International Journal of Pharmaceutical and Medical Research
Volume – 2 Issue – 1 February 2014
Website: www.woarjournals.org/IJPMR *ISSN: 2348-0262*

Phenomanology of mania (Bipolar -1)

Dr. Bhavik kumar N. Shah[1], Dr. Manubhai C. Parmar [2]

[1] M.D. Psychiaytry
[2] D.P.M, M.D. Psychiaytry
Dept of Psychiatry, M.P.Shah Medical College, Jamnagar

Abstract: ***Throughout history mania has been noted by doctors, philosophers, writers and more recently lawyers. The Greek Humoral hypothesis says that MANIA (insanity) is caused by a body fluid known as YELLOW BILE (Lidell, Henry, George and Robert Scott, 1980), indicative of the term's origins in pre-Hippocratic humoral theories.***

Keywords: mania, yellow bile, insanity, body fluid**.**

1. History & Introduction

Mania (Bipolar-I) is one of the potentially disabling conditions, significantly affecting person's ability to function in work and social situations.

Throughout history mania has been noted by doctors, philosophers, writers and more recently lawyers. The earliest written account on mania is found in Greek empire. The Greek Humoral hypothesis says that **MANIA (insanity)** is caused by a body fluid known as **YELLOW BILE** (**Lidell, Henry, George and Robert Scott, 1980)**, indicative of the term's origins in pre-Hippocratic humoral theories.

Arataeus of Cappadocia, a philosopher who lived in Alexandria somewhere between 30 and 150 A.D. says that both mania and melancholia have their common origin in BLACK BILE or mania is arising from mixture of black bile and yellow bile. **Hippocrates** used the terms mania and melancholia to describe mental disturbances.

The idea and debate about a relationship between mania and melancholia can be traced back to at least the 2nd Century A.D. **Soranus of Ephedrus (98-177 A.D.)** described mania and melancholia as distinct disease. No much had written after that until about the 17th Century.

In 17th Century, **Richard Napier**, a British Physician wrote extensively about manic and depressive illness. Publications like **Phillepe Pinel's** Treatise on insanity (1806) and **John Haslam's** observation on madness and melancholy (1809) had described about mania.

The modern concept for mania and bipolar disorders was born in France, with the publication of **Farlet (1851), and Baillarger (1854). Emil- Kraepelin** in- 1899 unified all types of affective disorders in manic-depressive insanity. Inspite of some opposition his unitary concept was adopted worldwide. In the 1960s the publications of **Jules angst, Carlo Perris, and George Winokur** shows that there exist clinical, familial and course characteristics between unipolar and bipolar disorders.

The concept of mania has further advanced in last three decades, landmark development includes the renaissance of Kraepelin's mixed states and **Hecker's cyclothymia** and related affective temperaments, the concept of soft bipolar spectrum **(akiskal)**, and the distinction of schizoaffective disorders into unipolar and bipolar forms.

Most recently in 20th century it has been defined in DSM-I (1952), DSM-II (1968), DSM-III (1980), DSM-III-R (1987), DSM-IV (1994). And finally well documented and hypothesized in DSM-IV-TR (2000). **(American Psychiatric Association, 2000)**

Mania has been also defined in ICD classifications. DSM-II was based on ICD-8, DSM-III on ICD-9, and DSM-IV on ICD-10. **(World Health Organization, 1993)**

Mania is mood state characterized by elation, euphoria, agitation, grandiosity, hyperactivity, hyper-sexuality, and accelerated thinking and speaking (flight of ideas), easy distractibility and decrease need for sleep **(Basco, Monica Ramirez, 2006).**

Patients with manic episode only, or both having manic and depressive episode are included in Bipolar-I disorder. Unipolar mania or Pure mania are used for bipolar I patient not having any depressive episode. Similar episodes like mania but lesser in intensity and duration are known as hypomania. **(American Psychiatric association, 2000)**

Lifetime prevalence of mania according to its differential diagnosis is, Bipolar-I: 0-2.4%, bipolar-II: 0.3-4.8%, hypomania: 2.6-7.8%. **(Rihmer Z, Angst A, 2004)**

Manic episodes are more common in men than in female, and in youngsters between ages of 15-25 years. **(Ratendra Kumar, Baxi N.P. Sinha, 2001)**

Substantial progress has been made in the last two decades in understanding the various aspects of the disorder that includes its prevalence, etiology, clinical presentation, co-morbidities and management.

Main etiology is disturbance of biological amines: nor-adrenaline, serotonin, dopamine and other neurochemical transmitters in brain. Alteration in hormonal regulation, sleep neurophysiology and -immunological disturbance also precipitates mood disorder. Genetic factors, environmental factors and stressors also play a major role.

Structural and functional brain imaging by CT scan, MRI and PET scan and neuro anatomical considerations shows main involvement of 4 brain regions in mood disorders namely prefrontal cortex, anterior cingulate cortex, hippocampus and the amyglada. **(Strakowski, DelBello M.P, 1999)**

Main line of treatments for acute mania is mood stabilizers. Antipsychotics and benzodiazepines are also used. Psychodynamic therapy, behavioural therapy, interpersonal therapy and cognitive therapies are also used in treatment of mood disorders. **(Kaplan A. Sadock, Virginia A. Sadock, 2007)**

Studies for Course and prognosis of mania showed that disorder has a long course and tend to have frequent relapses.

2. AIMS AND OBJECTIVES

This study was undertaken with aims of :

2.1 To study socio-demographic factors associated with mania (Bipolar-I).
2.2 To study symptomatology & diagnosis in manic patient (Bipolar-I).
2.3 To study co-morbidities in a patient with mania(Bipolar-I).
2.4 To study association of socio-demographic factors with substance use disorders in mania and to study pattern of substance intake during current manic episode (Bipolar-I) itself.
2.5 To study episodic pattern in patients of mania(Bipolar-I).

3. MATERIAL AND METHODS

This study was a retrospective observational study, conducted in department of psychiatry, of our hospital.

All the patients visiting the O.P.D. of Psychiatry during August- 2010 to July- 2011 were screened for manic episode. The patients suggestive of suffering from mania were thoroughly evaluated for the diagnosis of mania by using DSM-IV-TR criteria for the manic episode. After initial screening the data regarding age, sex, past medical and psychiatry history, family history, physical and clinical examination was recorded in the case report form (Performa). Then the patients with diagnosis of manic episode were subjected to 11 items Youngs Mania Rating Scale, to access the severity of Manic episode. Patient's social class was determined by Prasad's classification of social class (revised -2010). Particular attention was paid to check whether patient was having any co-morbid psychiatric illness, substance use disorder and pattern of substance intake. Data was tabulated and then analyzed by using SPSS ver. 17 and Microsoft Excel 2007. Descriptive analysis includes mean and standard deviation for continuous variables. The results were presented in tables and charts**.**

All Patients and their relatives were explained about the procedure, its purpose and were assured about confidentiality of the information and their written consent was taken for participation in this study.

