7% were males and 3.3% female was there in sample. While in 'Control without cannabis group' 63.3% males and 36% females were there (Table-1). 36.7% of 'cases with cannabis' while 56.3% of 'controls without cannabis' belong to 21-30 years age group. These figures show that psychosis is more common in 21-30 year of age group (Table-1). Mean age of 'cases with cannabis' came out to be 33.7 years while in 'control without cannabis' group it is 27.7 years. P value is 0.016 (Table-1). So there is significant difference between proportion of cases and control in different age group. 56.7% of subjects from 'cases with cannabis' group reside in urban area and 40% in rural area rest in semi urban area. While in 'control without cannabis' group 30% subjects reside in both rural and urban area rest in semi urban area. In both groups more than 50% of subjects belongs to nuclear family type. In 'Cases with cannabis' group 70% of patient were educated up to 10th standard while 'Control without cannabis' group 50% of patient educated up to 10th standard and 13.3% were illiterate. In 'Cases with cannabis' group 30% of patient engaged in skilled and semi skilled occupation while 26.7% in same occupation in 'Control without cannabis' group. Baseline mean positive score (at 0 day) in 'case with cannabis' group was 29.7 and of 'control without cannabis' group was 23 (Table-2).

Significant difference in baseline mean positive scores between two groups with p value of 0.000 suggestive of prominence of positive symptom characterized by high score on excitement, grandiosity, suspiciousness and hostility on PANSS in 'cases with cannabis' group as compared to 'control without cannabis' group. Baseline mean negative score in 'case with cannabis' group is 16.2, in 'control without cannabis' group is 20.6 (Table-3).

So there was significant difference in mean negative score between two groups with P value of 0.011 indicative of prominence of negative symptom in 'control without cannabis' group as compared to 'cases with cannabis' group.

Table-1: Sex & age distribution & mean age distribution of case and control.

Gender	Cases(N=30)		Control(N=30)	
	N	%	N	%
Male	29	96.7	19	63.3
Female	1	3	11	36
Age				
16-20	3	10.0	4	13.3
21-30	11	36.7	17	56.7
31-40	8	26.7	7	23.3
41-50	5	16.7	2	6.7
51-60	3	10.0	0	0.0
Groups	Mean	Min	Max	'p' value
Cases	33.7	19.0	55.0	0.016
Control	27.7	15.0	45.0	

Table- 2: Comparative PANSS Positive subscale scores between cases and control.

Groups	Mean	Min	Max	±SD	P value
Cases	29.7	14.0	47.0	7.4	0.000
Control	23.0	13.0	37.0	6.0	

Table- 3: Comparative PANSS Negative subscale scores between cases and control.

Groups	Mean	Min	Max	±SD	'p' value
Cases	16.2	8.0	36.0	7.9	0.011
Control	20.6	7.0	36.0	7.6	

Table- 4: Comparative PANSS General subscale score between cases and control.

Groups	Mean	Min	Max	±SD	'p' value
Cases	35.4	20.0	59.0	9.2	0.005
Control	43.4	23.0	61.0	8.5	

Table- 5: Comparative Overt Aggression scale scores between cases and control.

Groups	Mean	Min	Max	±SD	'p' value
Cases	19.3	0.0	67.0	15.8	0.001
Control	9.6	0.0	44.0	9.4	

Table- 6: Comparative YMRS scale mean scores between cases and control.

Groups	Mean	Min	Max	±SD	'p' value
Cases	30.9	0.0	52.0	12.3	0.000 HS
Control	13.0	6.0	36.0	8.3	

Baseline mean general score in 'case with cannabis' group was 35.4 and in 'control without cannabis' group was 43.4 (Table-4). Difference of score between two groups was significant. This indicate that general symptom of psychosis were more in 'control without cannabis' group as compared to 'cases with cannabis' group. Predominant symptom in general psychopathology scale were anxiety, guilt feelings, depression, tension, active

social avoidance in 'control without cannabis' group while disorientation, poor, judgement, attention, unusual thought content, uncooperativeness, poor impulse control were common among 'cases with cannabis' group. Baseline mean Aggression score in 'case with cannabis' group was 19.3 which is more than mean 9.6 of 'control without cannabis' group. P value is 0.01, so this difference between two group was significant. This indicates aggression was more in 'cases with cannabis' using group as compared to 'control without cannabis' group (Table-5). Baseline Mean YMRS score in 'case with cannabis' group was 30.9 which is more than mean 13 of control group. P value is 0.000, so this difference between two groups is highly significant. This indicates mood symptoms were more common in 'cases with cannabis' group as compared to control group (Table-6).

