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Incidence of Cycloid Psychosis

A Clinical Study of First-admission Psychotic Patients

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Summary. The concept of cycloid psychosis has gained increasing acceptance during recent decades. Using the diagnostic criteria of Perris and Brockington, an intelligible delineation of a group of patients has been obtained. Few epidemiological data on cycloid psychosis have been reported so far. The objective of the present study was to describe the one-year incidence of cycloid psychosis in a clinical sample. The diagnostic registers of all patients hospitalized for a functional or an organic psychosis and discharged in the year 1983, in Lund, Sweden were investigated. 514 patients were identified of whom 83 were admitted to hospital for the first time. 29 of these patients had a functional psychosis and were below the age of 50. In this age group 7 cases (4 women, 3 men) fulfilled the diagnostic criteria of cycloid psychosis and thus constituted almost one fourth of all first admissions of functional psychoses that year. The one-year incidence for first admission in cycloid psychosis was 5.0 per 100000 inhabitants in women and 3.6 per 100000 inhabitants in men within the age group 15–50 years in the catchment area of 163175 persons. We conclude that cycloid psychosis consitutes a considerable proportion of functional psychoses in both sexes.

Key words: Cycloid psychosis – Psychosis – Incidence – Symptomatology

Introduction

Historical background

The concept of cycloid psychosis has evolved gradually from the middle of the nineteenth century. The French psychiatrist Morel (1860) then introduced the concept of "degeneration" and at the end of the century Magnan (1893) described the "bouffées délirantes de les dégenerées" or "degeneration-psychoses". The term degeneration implied a heredoconstitutional disposition. The psychotic condition described by Magnan was characterized by a sudden onset, a polymorphic symptomatolgoy, a brief duration and a recurrent course (Maj 1984). In Germany this concept of degeneration psychosis was adopted by Wernicke, who did not accept Kraepelin's dichotomous classification of non-organic psychotic episodes into dementia precox and manic-depressive illness. Wernicke (1900) described the motility psychosis (Motilitäts-psychose). This condition implied a constellation of symptoms that occurred in a wide range of disease processes. Kleist (1928) introduced the term cycloid psychosis in which he included the motility and confusion psychosis. Leonhard (1961) elaborated the work of Kleist and added a third sub-group, the anxiety-happiness psychosis. Originally, Lenohard used the denomination atypical psychosis but later on he preferred the term cycloid psychosis to 'maintain the nosological independence of this group of psychotic disorders from the affective as well as from the schizophrenic syndromes' (Perris 1973). Leonhard emphasized the good prognosis with no defect even after recurrent episodes.

Concept of Cycloid Psychosis

Many psychiatrists have described psychotic syndromes related to the cycloid psychosis, although not identical, such as the acute schizoaffective psychoses (Kasanin 1933) and the schizophreniform states (Langfeldt 1939). In Japan, Mitsuda (1962) used the term atypical psychosis to refer to a periodic psychosis with a usually favourable prognosis. The clinical picture is characterized by rapid fluctuation and consists of emotional disturbances, delusions and hallucinations. Mitsuda also pointed out a genetic predisposition. Detailed reviews on the evaluation of the concept of cycloid psychosis have been done by Vaillant (1964), Maj (1984), Tsuang and Simpson (1984) and Perris (1988). The clinical con-

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cept of cycloid psychosis has been further elaborated by Perris and Brockington (1981). They have attempted to define strict diagnostic criteria for the condition based on course of illness and symptom constellations. They emphasize the very acute onset of the psychosis, the polymorphic symptomatology and the frequent occurrence of confusion. The diagnostic concept of cycloid psychosis, though still controversial, has gained increasing acceptance, and will be included in ICD-10. Extensive clinical studies on cycloid psychosis have been performed by many authors (Kaij 1967; Wålinder 1972; Perris 1974; Cutting et al. 1978; Brockington et al. 1982a, b; Zaudig and Vogl 1983; Maj 1990 and Beckmann et al. 1990).