3.1 INCLUSION CRITERIA:

1) Male or female patients attending O.P.D. of any age with recent onset of Manic episode.
2) Definite diagnosis of Manic episode as per DSM-IV-TR criteria and clinical interview.
3) Patient must be healthy on the basis of a physical examination and vital signs at screening.
4) Patients and their relatives who were willing to and having no objection against interview of patient and applying scales on them.

3.2 EXCLUSION CRITERIA:

1) Patient with Axis-I diagnosis of other mental disorder like Schizophrenia, schizophreniform disorder, schizoaffective disorder, Bipolar-I (if most recent episode is hypomanic, mixed, depressive or unspecified).
2) Relevant history of any significant and/or unstable cardiovascular, respiratory, neurologic, renal, hepatic, endocrine or immunological disease, including recent or present clinically relevant laboratory abnormalities.
3) Patients who were uncooperative and not willing to participate, and if patients relative deny for patient's participation.

3.3 INSTRUMENTS USED IN THIS STUDY:

1) Semi structured Performa for recording socio-demographical variables including details of chief complaints, medical and psychiatric history and mental status examination. **(Annexure-I)**
2) Informed consent form in Gujarati and English format
3) Prasad's classification of social class, 2010 revised. **(Annexure-II)**
4) DSM-IV-TR diagnostic criteria for manic episode. **(Annexure-III)**
5) Youngs Mania Rating Scale (YMRS). **(Annexure-IV)**

4. PRASAD'S CLASSIFICATION OF SOCIAL CLASS (REVISED 2010):

4.1 Social Class:

Total income of family had been recorded and per capita income was calculated from that. Socioeconomic class determined on the basis of modified Prasad's classification, which take into consideration consumer price index (CPI) of that particular month.

4.2 Socio-economic class:

Total income of family had been recorded and per capita income was calculated from it. Social classification was done on the basis of Prasad's classification (1961), which was modified according to mean of AICPI (All India Consumer Price Index) all months of 2010, which was 815. Using AICPI, multiplying factor was obtained by following formula:

Multiplying factor = (CPI × 4.93)/100

= (815× 4.93)/100

= 40.18

This factor was then multiplied with the values in each class of Prasad's classification (1961)

Prasad's modified classification for socio economic class

Based on AICPI 2010.

SOCIO-ECONOMIC CLASS	**MONTHLY INCOME LIMITS (Rs/-)**
I	4018 and above
II	2009 – 4017
III	1205 - 2008
IV	1204 – 602
V	Below 602

5. DSM-IV-TR DIAGNOSTIC CRITERIA FOR MANIC EPISODE:

Diagnostic & Statistical manual of mental disorder (DSM) is the psychiatric classification developed by American Psychiatric Association in collaboration with other groups of mental health professionals.

After the 1st edition in 1952, five editions have been published since then, which includes DSM-II (1968), DSM-III (1980), DSM III-R (1987), DSM-IV (1994) and DSM-IV-TR (2000).

According to DSM-IV-TR diagnostic criteria for manic episode is diagnosed if elevated mood occurs with three or more of the seven- symptoms most of the day, nearly every day, for 1 week or longer. If the mood is irritable, four additional symptoms must be present**.**

(Diagnostic & Statistical manual of mental disorder, 4th ed. Text Revision, Washington DC: American Psychiatric Association)

6. YOUNGS MANIA RATING SCALE:

The Young Mania Rating Scale (YMRS) is one of the most frequently utilized rating scales to assess manic symptoms. The scale is designed to be administered by clinicians and to measure the severity of manic symptoms and also is based on the patient's subjective report of his or her clinical condition over the previous 48 hours.

It is a rating scale used to evaluate manic symptoms at baseline and over time in individuals with mania. The scale is generally done by a clinician or other trained rater with expertise with manic patients and takes 15–30 minutes to complete.

The scale has 11 items and these items are selected based upon published descriptions of the core symptoms of mania. The YMRS follows the style of the Hamilton Rating Scale for Depression (HAM-D) with each item given a severity rating.

There are four items that are graded on a 0 to 8 scale (irritability, speech, thought content, and disruptive/aggressive behavior), while the remaining seven items are graded on a 0 to 4 scale. These four items are given twice the weight of the others to compensate for poor cooperation from severely ill patients.

There are well described anchor points for each grade of severity. It is advisable to use of whole or half point ratings once experience with the scale is acquired.

Typical YMRS baseline scores can vary a lot. They depend on the patients' clinical features such as mania (YMRS $\geq$ 12), depression (YMRS = 3), or euthymia (YMRS = 2). Sometimes a clinical study entry requirement of YMRS > 20 generates a mean YMRS baseline of about 30.

Strengths of the YMRS include its brevity, widely accepted use, and ease of administration. The usefulness of the scale is limited in populations with diagnoses other than mania.

(Young RC, Biggs JT, Ziegler VE, Meyer DA. Young Mania Rating Scale. In: Handbook of Psychiatric Measures. Washington, DC: American Psychiatric Association; 2000.)

7. RESULTS AND DISCUSSION

During the study period, 100 patients with diagnosis of current Manic episode (Bipolar-I Disorder) were phenomenologically studied. The results are as under:

7.1 DEMOGRAPHIC CHARACTERISTICS:

Table I : Demographic Characteristics

Characteristic		**n (N = 100, %)**
Gender	Male	69
	Female	31
Age (Years)	10-19	9
	20-29	42
	30-39	22
	40-49	16
	50-59	7
	60-69	2
	$\geq$ 70	2
Age	Range	11-70
	Mean	32.67
	SD	12.77
Marital Status	Unmarried	35
	Married	51
	Divorced / Separated	9

	Widow / Widower	5
Education	Illiterate	14
	Primary	38
	Secondary	29
	Higher secondary	13
	Graduate or Higher	6
Type of family	Nuclear	69
	Joint	31

Characteristic		**n (N = 100, %)**
Socio-economic Status	Class I	17
	Class II	48
	Class III	28
	Class IV	7
	Class V	0
Domicile	Rural	66
	Urban	34
Religion	Hindu	67
	Muslim	31
	Others	2

(In our study Patients = 100. So, number of N itself suggests %)

❖ **Age: (Table I and Chart I)**

The range of patients in our study was 11 years to 70 years with a mean of 32.67 years and SD was 12.77.

❖ **Gender Difference: (Table I)**

In our study from 100 consecutive manic patients 31% were female patients and 69% were male. Study reveals male preponderance, male were almost double than female.

Studies all over the world suggested that in mania (Bipolar-I), there is equal 1:1 sex ratio **(Benjamin J. Sadock, Virginia A. Sadock).** It is equally prevalent in men and women, and is found across all cultures and ethnic groups **(Frederick K Goodwin and Kay R Jamison, 1990)**.

In our study M: F ratio is 2.27:1, indicating that men are more affected than female. Earlier studies showed that in Indian setting male are more affected than female. In hospital setting men are more presented than female **(Khanna R., Gupta N., & Shanker s.,(1992), Reddy, M. V. & Chandrashekhar, C.R.(1998), Ratendra Kumar, 2001)**.