Discussion

Among 'cases with cannabis' group, 29 cases (96.7%) were male and one case (3.3%), was female. This could be attributed to low prevalence of substance abuse among females in general population in India and cannabis in particular. This finding was consistent with previous studies like Varma et al concluded in his study that prevalence for cannabis abuse in female is very less [8].

36.7% of 'cases with cannabis' while 56.7% of 'controls without cannabis' belong to 21-30 years age group. These figures show that psychosis is more prevalent among 21-30 year of age group population. Mean age of psychosis in 'cases with cannabis' group was 33.7 years while in 'control without cannabis' group it was 27.7 years. There was significant difference between proportion of cases and control in different age group and which is also consistent with finding of previous studies. Varma concluded in his study of cannabis psychosis that mean age of patients of cannabis psychosis is 35.81 years which is higher than average mean of 32 years for other mental patient [8].

Baseline mean positive score in 'cases with cannabis' group was 29.7 and of 'control without cannabis' group was 23. Significant difference in baseline mean positive scores between two groups is suggestive of prominence of positive symptom in 'cases with cannabis' group as compared to 'control without cannabis' group. Higher mean positive score in 'cases with cannabis' group was consistent with results from study by R Patel et al [9]. Baseline mean negative score in 'case with cannabis' group was 16.2, in 'control without cannabis' group was 20.6. There was significant difference in mean negative score between two groups indicative of prominence of negative symptom in 'control without cannabis' group. Carol. M et al study results also observed higher negative symptom score (14.16 vs 11.67) of PANSS sub scale on comparing primary psychosis with

substance induced psychosis [9]. Baseline mean general score in 'case with cannabis' group was 35.4 and in 'control without cannabis' group was 43.4. Difference of score between two groups was significant. This indicates that general symptom of psychosis were more in 'control without cannabis' group as compared to 'cases with cannabis' group. Similar results were reported by Carol. M et al [10].

Baseline mean Aggression score in 'case with cannabis' group was 19.3 which is more than mean 9.6 of 'control without cannabis' group. This difference between two groups was significant. This indicates aggression was more in 'cases with cannabis' using group as compared to 'control without cannabis' group. This finding was consistent with other studies [9].

Baseline Mean YMRS score in 'case with cannabis' group was 30.9 which is more than mean 13 of control group. This difference between two groups was highly significant. This indicates mood symptoms were more common in 'cases with cannabis' group as compared to control group. Similar results were reported by Debasish Basu et al from India [11].

Conclusion

This prospective case control study concludes that Acute psychosis with cannabis is characterized by primarily polymorphic clinical picture with predominance of positive and mood symptoms both in clear and disturbed sensorium. Acute psychosis without cannabis is characterized by mixed positive and negative symptoms. General symptoms of psychosis were also more in acute psychosis without cannabis. The important limitations of the study were of small sample size, cross sectional assessment, purposive sampling and institutional setting. Further research is warranted regarding phenomenology, course and outcome of psychosis associated with Cannabis use.

What study adds to Existing knowledge- Very few studies reported from India that differentiate the clinical feature of cannabis psychosis from other acute psychosis which may have an important implication in diagnosis and treatment part of illness. Our study gave a clear insight in to the phenomenology of psychosis associated with cannabis use and that would be helpful in elucidating role of Cannabis in modifying psychosis, which has been a challenging task for specialist in field.

Recommendations

- There is dearth of research regarding phenomenology of psychosis associated with cannabis use, particularly from India, warranting further research to find out role of cannabis in psychosis.
- Government should implement strict rules towards illicit drug trafficking, particularly of Cannabis.
- Awareness should be raised at community level by social workers using mass media programmes regarding adverse mental health effects of cannabis use.

Author contribution- This study conducted under guidance of Dr V.S Pal (Associate Professor) with valuable contribution from Dr. Pali Rastogi (Assistant Professor) in timely evaluation of study. Patient interviewing and data collection done by Dr Amrita Chauhan (PG Resident) in collaboration with Dr Vijay Niranjana (Assistant Professor) doing data analysis and manuscript preparation.

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