Table 1. List of items for psychopathology, time of debut and social competence

1. *Confusion*
   Perplexity, thematic incoherence, misrecognition of people, disorientation
2. *Delusions*
   Hypochondriac, depressive, grandiose, grandiosity, bizarre, reference ideas, sense of being observed, controlled, thought broadcasting, withdrawal and insertion, persecutory, somatic, religious, nihilistic, jealousy, delusional mood
3. *Hallucinations*
   Auditory, visual, gustatory, olfactory, tactile
4. *Perceptional disturbances*
   Depersonalization, derealization, dishabituation
5. *Affects*
   Anxiety, pananxiety, happiness, ecstasy, rapid/phasic affective swings, anhedonia, emptiness of feeling
6. *Motility disturbances*
   Hyperactivity, psychomotor agitation/retardation, hypokinesia, hyperkinesia, rapid/phasic, motility swings
7. *Mood syptoms*
   Depressed mood, diurnal rhythm, latency, passivity, loss of interest, energy or appetite, weight loss, feelings of worthlessness, inappropriate guilt, recurrent thoughts of death, suicidal ideation
   Elevated mood, inflated self-esteem, decreased need for sleep, pressure to keep talking, flight of ideas, global altruism, hypersexuality, obtrusiveness, watchfulness
   Rapid/phasic mood swings
8. *Catatonic behaviour*
   Stupor, catalepsy, stereotypies, echopraxia, echolalia, negativism, mutism
9. *Formal thought disorder*
   Blocking, crowding of thoughts, neologism, incoherence
10. *Time of debut*
    Symptoms developing over a day, a week, a month or over more than a month
11. *Social competence*
    Reduced working ability, reduced self-care, isolation
12. *Lack of insight into disease*

Epidemiological Data

So far only few epidemiological data have been published. We have previously performed an analysis on the incidence and risk in the 1947 cohort of the Lundby Study (Lindvall et al. 1986). The purpose of the present study was to estimate the proportion of first-admission patients with cycloid psychosis in relation to all first-admission patients with functional psychosis. The 1-year incidence rate of first-admission patients with cycloid psychosis was also calculated.

Method

Subjects

The diagnostic registers of all patients with functional or organic psychosis who were hospitalized and discharged in 1983 at the Department of Psychiatry and the Department of Child and Youth Psychiatry, University Hospital, Lund, were investigated. These two institutions were the only ones that provided psychiatric inpatient care in the catchment area. The organic group included patients with different types of dementia and alcohol induced psychosis, other toxic psychosis, epileptic psychosis and psychosis associated with brain damage or other somatic disorder. The diagnostic classification used at that time was ICD-8. The clinicians were also well acquainted with the diagnostic concept of cycloid psychosis, using the criteria of Leonhard (1961) and Perris (1974). Since cycloid psychosis was not represented in ICD-8, the code for psychosis NUD was considered applicable in the diagnostic register. The patients admitted to hospital for the first time were selected and included in the study, first-admission patients below the age of 50 years being studied separately. The number of persons living in the selected catchment area was registered separately as to sex and age (National Central Bureau of Statistics, Stockholm,

Table 2. Diagnostic criteria for cycloid psychosis (Perris and Brockington 1981)

1. An acute psychotic condition, not related to the administration or the abuse of any drug or to brain injury, occurring for the first time in subjects in the age range 15–50 years.
2. The condition has a sudden onset with a rapid change from a state of health to a fullblown psychotic condition within a few hours or at most a very few days.
3. At least 4 of the following must be present.
   a. Confusion of some degree, mostly expressed as perplexity or puzzlement
   b. Mood-incongruent delusions of any kind: most often with a persecutory content
   c. Hallucinatory experiences of any kind, often related to themes of death
   d. An overwhelming, frightening experience of anxiety, not bound to particular situations or cirumstances (pananxiety)
   e. Deep feelings of happiness or ecstasy, most often with a religious colouring
   f. Motility disturbances of an akinetic or hyperkinetic type which are mostly expressional
   g. A particular concern with death
   h. Mood swings in the background and not so pronounced as to justify a diagnosis of affective disorder
4. There is no fixed symptomatological combination; on the contrary, the symptomatology may change frequently during the episode and shows a bipolar character.