Apart from these it may be due to increasing M: F population ratio in our population. One more factor is that female is more likely to be affected by depression and mixed episodes than mania **(Weissman,- M.M. & Klerman, G.L. 1985)**, and we have not included them in our study.

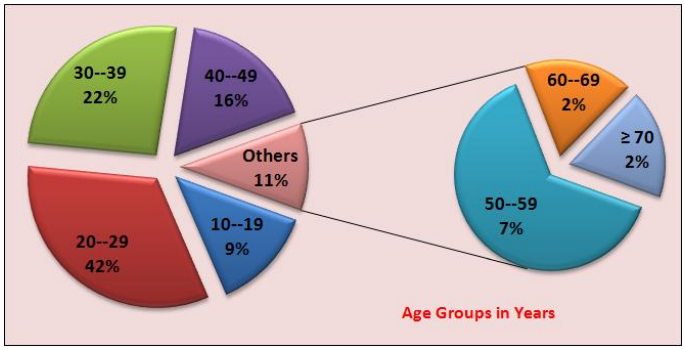

Chart I: Distribution of Cases According to Age Groups

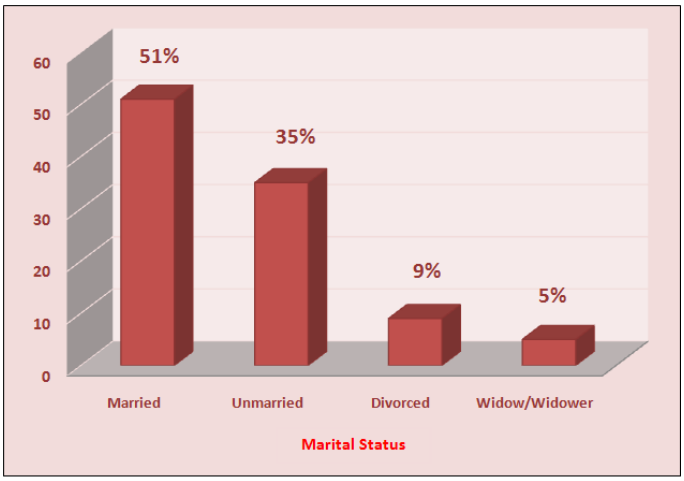

Chart II : Distribution of Cases According to Marital Status

❖ **Marital status: (Table I & Chart II)**

In our study 35 patients were unmarried while 51 patients were married. 9 patients were previously married but got divorced with the commonly reason of family disturbance. 5 patients were widow/widower.

The relationship between marital status and mood disorders is very complex. Being single or divorced/separated, for example, can be either a risk factor for mood disorder or the consequence of the negative life events generated by depressive and/or manic states. The rate of family breakdown (separation, divorce, chaotic family life) is elevated in bipolar I patients. Bipolar patients generate more negative life events and more interpersonal conflicts than patients with other diagnoses. **(Kessler RC, Walters EE, Forthofer MS, l998).**

❖ **Educational Status: (Table I & Chart III)**

The highest 38 patients were educated up to primary level of education following of which 29 patients were up to secondary level educated. 14 patients were illiterate and 13 patients had studied up to higher secondary level and only 6% patients were graduated.

❖ **Family Status: (Table I)**

69% patients were living in Nuclear family, while 31% patients were living in Joint family.

❖ **Religion: (Table I)**

67% patients were Hindu, 31% patients were Muslim and 2% patients were Sikh.

❖ **Socio-Economic status: (Table I & Chart IV)**

In our study maximum numbers of patients, 48% were from Class-II category of socio-economic status, followed by 28% patients from class-III. 17% patients were from belonging to class-I and 7% were from Class-IV.

The relationship between the socio-economic factors and mood disorders is also complex and multidimensional. However, as in the case of marital status and mood disorders, cause and effect may be reversed here too. Mood disorders (and particularly bipolar illness) can easily lead to unemployment, low income, divorce, substance abuse, etc., resulting in regression on Social classification scale. **(Judd LL, Akiskal HS, Schettler PJ, CoryellW, Maser J, Rice JA, SolomonDA, Keller MB, 2003)**

❖ **Domicile: (Table I)**

In our study 66 % people live in rural area, while 34 % people live in urban area.

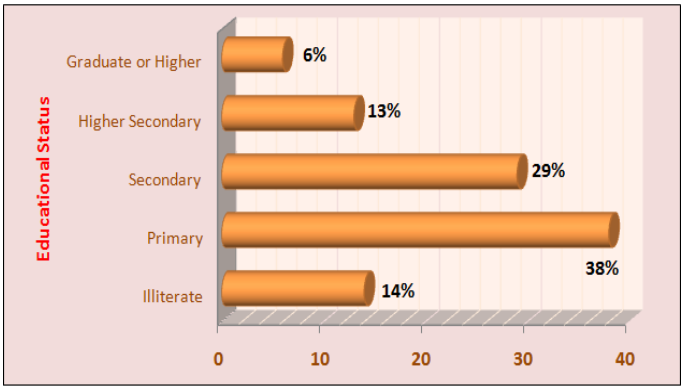

Chart III: Distribution of Cases According to Educational Status

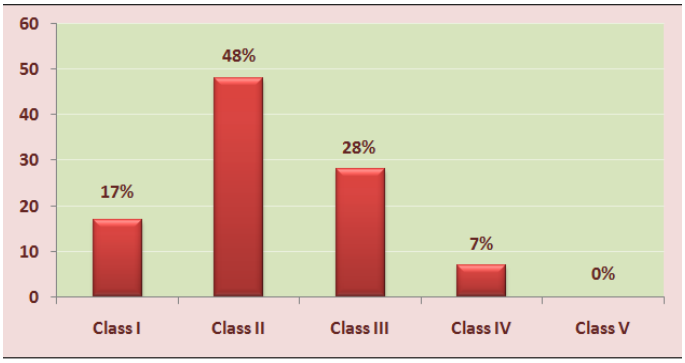

Chart IV: Distribution of Cases According to Socio-Economic Class

7.2 DISEASE CHARACTERISTICS:

❖ **AGE OF ONSET:**

Table II: Age of onset of First Manic Episode

Age in Years	No. of Patients
< 10	0
10-19	17
20-29	52
30-39	22
40-49	4
50-59	3
60-69	1
≥ 70	1

Earlier studies shows that mean age of onset for mania is 15-25 years and First occurrences are more likely before age 30, and recurrences are the rule. About Late adolescence and early adulthood are peak years for the onset of bipolar disorder **(Christie KA, Burke JD Jr, Regier DA, Rae DS, Boyd JH, Locke BZ, 1988).** 25% of first episodes occur before age 20 **(Winokur. G., Clayton, P.J. & Reich T., 1969)**.

In our study as shown in table II & chart V, supports the findings of previous studies. In our study majority of patients having onset of disease between 20-29 years of age (52%) & 91% patients having onset of disease between 10-39 years of age.

