

Prospective Study of Course and Outcome of Acute Psychosis with or without Cannabis

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ABSTRACT

Introduction: Cannabis use can lead to a variety of untoward mental health effects. In recent past very few studies has been reported comparing course and outcome of acute psychosis with cannabis use to those of acute psychosis without cannabis use. This study attempted to evaluate the differences in course and outcome between two groups of patients presenting with acute psychosis with cannabis use and acute psychosis without cannabis use.

Material and Methods: Two group of patients recruited for study were 'Cases with Cannabis' and 'Control without Cannabis' presenting with acute psychosis from out-patient department of psychiatry, MY hospital, Indore. These two groups were followed up over a period of 6 weeks along antipsychotic treatment with baseline assessment at 0 day, then at end of 1st week and at end of 6th week using rating scales.

Results: 'Cases with cannabis' showed greater significant reduction in mean positive score between baseline to 6th week. In 'control without cannabis' both positive and negative symptoms reduced significantly between 1-6 weeks. There was significant reduction in aggression scores and YMRS scores at end of 1st and 6th week in both groups. There was significant improvement in functioning in both the groups however relatively better in controls without cannabis group.

Conclusion: Cannabis associated psychosis presented with predominance of positive, affective and aggression symptoms as compared to psychosis without cannabis. Both groups responded well to antipsychotic treatment however overall functioning was better in cannabis without psychosis at the end of 6th week

Keywords: Cannabis, Psychosis, Acute Psychosis, Cannabis Psychosis

three distinct relationships: acute psychosis associated with cannabis intoxication, acute psychosis that lasts beyond the period of acute intoxication, and persistent psychosis not time-locked to exposure.³

The principal psychoactive constituent of cannabis is delta-9-tetrahydrocannabinol (THC), which produce psychoactive effects by acting on CB1 receptors in brain.⁴ A small number of controlled studies related to cannabis psychosis have been conducted over past 20 years. There are very few researches about cannabis from India. The occurrence of cannabis psychosis as an acute organic disorder with a brief and self limiting course has met with some agreement in more recent studies.^{5,6,7} The evidence that cannabis has a causative role in chronic psychotic or affective disorders is not convincing, although the drug may modify the course of an already established illness.⁸ Cannabis use is likely to increase the risk of developing schizophrenia and other psychoses; the higher the use the greater the risk. Most patient of cannabis psychosis, have favorable course and outcome with full recovery. Cross-sectional studies document an association between cannabis use and psychotic symptoms, and longitudinal studies suggest that early exposure to cannabis confers a close to two-fold increase in the risk of developing schizophrenia.¹⁰ Hereby we designed this prospective case control study to compare course and outcome of acute psychosis with or without cannabis use.

MATERIAL AND METHODS

Study was conducted in department of psychiatry, MGM Medical College after clearance was obtained from institutional ethic committee of MGMMC Indore. The study was carried out with a prospective design. 30 patients were selected in each group (Acute psychosis with cannabis use and acute psychosis without cannabis use) after satisfying inclusion criteria and taking informed consent. 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 will be collected

INTRODUCTION

An appreciable proportion of cannabis users report short-lived adverse effects, including psychotic states following heavy consumption, while regular users are at risk of dependence. People with major mental illnesses such as schizophrenia are especially vulnerable in that cannabis generally provokes relapse and aggravates existing symptoms. Health workers need to recognize, and respond to, the adverse effects of cannabis on mental health.¹

Cannabis is neither necessary nor sufficient to cause a persistent psychotic disorder, it is a component cause that interact with other factors to result in psychosis. While more research is needed to characterize the relationship between cannabis use and the onset and persistence of psychosis.² The link between cannabis use and psychosis comprises

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using drug abuse screening test (DAST-20). Diagnosis in both groups made with ICD-10-DCR. Patients were recruited from OPD, IPD and emergency department with purposive sampling and Phenomenology was compared in two groups using PANSS (Positive and Negative syndrome scale), OAS (Overt Aggression Scale) and YMRS (Young Mania Rating Scale) and GAF (Global Assessment of Functioning) score for any change in serial observation score from baseline score over a follow-up period of 6 weeks with first follow-up done at end of 1st week, and last at end of 6th week. Both groups received treatment in form of antipsychotic ‘Haloperidol’ during this time, dosage titrated according to severity of illness.

STATISTICAL ANALYSIS

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

‘Cases with cannabis’ group showed greater significant reduction in mean positive score between 0 day and 1st week (0-1week) with ‘p’ value is 0.000, than ‘control without cannabis’ group (Table-1). Mean positive score at 1st week when compared with score at 6th week (1-6week) ‘p’ value is 0.000, there is significant reduction in positive score in both groups.