Table 3. Diagnostic distribution, sex, mean age and mean time in hospital of first-admission patients with a functional psychosis

Diagnosis	Age [years]	Sex			Mean age at first admission [years]			Mean time in hospital [days]		
		Men	Women	Total	Men	Women	Total	Men	Women	Total
Cycloid psychosis	≤50	3	4	7	19 (16–23)	26 (18–44)	23	77 (16–147)	58 (13–105)	66
Schizophrenia	≤50	8	6	14	27 (21–37)	33 (22–49)	30	126 (9–332)	74 (12–205)	103
	>50	0	1	1	–	71	71	–	20	20
Psychotic mood disorder	≤50	1	3	4	25	35 (20–47)	33	30	60 (48– 73)	52
	>50	7	7	14	58	68	63	32	26	29
Atypical psychosis	≤50	0	4	4	–	33 (26–45)	33	–	23 (5– 40)	23

Table 4. Type of onset and symptomatology of the four first-admission patients with atypical psychosis, (DSM-III-R)

Symptoms	Pat. 1, female	Pat. 2, female	Pat. 3, female	Pat. 4, female
Onset				
within hours			×	
within days	×	×		×
Confusion				
Delusions	×[a]			
Hallucinations				
Anxiety	×	×	×	×
Happiness (ecstasy)				
Motility disturbance		×	×	×
Concern with death				×
Mood swings	×		×	
Decreased need for sleep		×	×	×
ICD-8 (record)	299.99 Psychosis NUD	299.99 Psychosis NUD	299.99 Psychosis cycloides	299.99 Psychosis postpartum

[a] Delusional mood

1983), forming the basis for calculation of incidence rate for different diagnostic groups.

Diagnostic Procedure

All psychiatric symptoms in the record of each fist-admission patient were registered according to a special manual consisting of 86 chosen items (Table 1). These items covered type of onset of symptoms, different types of psychopathology and level of social functioning. All characteristic cycloid symptoms according to the diagnostic criteria given by Perris and Brockington (1981) were included (Table 2). Symptoms belonging to schizophrenic and mood disorders were also listed in the manual. The final diagnostic evaluation was performed blindly by one of us (M.L.). All patients were diagnosed according to DSM-III-R (American Psychiatric Association, 1987) and assessed regarding a possible case of cycloid psychosis. For a diagnosis of cycloid psychosis the criteria given by Perris and Brockington had to be fulfilled. We included increased psychomotor agitation among motility disturbance, since it was considered synonymous with a speeding up of reactive and expressive movements, which is the central characteristic in hyperkinesia. On the analogy of this, we also included psychomotor retardation as an example of a motility disturbance. The motility symptoms are to be distinguished from a stereotyped catatonic behaviour. According to the criteria of Perris and Brockington, we excluded patients with psychotic conditions related to the administration or the abuse of any drug or to brain injury.

Results

Diagnostic Distribution

Five hundred and fourteen patients suffering from a psychotic disorder were hospitalized and discharged in 1983. Three hundred and sixty of these patients had a functional psychosis and 154 an organic psychosis. In the whole group of 514 patients, there were 83 first admissions altogether (16%). Thirty-two of these patients were below 50 years of age. Of these, only 3 were classified as having an organic psychosis. One patient had an alcohol withdrawal delirium and the other two an alcohol hallucinosis. The diagnostic distribution of the patients with a functional psychosis is seen in Table 3. Cycloid psychosis (Perris and Brockington) was diagnosed in 7 patients (24.1%), schizophrenia (DSM-III-R) in 14 patients (48.3%) and psychotic mood disorder (DSM-III-R) in 4 patients (13.8%). Three of the patients with

Table 5a and b.

a. Age, type of onset and diagnostic variables of cycloid psychosis according to Perris and Brockington of the seven first-admission patients with cycloid psychosis

Age at onset (years)	Pat. 1, female, 44	Pat. 2, male, 19	Pat. 3, male, 23	Pat. 4, female, 23	Pat. 5, female, 20	Pat. 6, male, 16	Pat. 7, female, 18
Type of onset							
within hours	×[a]			×[a]	×[a]	×	
within days		×	×				×
Confusion		×	×		×	×	×
Delusion	×	×	×	×	×	×	×
Hallucination		×	×	×	×	×	
Anxiety	×	×			×	×	×
Happiness (ecstasy)	×				×	×	
Motility disturbance	×	×	×	×	×	×	×
Concern with death	×						×
Mood swings	×		×	×		×	

b. Further symptoms and diagnosis according to DSM-III-R and ICD-8 of the seven first-admission patients with cycloid psychosis