Onset of disease is very rare (5%) after 50 years of age. No one was having onset of disease after 70 years of age and before 10 years of age. Lowest age of onset was 11 years and highest age of onset in our study was 70 years of age.

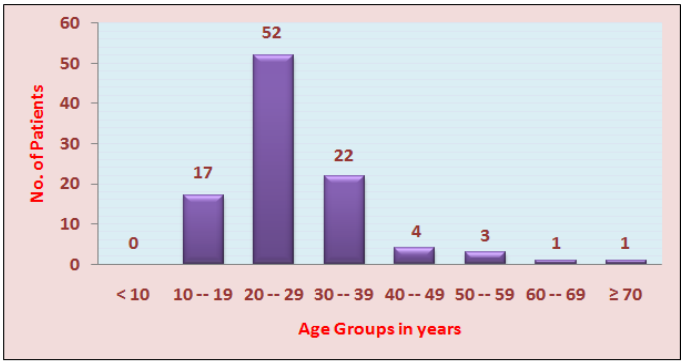

Chart V: Distribution of Cases According to Age of Onset

Table III: Association of Gender with Age of onset of Mania (Bipolar I Disorder)

Age of onset of Disorder	Gender						χ^2 =25.63 Df =8 P =0.0012
	Male	%	Female	%	Total	%	
11-15	06	85.71	01	14.29	07	100	
16-20	18	94.74	01	05.26	19	100	
21-25	21	80.77	05	19.23	26	100	
26-30	08	36.36	14	63.64	22	100	
31-35	07	87.50	01	12.50	08	100	
36-40	06	60	04	40	10	100	
41-45	00	0	01	100	01	100	
46-50	01	50	01	50	02	100	
≥ 51	02	40	03	60	05	100	
Total	**69**		**31**		**100**		

Our finding correlates with the finding of **McMahon et al, 1994** that bipolar onset is very rare for people under 10 years of age or over 40 years of age **(Shulman KL, Herrmann N., 1999).**

Table III shows association between gender and age of onset of Mania (Bipolar-I disorder). Table shows that male had mostly onset of disorder between 15 – 25 years of age, while female had onset of disorder between 20 – 30 years of age. On applying chi-square test our findings were statistically significant, p = 0.0012 (<0.05)

Table IV: Gender differences in age of onset

Gender	Male	Female	Overall
Frequency	69	31	100
Range (years)	11-52.5	13-70	11-70
Mean (years)	25.11	32.35	27.36
SD (years)	8.60	12.80	10.57

Table IV shows that mean age of onset of disease in our study was 27.36 ± 10.57 years. Mean age of onset of disease for female was 32.35 ± 12.80 years and for male was 25.11 ± 8.60 years.

On applying (unpaired) t – test, p = 0.0012 (<0.05), means differences of age of onset between male and female in our study were very significant statistically.

The difference between mean age of onset between male and female was 7.24 years in our study. Our study supports the finding of **McMahon et al, 1994** that mean age of onset of disease for woman is higher than male.

Men tend to get develop bipolar disorder slightly earlier than women; whereas most males become ill between 16 and 25 years old, most females develop symptoms between ages 25 and 30. **(Christie KA, Burke JD Jr, Regier DA, Rae DS, Boyd JH, Locke BZ, 1988).**

❖ **CLINICAL FEATURES:**

In our study adolescent, adult, elderly male and female patients were evaluated and observed for manic symptoms. They were applied YMRS for rating severity of manic state. Mean YMRS score of our study was 30.79 with SD of 7.20 and range was 18 to 48.

Most commonly seen symptoms making core for diagnosis of manic episode in our study were talkativeness and pressure to speech, decreased need for sleep, elated or euphoric mood (More common) or Irritable mood (less common), increased psychomotor activity and thought disturbances in form of Grandiosity and flights of ideas.

Most of patients have difficulty in attention and more than half patients had shown easy distractibility. Most of the patients have impaired insight and judgment. Paranoid and other delusions, and increase in sexual activities were less common.

In our study,

- Increased activity – 85%
- Increased Energy – 92%
- Irritability - 58%
- Aggression - 30%
- Increased Plans and Ideas - 88%
- Increased Self confidence – 90%
- Decreased sleep - 92%
- Increased Talkativeness - 90%
- Decreased inhibition - 92%
- Increased Optimism - 88%
- Elated or Euphoric Mood – 80%
- Irritable Mood - 20%

These findings are consistent with the findings of **Sigfried Kasper, Robert M. A. and Hirch Feld (2005)**. Our findings are also in association with the findings of studies of **Ratendra Kumar, Baxi N. P. Sinha, V. K. Sinha and Nandini Chakraborty, 2001.**

Clayton et al (1965), Winkour et al (1969) and Cassiedy et al (1998) had considered elevated mood, flights of ideas, psychomotor over-activity, Grandiosity and irritable aggression as cardinal features of mania. Our study supports their findings

❖ **EPISODIC PATTERN:**

In our study 49 patients were in their 1st Manic episode, 20 were in their 2nd, 18 were in their 3rd, 4 were in their 4, 6 in their 5th and 1 was in their 6th manic episode.

From the available history average duration of completed manic episodes and gap between each episode (Cycle Length, including depressive episodes) were obtained as shown in table No. V & VI.

Table V: Average duration of completed manic episodes:

No. of Manic Episode	1st	2nd	3rd	4th	5th
Total Completed Episodes	50	29	10	7	1
Range (months)	0.5-6	0.33-4	0.5-8.33	1-1.5	-
Mean (months)	1.76	1.62	2.42	1.14	1.33
SD	1.24	0.95	2.20	0.24	-

Mean length of Manic episodes were as following. For 1st manic episode it was 1.76 ± 1.24 months, for 2nd it was 1.62 ± 0.95 months, for 3rd it was 2.42 ± 2.20 months, for 4th it was 1.14 ± 0.24 months and for 5th it was 1.33 months (Table V).

Manic episodes usually begin abruptly and last for between 2 weeks to 4-5 months. Depressive episodes tend to last longer, though rarely for more than a year, except in the elderly **(Source: Surviving bipolar disorder, www.pendulum.org).**

Table VI : Average gap between each episode

Episodes	1-2	2-3	3-4	4-5	5-6
Total Patients	50	29	11	7	1
Range (Year)	0.5-22	0.5-30	0.67-22	2-8	-
Mean (Year)	5.45	5.15	6.33	4.43	1.25
SD	5.28	5.87	6.98	1.99	-

Average gap between each episode (Cycle Length) either manic or depressive was as following. Between1st – 2nd episode it was 5.45 ± 5.28 years, 2nd – 3rd it was 5.15 ± 5.87 years, 3rd

– 4th it was 6.33 ± 6.98 years, 4th– 5th it was 4.43 ± 1.99 years and between 5th - 6th it was 1.25 years (Table VI).

Previous studies had shown that more than 90% of individuals who have a single Manic Episode go on to have future episodes. Untreated patients with Bipolar I Disorder typically have 8 to 10 episodes of mania and depression in their lifetime. Often 5 years or more may elapse between the first and second episode, but thereafter the episodes become more frequent and more severe.