In ‘cases with cannabis’ group negative symptoms responded better over treatment as their mean difference between 0 day and 1week(0-1week) is more as compared to control without cannabis group (Table-2). Similarly when mean negative score at 1st week compared with score at 6th

week (1-6 week) in ‘cases with cannabis’ groups ‘p’ value is 0.061 which is non-significant, suggestive of persistence of negative symptom at end of 6th week while mean negative score between 1st and 6th week was reduced significantly for ‘control without cannabis’ group with ‘p’ value 0.000. While in ‘control without cannabis’ group both positive and negative symptoms reduced significantly between 1-6 weeks.

For both groups on comparing mean general score at 0 day with 1st week(0-1week), and 1-6 weeks ‘p’ value is 0.000 which is highly significant which shows that there was significant reduction in mean general score at end of 1st week and 6th week in both groups (Table-3).

For both groups on comparing mean aggression score at 0 day with 1st week (0-1week),and 1-6 week ‘p’ value was 0.000 highly significant for both groups which shows that there was significant reduction in mean aggression score at end of 1st and 6th week in both groups (Table-4).

For both groups on comparing Mean YMRS score at 0 day with 1st week(0-1week), ‘p’ value is 0.000 which was highly significant which shows that there was significant reduction in mean YMRS score at end of 1st week in both groups(Table-5).

Mean YMRS score at the end of 6th week was 7.8 in ‘cases with cannabis’ group and 0.07 in ‘control without cannabis’ group which is considered as poorer outcome in ‘cases with cannabis’ group either due to continuation of symptoms or poor response to treatment because of continuous cannabis use in 1/3 patients of this group.

For both groups on comparing mean GAF score between 0 day and 1st week(0-1week), and 1st week and 6th week(1-6 week) ‘p’ value was 0.000 for each, which is highly

Follow up Time (in weeks)	Cases(with cannabis)			Control(without cannabis)		
	Mean	Mean	‘p’value	Mean	Mean	‘p’value
0 - 1	29.7	17.2	0.000 HS	23.0	18.2	0.001HS
1 - 6	17.2	13.0	0.000 HS	18.2	9.4	0.000 HS

Table-1: PANSS Positive subscale mean scores comparison in both groups

Follow-up period (in weeks)	Cases (with cannabis)			Control (without cannabis)		
	Mean	Mean	‘p’value	Mean	Mean	‘p’value
0-1	16.2	10.1	0.000 HS	20.6	14.9	0.001 HS
1-6	10.1	9.1	0.061 NS	14.9	8.9	0.000 HS

Table-2: PANSS Negative subscale mean scores comparison between both groups

Follow-up period (in weeks)	Cases (with cannabis)			Control (without cannabis)		
	Mean	Mean	‘p’value	Mean	Mean	‘p’value
0-1	35.4	26.1	0.000 HS	43.4	32.1	0.000 HS
1-6	26.1	22.0	0.001 HS	32.1	20.8	0.000 HS

Table-3: PANSS General subscale mean scores comparison between both groups

Follow-up period(in weeks)	Cases (with cannabis)			Control (without cannabis)		
	Mean	Mean	‘p’value	Mean	Mean	‘p’value
0-1	19.3	10.1	0.006 HS	9.6	4.3	0.000 HS
1-6	10.1	3.0	0.000 HS	4.3	2.8	0.006 HS

Table-4: Overt Aggression scale mean scores comparison between both groups

Follow-up period (in weeks)	Cases (with cannabis)			Control (without cannabis)		
	Mean	Mean	'p' value	Mean	Mean	'p' value
0 -1	30.9	17.8	0.000 HS	13.0	8.9	0.000 HS
1-6	17.8	7.8	0.000 HS	8.9	0.07	0.000 HS

Table-5: YMRS scale mean scores comparison between both groups

Follow-up period (in weeks)	Cases (with cannabis)			Control (without cannabis)		
	Mean	Mean	'p' value	Mean	Mean	'p' value
0 -1	32	46	0.000 HS	29	39	0.000 HS
1 -6	46	63	0.000 HS	39	72	0.000 HS

Table-6: GAF scale mean scores comparison between both groups

significant, showed that there was significant improvement in functioning in serial observation score for a follow-up period of 6 weeks in both the groups (Table-6).

Mean GAF score was 72 in 'control without cannabis' group and 63 in 'cases with cannabis' group at the end of 6th week, predictive of better outcome in 'control without cannabis' group.