Our findings regarding Mean duration of Manic Episodes and Cycle length are in association with the study findings of **Mohit P. Chopra, K. V. Kishore Kumar, D. K. Subbakrishna, Sanjeev Jain, R. Srinivasa Murthy**, "The Course of Bipolar Disorder in Rural India", 2006.

❖ CO-MORBIDITIES:

In our study most common Psychiatric co-morbidity was intake of addictive substances (61%). Other co-morbidities were generalized anxiety disorder in 2%, panic disorder in 1%, OCD in 1%, suicidal behaviour in 3%, Borderline personality disorder in 1% and mild mental retardation in 1% patient. So anxiety spectrum disorders (4%) were 2nd most common psychiatric co-morbidity following substance use disorders.

Other significant medical co-morbidities were epilepsy in 2%, obesity in 2%, hypertension in 7%, diabetes in 3%, ischemic heart disease in 2%, hyper-thyroidism in 2%, migraine in 2%, irritable bowel syndrome in 1%, ulcerative colitis in 1% and HIV in 1% of studied patients.

Patients with major mood disorders are at increased risk of having one or more additional (co-morbid) psychiatric or medical disorders. Bipolar patients show more frequently co-morbid anxiety disorders, substance-use disorders, suicidal behaviour, as well as migraine headache, diabetes mellitus and hypertension. **(Brown ES, Suppes T, Adinoff B, Thomas NR, 2001, Rihmer Z, Szadoczky E, Furedi J, Kiss K, 200l).**

If bipolar I and bipolar II subgroups are analyzed separately, bipolar II patients have the highest rate of anxiety disorder co-morbidity, suicidal behaviour, and migraine headache, whereas bipolar I patients show most frequently co-morbid substance-use disorders**. (Rihmer Z, Kiss K., 2002)**. Our study findings are in association with these study findings.

8. MANIA & SUBSTANCE USE DISORDERS:

❖ FREQUENCY OF PARTICULAR SUBSTANCE USE AMONG SUBSTANCE USERS:

Substance use disorders, including abuse and dependence, are among the most common mental disorder in general population. Many studies show that bipolar disorder is a risk for substance use disorders. In our study term substance use disorders (not defined) is used for all patients taking addictive substances.

Disorder increases the risk of substance use disorder almost double. It may be to relieve tension, or may be due to same rewarding- mechanism affecting in substance use and in bipolar disorder **(Grant BF, Stinson FS, Dawson DA, et al, 2004, Kessler RC, 1995).**

Mood disorders may function as a casual risk factor for substance use disorder. It could be also used as a self medication. Alcohol might be used in an effort to control excessive energy during mania. Substance use disorder may be a consequence of the impulsivity and poor judgment of bipolar illness, which resolves once Mania resolves **(Schuckit MA, Tapert S, 2004).**

Rates of substance abuse/dependence also appear to be high in bipolar patients ranging in reports from 8-60% **(Brady, KT. & Sonne, S.C., 1995).** In the Epidemiological Catchment Area Program, more than 61% participants with bipolar disorder had any substance use disorder, the highest Axis-1 co-morbidity in bipolar disorder **(Regier DA, Farmer ME, Rae DS, et al, 1990).**

Our Study revealed that 61% patients were taking addictive substances. Findings were consistent with the previous studies.

Chart VI shows that from these 13% were female and 48% were male. In our study 41.94% (13 of 31) female and 69.57% (48 of 69) of male were involved in taking addictive substances during manic episode. Overall substance use disorders were found in higher amount (1.66 times) in male than in female.

In our study as shown in chart VII patients were mostly taking tobacco (60%), alcohol (9%) and cannabis (6%) which supports the finding of previous studies that most commonly abused substances by bipolar patients are tobacco, cannabis and alcohol **(Strakowski SM, DelBello MP, Fleck DE, et al 2000, Wilens TE, Biederman J, Millstein RB, et al, 1999).**

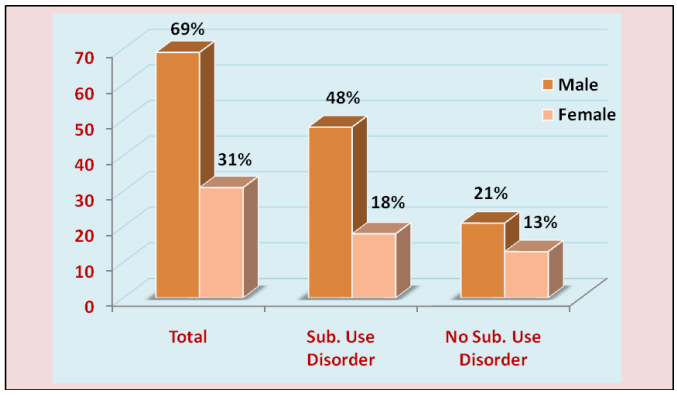

Chart VI: Frequency of substance use disorders among male & Female

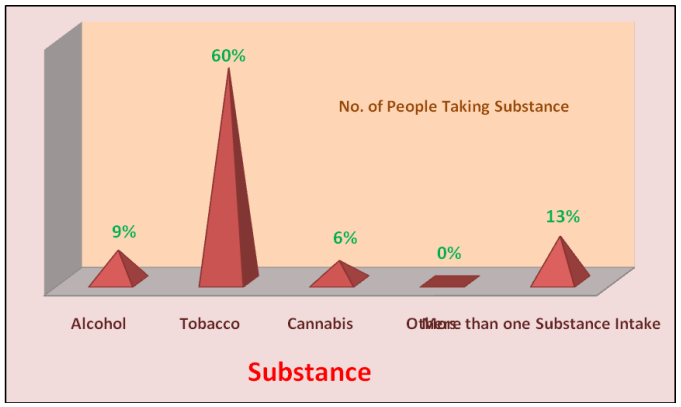

Chart VII: Showing Names of Substances and % of patients using them

In general population alcohol use is less compared to manic patients. The meta-analysis by **Reddy and Chandrashekar (1998)** revealed an overall prevalence of alcohol was 0.69% for general population in India. Studies show that about 6% patients of bipolar disorder are taking alcohol, which is almost similar to our study.

In bipolar disorder there is increase in alcohol use disorder. Study by **regeir** showed alcohol use in 11% in mood disorder

patients **(Azorin JM, Kaladjian A, Adida M, Hamouche EG, Hameg A, Lancrenon S, Akiskal HS, 2008).**

In our study 9% of patients were taking alcohol, which is consistent with previous studies that there is very high risk of alcohol use compared to general population in mania.

The rates among men and women of alcohol use were 11.9 and 1.7, respectively in a community-based study **(Gururaj *et al.*2004)**. In our study not even a single female was taking alcohol.

Our study findings are consistent with the studies that bipolar disorder woman have a very less lifetime history of alcoholism compared to male **(Regier DA, Farmer ME, Rae DS, et al, 1990).**

In general population 47% men and 14% of women—either smoked or chewed tobacco in India **(Frye MA, Altshuler LL, McElroy SL, et al, 2003).** National sample survey (1995-1996) and national family health survey in India shows prevalence of tobacco use in male and female approx 51.3/46.5 and 10.3/13.8 **(M RaniS, Bonu, 2009).**

Bipolar disorder increases the risk of tobacco use. Tobacco use is nearly as prevalent in bipolar disorder as it is in schizophrenia, with one report that 78% patients with bipolar disorder had ever smoked, with 65% smoking daily at the time of the study, **(De Leon J, Diaz FJ, Rogers T, Browne D, Dinsmore L, 2002)**.

Hughes et al. (1986) reported smoking-prevalence rates of 70% in bipolar outpatients, while **Gonzalez-Pinto et al. (1998)** reported that 63% of patients with bipolar disorder had lifetime histories of smoking and that 51% were current smokers. In our study 60% patients were- taking tobacco [Chewing 35%, smoking 30% and both forms- 5%] which is consistent with old studies.

General population surveys like the National Household Survey (NHS) in India show that lifetime use of cannabis was 4.1% and current use was 3.0% **(Mittal S, Chien JMN, 1998).** In our study 6% patients were taking cannabis which was higher than prevalence in general population, suggesting that in mania there is increase in cannabis use.

In our study 13% patients are taking more than one substance of abuse. Mostly they are using alcohol and cannabis with tobacco.

9. ASSOCIATION WITH SUBSTANCE USE DISORDER:

Table VII: Association of Demographic Variable with Substance Use- Disorders in Mania (Bipolar-I)

Variables	Substance Use Disorders						χ^2 , Df, p
	Yes	%	No	%	Total	%	
Sex							χ^2 = 5.76 Df =1 P = 0.02
Male	48	69.57	21	30.43	69	100	
Female	13	41.94	18	58.06	31	100	
Education							χ^2 = 7.13 Df =4 P =0.13
Illiterate	13	92.86	1	7.14	14	100	
Primary	22	57.89	16	42.11	38	100	
Secondary	16	55.17	13	44.83	29	100	
Higher Secondary	7	53.85	6	46.15	13	100	
Graduate or Higher	3	50	3	50	6	100	
Type of Family							χ^2 = 0.03 Df =1 P =0.86
Nuclear	42	60.87	27	39.13	69	100	
Joint	19	61.29	12	38.71	31	100	
Socio-Economic Class							χ^2 = 5.17 Df =3 P =0.16
Class I	10	58.82	7	41.18	17	100	
Class II	29	60.42	19	39.58	48	100	
Class III	15	53.57	13	46.43	28	100	
Class IV	7	100	0	0	7	100	
Class V	0	0	0	0	0	100	

Table VII calculation shows association between demographic variable (Gender, Education, Type of family and socio-economic class) of Mania (Bipolar-I) and substance use disorders.

For gender out of 31 female patients of Mania, 13 (41.94%) patients had substance use disorders and out of 69 male patients, 48 patients (69.57%) had substance use disorders. These differences in the findings of study were statistically significant, p value = 0.02 (<0.05). It shows that Male gender has higher incidence of substance use disorders than Female gender.

For education substance use disorders was present in 13 (92.86%) patients out of 14 illiterate patients, 22 (57.89%) patients out of 38 patients with primary education level, 16 (55.17%) patients out of 29 patients with secondary education level, 7 (53.85%) patients out of 13 patients with higher secondary education level and 3 (50%) out of 6 patients with graduation or higher education level. These differences in the

findings of study were statistically not significant, p value = 0.13 (>0.05).

In family type substance use disorders were present in 42 (60.87%) out of 69 patients with nuclear family and 19 (61.29%) patients out of 31 patients with joint family. These differences in the findings of study were statistically not significant, p value = 0.86 (>0.05).

For socio-economic status substance use disorders were present in 10 (58.82%) out of 17 patients of class-I, 29 (60.42%) patients out of 48 patients of class-II, 15 (53.57%) patients out of 28 patients of class-III and all (100%) patients of class-IV. These differences in the findings of study were statistically not significant, p value = 0.16 (>0.05).

Table VIII: Association of Demographic Variable with Substance Use- Disorders in Mania (Bipolar-I)

Variables	Substance Use Disorders						χ^2, Df, p
	Yes	%	No	%	Total	%	
Occupation							**χ^2 = 13.01 Df =5 P =0.02**
Study	1	16.67	5	83.33	6	100	
Unemployed	12	44.44	15	55.56	27	100	
Labourer	10	76.92	3	23.08	13	100	
Farmer	25	75.76	8	24.24	33	100	
Job	6	54.55	5	45.55	11	100	
Business	7	70	3	30	10	100	
Others	0	0	0	0	0	100	
Domicile							**χ^2 = 0.01 Df =1 P =0.92**
Rural	40	60.61	26	39.39	66	100	
Urban	21	61.76	13	38.24	34	100	
Marital Status							**χ^2 = 10.28 Df =1 P =0.02**
Unmarried	14	40	21	60	35	100	
Married	36	70.59	15	29.41	51	100	
Divorced	7	77.78	2	22.22	9	100	
Widow/ Widower	4	80	1	20	5	100	

Table VIII calculation shows association between demographic variable (occupation, domicile and marital status) of Mania (Bipolar-I) and substance use disorders.

In occupation substance use disorders were present in 1 (16.67%) out of 6 patients who are studying, 12 (44.44%) patients out of 15 patients who were unemployed (including housewives and retired), 10 (76.92%) patients out of 13 patients who were labourers, 25 (75.76%) patients out of 33 patients were who were farmers, 6 (54.55%) patients out of 11 patients who were doing job, 7 (70%) patients out of 30 patients who were involved in business. These differences in the findings of study were statistically significant, p value = 0.02 (<0.05). There is high rate of substance use disorders among manic patients, who were labourers and farmers. There is less chances of substance use disorders among students.

Among residential area substance use disorders were present in 40 (60.61%) patients out of 66 patients of rural area and 21 (61.76%) patients out of 34 patients of urban area. These differences in the findings of study were statistically not significant, p value = 0.92 (>0.05).

For marital status substance use disorders were present in 14 (40%) patients out of 35 unmarried patients, 36 (70.59%) patients out of 51 married patients, 7 (77.78%) patients out of 9 divorced patients, 4 (80%) patients out of 5 widow/widower patients. These differences in the findings of study were statistically significant, p value = 0.02 (<0.05). Findings suggest that there is high occurrence of substance use disorders among manic patients who are divorced, widow and widowers.