DISCUSSION

For 'cases with cannabis' group there was significant reduction in mean positive score on PANSS at end of 1st week. Similar results were seen by Rottanburg et al who did comparison study in which Cannabis group showed marked improvement at 1 week (particularly in the psychotic syndromes).¹⁰

When mean positive score at 0 day compared with score at 6th week (0-6) in both groups 'p' value is 0.000 which is highly significant which means there is significant reduction in positive score at end of 6th week in both groups. Similarly when mean positive score at 1st week compared with score at 6th week (1-6 week) 'p' value is 0.000 in both groups which is highly significant.

For 'cases with cannabis' on comparing mean negative score there was significant reduction in mean negative score at end of 1st week. Similarly on comparing same value in 'control without cannabis' group at the end of 1st week 'p' value is 0.001 which was highly significant.

When baseline mean negative score compared with score at 6th week there was significant reduction in negative score at end of 6th week in both groups.

However when mean negative score at 1st week compared with score at 6th week (1-6 week) in 'cases with cannabis' groups 'p' value was 0.061 which was non-significant, suggestive of persistence of negative symptom at end of 6th week while mean negative score was reduced significantly between 1st and 6th week for 'control without cannabis' group with 'p' value 0.000 which shows better response in control group at end of 6th week.

The findings suggest that positive symptom in cannabis psychosis responds more rapidly as compared to negative symptoms that are of more persistent nature. While in 'control without cannabis' group both positive and negative symptoms reduced significantly between 1-6 weeks.

For both groups on comparing mean general subscale score on PANSS at 0 day with 1st week that there was significant

reduction in mean general score at end of 1st week in both groups. When mean general score at 0 day compared with score at 6th week (0-6 week) in both groups there was significant reduction in general score. Similarly when mean general score at 1st week compared with score at 6th week, the reduction was significant in both groups.

For both groups on comparing mean aggression score at 0 day with 1st week, there was significant reduction in mean aggression score at end of 1st week. But mean aggression score at 0 day was more in 'cases with cannabis' group that account to more of Aggression both verbal and physical seen in this group. When mean aggression score at 0 day compared with score at 6th week in both groups, there was significant reduction in aggression score at end of 6th week. Similarly when mean aggression score at 1st week compared with score at 6th week in both groups 'p' value is 0.000, highly significant for both groups. The findings are in accordance with the study by R. Patel et al.¹¹

For both groups on comparing Mean YMRS score at 0 day with 1st week there was significant reduction in mean YMRS score at end of 1st week. Mean YMRS score at 0 day was 30.9 in 'cases with cannabis' group and 13 in 'control without cannabis' group which show that 'cases with cannabis' were predominantly presented at admission with mania like picture which is consistent with finding in other study⁸. When mean YMRS score in both groups at 0 day compared with score at 6th week there was significant reduction in YMRS score at end of 6th week in both groups. But mean YMRS score at the end of 6th week was 7.8 in 'cases with cannabis' group and 0.07 in 'control without cannabis' group which is considered as poorer outcome in 'cases with cannabis' group either due to continuation of symptoms or poor response to treatment because of continuous cannabis use in 1/3 patients of this group. Similarly when mean YMRS score at 1st week compared with score at 6th week there was significant reduction in score in both groups.

For both groups on comparing mean GAF score between 0 day and 1st week (0-1 week), 0 day and 6th week (0-6 week) and 1st week and 6th week (1-6 week) there was significant improvement in functioning in serial observation score for a follow-up period of 6 weeks in both the groups. Mean GAF score was 72 in 'control without cannabis' group and 63 in 'cases with cannabis' group at the end of 6th week, predictive of better outcome in 'control without cannabis' group. R. Patel et al also reported in their study that Cannabis abuse/

dependence was associated with poorer functioning.¹¹

CONCLUSION

The Cannabis associated psychosis presented mainly with predominance of positive, affective and aggression symptoms as compared to psychosis without cannabis. Both groups responded well to antipsychotic treatment however in about 1/3rd of patients in cannabis psychosis group continued to have high scores on psychosis and affective rating scales and overall functioning was better in cannabis without psychosis at the end of 6th week. Thus our study reflects the role of cannabis in modifying the presentation, course and outcome of psychosis. However our study was having certain limitations like small sample size, short period of observation, lack of lab testing for urine cannabinoids and thus reliance on self-reporting by patients and institutional setting. Thus further prospective research with larger samples and longer duration of observation is warranted to shed more light on this area of potential importance.

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