Table IX: Association of Substance Use- Disorders in Mania

Variables	Substance Use Disorders						χ^2, Df, p
	Yes	%	No	%	Total	%	
Past H/o							**χ^2 = 1.49 Df =2 P =0.74**
None	42	58.33	30	41.67	72	100	
Psychiatric Illness	3	50	3	50	6	100	
Physical Illness	17	70.83	7	29.17	24	100	
Family H/o							**χ^2 = 1.28 Df =3 P =0.74**
None	39	57.35	29	42.65	68	100	
Psychiatric illness in First Degree Relative	11	68.75	5	31.25	16	100	
Psychiatric illness in Second Degree Relative	6	66.67	3	33.33	9	100	
Physical Illness	9	69.23	4	30.77	13	100	

Table IX calculation shows association of Past H/O and Family H/O of Manic (Bipolar-I) patients with substance use disorders. For past H/O substance use disorders were present in 42 (58.33%) patients out of 72 patients who were not having any significant Past H/O any psychiatric and physical illness, 3 (50%) patients out of 6 patients with past H/O psychiatric illness and 17 (70.83%) patients out of 24 patients with past

H/O physical illness. These differences in the findings of study were statistically not significant, p value = 0.47 (>0.05).

For family H/O substance use disorders were present in 39 (57.35%) patients out of 68 patients who were not having any significant family H/O any psychiatric and physical illness, 11(68.75%) patients out of 16 patients with H/O psychiatric illness in first degree relatives, 6 (66.67%) out of 9 patients with H/O psychiatric illness in second degree relatives and 9 (69.23%) patients out of 13 patients with family H/O significant physical illness. These differences in the findings of study were statistically not significant, p value = 0.74 (>0.05).

From tables VII, VIII, IX showed that there was high occurrence of substance use disorders among farmers, labourers, widow/widowers and divorced patients suffering from mania (Bipolar-I disorder). In male there was high risk of substance use disorders than female manic patients. Our study finding were related to the findings of **Kessler RC, 1995,** studies of **Schuckit MA, Tapert S, 2004** and studies of **Regier DA, Farmer ME, Rae DS, et al, 1990.**

10. SUBSTANCE INTAKE PATTERN DURING CURRENT MANIC EPISODE:

Actual pattern of substance intake during manic episode itself is not studied in detail in past. Our study focuses on this issue.

In our study as shown in chart VIII among 63.93% (39 of 61) patients had increase in substance intake (3.18 ± 0.77) times of intake before episode), 4.92% (3 of 61) had decreased, 13.11% (8 of 61) had same and 4.92% (3 of 61) had stopped substance intake. 13.11% (8 of 61) had newly started to take addictive substances during current manic episode.

In our study as shown in chart IX, most of manic patients had increase in substance intake. Most patients had increase in substance intake between 2-4 times of original substance intake, (29.51% - 18 of 61, 46.15% - 18 of 39). Highest increase was about 11 times of original intake.

Chart VIII: Pattern of Substance intake During Manic Episode

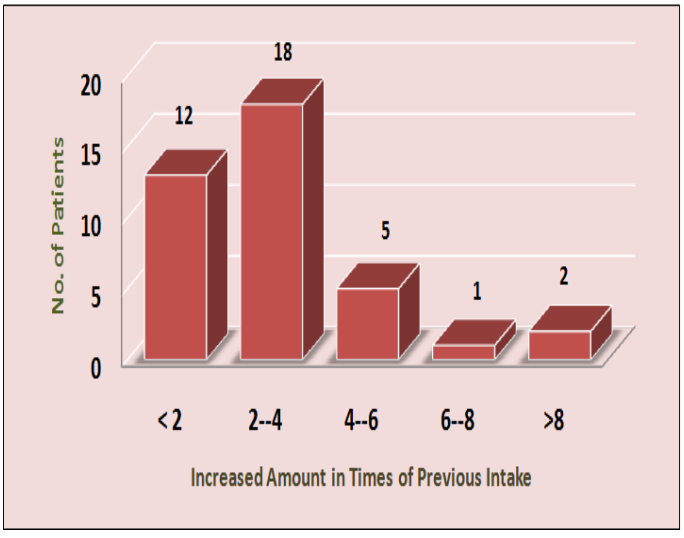

Chart IX: Showing Amount of Increase in substance intake During Current Manic Episode

Table X: Association of Increase in Substance Intake with Particular Substance

Substance	Increase in Substance Intake						$\chi^2 = 5.55$ Df = 2 P= 0.06
	Yes	%	No	%	Total	%	
Tobacco	38	63.33	22	36.67	60	100	
Alcohol	9	100	0	0	9	100	
Cannabis	5	83.33	1	16.67	6	100	
Others	0	0	0	0	0	100	

Table X shows association of particular substances with increase intake of substance intake during current manic episode.

Increase in substance intake during current manic episode was present in 38 (63.33%) patients out of 60 patients taking tobacco, all (100%) patients taking alcohol and 5 (83.33%) patients out of 6 patients taking cannabis. These differences in the findings of study were statistically not significant, p value = 0.06 (>0.05). Means that amount of each substance of addiction is increased during manic episode which is in association with the studies of **DelBello MP, Fleck DE, et al 2000**.

Some patients had same amount, decrease amount and some had stopped intake. But their percentages were very less. Some had stopped substance intake and some had started to take substance after the onset of manic episode. Main reason of stopping or decreasing substance intake were

- Restriction by relative during the episode
- Restrain by relatives
- Economic problems
- Some stopped following advice of the doctor
- More religious involvement during manic episode
- As patient is admitted then due to hospital rules and restriction.

11. FIRST CONTACT PERSON AT ONSET OF ILLNESS:

Table XI: First contact person at onset of illness:

First Contact Person	No. Of Patients (%)
Faith Healer	33
General Practitioner	34
MD (Physician, Gynaecologist, Surgeon)	15
Psychiatrist	18

As shown in table XI, as like other psychiatric illness, most of the patients and their relatives had contacted general

practitioners (34%) and faith healers (33%) at onset of disorder. Very less people had directly contacted the psychiatrist (18%). Most patients were referred to psychiatrist by general practitioner and physicians. Many people after having no improvement in faith healing, went to doctors and they refer them to psychiatrists. Our study findings were in association with the findings of **Gururaj G, Isaac MK, 2004.**

12. SUMMARY AND CONCLUSION

In this retrospective observational study of "Phenomenology of Mania (Bipolar-I)", all the patients visiting the Psychiatry Department of our hospital, on outdoor patient basis were screened for the Manic episode and later Socio-Demographic data, Age of onset of disorder, Pattern of Episodes, co-morbidities, Pattern of substance intake in current manic episode and severity of the current manic episode were studied in detail.

The data were tabulated and analyzed. Summary and conclusion of results are as following:

In this study mean age of patients was 32.67 years with range of 11-70 years and SD = 12.77. In this epidemiological study majority patients were as following.

69% were Male and 31% were Female patients. 59% patients were in age group of 20-39 years, 51% were married, 38% had studied up-to primary level, 69% belonged to nuclear family and 76% were from middle socioeconomic class.

Most common age of onset for bipolar I disorder was between 20-29 years (52%). 91% patients were having onset of illness between age of 10-39 years.
Mean age of onset of first episode of Bipolar was 27.29 ± 10.57 years. Mean age of onset for male was 25.11 ± 8.60 years, and for female it was 32.35 ± 12.80 years. Difference in age of onset between male and female was statistically significant.

Most commonly patients had presented with Talkativeness, Hyperactivity, Decreased sleep, Elation, Grandiosity, Flights of ideas and Distractibility. Mean YMRS score of studied patients was 30.79.

Mean length of Manic episodes were as following. For 1^{st} manic episode it was 1.76 ± 1.24 months, for 2^{nd} it was 1.62 ± 0.95 months, for 3^{rd} it was 2.42 ± 2.20 years, for 4^{th} it was 1.14 ± 0.24 months and for 5^{th} it was 1.33 months.

Average gap between each episode (Cycle Length) either manic or depressive was as following. Between1^{st} – 2^{nd} episode it was 5.45 ± 5.28 years, 2^{nd} – 3^{rd} it was 5.15 ± 5.87 years, 3^{rd} – 4^{th} it was 6.33 ± 6.98 years, 4^{th}– 5^{th} it was 4.43 ± 1.99 years and between 5^{th} - 6^{th} it was 1.25 years.

Most common co-morbidity was Substance use disorders, found in 61% of patients. Most common medical co-morbidities were Hypertension (7%) and Diabetes (3%).

Most commonly used substance was tobacco in 60% of patients. During manic episode mostly there is increase in substance intake (63.93% patients among substance users) while 13.11% patients among substance users had started to take addictive substances during current manic episode.

On comparing demographic variables of Mania (Bipolar-I) for substance use disorder, high occurrence of substance use disorders were found among farmers, labourers, widow/widowers and divorced patients. In male there was high risk of substance use disorders than female manic patients. Other demographic variables of Mania had no significant statistical association with substance use disorders.

16% of first degree relatives of studied patients had psychiatric illness, most common being Bipolar-I disorder (5%) followed by Depression (4%). 12% of second degree relative had psychiatric illness, most common was Schizophrenia (4%) followed by Bipolar-I disorder (3%). 4% patients had more than one relative with psychiatric illness.

Majority patients and their relatives 34% had first contacted to general practitioners and 33% had contacted faith healers for treatment. Only 18% had contacted Psychiatrist directly for the first time.

The study was intended to find the epidemiology, phenomenology, episodic pattern, co-morbidities and substance intake pattern. But to make the results more standardized there should be a longitudinal study.

13. LIMITATION OF STUDY:

- It was retrospective observational study and not a longitudinal.
- This was a hospital-based study and results cannot be generalized to the whole community.
- In our study manic patients lacked direct comparison with a normal control group, another psychiatrically ill group or an epidemiologic sample.
- Substance use disorders were not defined.
- There might be some recall bias as we were asking the past events, going retrospectively.

14. STRENGTH:

Despite these limitations our study had strengths like,

- Up to our knowledge it was the first study of Mania associated with phenomenology, in this geographic region of our state.
- Up to our knowledge its first study to actually comparing pattern of substance intake during manic episode itself.

15. FUTURE RECOMMENDATIONS:

We hope that studies in this area will be undertaken in the future so epidemiologic factors, episodic pattern, co-morbidities and substance intake pattern of mania particular and bipolar disorders in general will further clarified empirically in our culture.

References

[1] Akiskal HS, Benazzi F (May 2006). "The DSM-IV and ICD-10 categories of recurrent [major] depressive and bipolar II disorders: evidence that they lie on a dimensional spectrum". J Affect Disord. 92 (1): 45–54.

[2] Alloy LB, Abramson LY, Urosevic S, Walshaw PD, Nusslock R, Neeren AM. (2005) The psychosocial context of bipolar disorder: environmental, cognitive, and developmental risk factors. Clinical Psychology Review. 2005 December; 25(8):1043–75.

[3] American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 4th, text revision (DSM-IV-TR) ed. 2000.

[4] Amy K. Cuellar, Sheri L. Johnson and Ray Winters (2005) Distinctions between bipolar and unipolar depression Clinical Psychology Review, Vol 25, 3, May, P 307-339

[5] Angst, J; Selloro, R (September 15, 2000). "Historical perspectives and natural history of bipolar disorder". Biological Psychiatry 48 (6): 445–457.

[6] **Azorin JM, Kaladjian A, Adida M, Hamouche EG, Hameg A, Lancrenon S, Akiskal HS,** CNS Spectrum. Volume 13, No 9, 2008.

[7] Barden N., Harvey M., Gagne B., Shink E., Tremblay M., Raymond C., Labbe M., Villeneuve A., Rochette D., Bordeleau L., Stadler H., Holsboer F., and Muller-Myhsok B. (2006). "Analysis of single-nucleotide polymorphisms in genes in the chromosome 12Q24.31 region points to P2RX7 as a susceptibility gene to bipolar affective disorder." American Journal of Medicine and Genetics B Neuropsychiatry Genetics.

[8] Basco, Monica Ramirez, The Bipolar Workbook: Tools for Controlling Your Mood Swings, 2006.

[9] Bauer MS, Mitchner L (January 2004). "What is a "mood stabilizer"? An evidence-based response". Am J Psychiatry 161 (1): 3–18.

[10] Benazzi F. (2007) Is there a continuity between bipolar and depressive disorders? Psychotherapy Psychosomatic for Psychosomatic Disorders. 76(2):70-6.

[11] Biederman, Kwon, Wozniak, Mick, Markowitz, Fazio and Faraone (2004) Absence of gender differences in pediatric bipolar disorder: Findings from a large sample of referred youth. Journal of Affective Disorders. 83 207–214

[12] Biederman, Mick, Faraone, Spencer, Wilens and Wozniak (2003) Current concepts in the validity, diagnosis and treatment of paediatric bipolar disorder. International Journal of Neuropsycho-pharmacology. 6, 293–300

[13] Blairy S, Linotte S, Souery D, et al. (April 2004). "Social adjustment and self-esteem of bipolar patients: a multi-centric study". Journal of Affective Disorder 79 (1–3): 97–103.

[14] Brady, KT. & Sonne, S.C. (1995) The relationship between substance abuse and bipolar disorder. Journal of Clinical Psychiatry, 56 (Suppl. 3), 19-24

[15] Brown ES, Suppes T, Adinoff B, Thomas NR. Drug abuse and bipolar disorder: co-morbidity or misdiagnosis? Juvenile Affective Disorder 2001; 65:105–115.

[16] Carlson G, Meyer S. Phenomenology and diagnosis of bipolar disorder in children, adolescents, and adults: Complexities and developmental issues Development and Psychopathology 2006; 18:939–969

[17] Carlson, Bromet, Driessens, Mojtabai and Schwartz (2002) Age at onset, childhood psychopathology, and two-year outcome in psychotic bipolar disorder. Am J Psychiatry. 159 307–9.

[18] **Castro LM, Gallant M, Niles LP (December 2005).** "Novel targets for valproic acid: up-regulation of melatonin receptors and neuro-trophic factors in C6 glioma cells". J. Neurochem. 95 (5): 1227–36.