Further symptoms							
Elevated/irritable mood	×		×			×	
Flight of ideas	×					×	
Pressure to keep talking			×		×		
Decreased need for sleep	×	×			×		
Dishabituation	×					×	
Depersonalization					×	×	
DSM-III-R	Manic episode	Schizophreniform disorder	Manic episode	Schizophreniform disorder	Atypical psychosis	Manic episode	Atypical psychosis
ICD-8 (record)	299.99 Psychosis cycloides	299.99 Psychosis NUD	299.99 Psychosis cycloides	299.99 Psychosis NUD	296.88 Psychosis cycloides	296.30 Psychosis mano-depressiva typus circularis	298.99 Psychosis reactiva NUD

*Prodromal symptoms were present (see text)

mood disorder had a major depression and one a manic episode. Atypical psychosis (DSM-III-R) was diagnosed in 4 patients (13.8%). Atypical psychosis or psychotic disorder not otherwise specified is according to DSM-III-R a disorder in which there are psychotic symptoms (delusions, hallucinations, incoherence, marked loosening of associations, catatonic excitement or stupor, or grossly disorganized behaviour) that do not meet the criteria for any other nonorganic psychotic disorder. Psychoses with confusing clinical features that make a more specific diagnosis impossible belong to this group. Of the four female patients with an atypical psychosis one had a postpartum psychosis 2 weeks after childbirth (Table 4). Another patient in the group of atypical psychosis was in the medical record diagnosed as a cycloid psychosis, but she did not fulfill the criteria of Perris and Brockington (Table 4). All the four atypical patients had an acute onset and suffered from anxiety while three of them also had a motility disturbance, each symptom typical of a cycloid psychosis. One patient had a delusional mood, while delusions were observed in every one of the 7 patients in the cycloid group (Table 5a). That was a significant difference (0 out of 4, 7 out of 7, difference $P < 0.01$, fourfold table test) between these diagnostic groups.

Clinical Characteristics of the Patients with Cycloid Psychosis

Clinical findings of the seven patients with cycloid psychosis according to Perris and Brockington are shown in Table 5a and 5b. Three patients had prodromal symptoms with various combinations of nervousness, sleep disturbance, hyperactivity and in one case ideas of being controlled. All the patients had an acute onset within hours or within days of a florid psychotic state. The most frequent symptoms were delusion and motility disturbance, which were seen in every case. Two patients had persecution delusions. Another two patients had bizarre ideas and ideas of reference respectively. Three patients had, besides persecution delusions, also bizarre and/or grandiose delusions or ideas of reference. All patients had a motility disturbance in the form of hyperkinesia with an increase in activity and/or psychomotor agitation. Of the five patients with hallucinations all but one had auditory hallucinations, for instance hearing the

Table 6. One-year rate of first admissions per 1000 inhabitants in different groups of functional psychosis. Age interval 15–50 years

Patients	Psychiatric diagnosis				
	Cycloid psychosis[a]	Schizo-[b] phrenia	Psychotic mood disorder[b]	Atypical psychosis[b]	Functional psychosis (total)
Men	0.036	0.097	0.012	0	0.145
Women	0.050	0.075	0.037	0.050	0.211
Total	0.043	0.086	0.025	0.025	0.178

[a] Perris and Brockington (1981)
[b] DSM-III-R (American Psychiatric Association 1987)

voice of a relative quite briefly or hearing a ticking watch and a tooting sound. One patient had also visual hallucinations and could see God and Jesus. Another patient felt the scent of ether (which reminded him of an operation) and could see different colours in front of him. Five of the seven cycloid patients had some type of confusion with perplexity, misrecognition of people, thematic incoherence and/or disorientation.

One of the patients (Pat. 4) had her cycloid psychosis about 3 months after childbirth.

Diagnosis (DMS-III-R and ICD-8) of Patients with Cycloid Psychosis

The diagnostic distribution according to DSM-III-R and the original diagnosis in the record (ICD-8) among the patients with cycloid psychosis are given in Table 5b. The symptoms were classified (DSM-III-R) as belonging to the manic episode of a bipolar disorder in three patients, to a schizophreniform disorder in two patients and to an atypical psychosis in two of the patients. The diagnosis in the record was in five of the seven cycloid patients cycloid psychosis or non-specific psychosis.

Age of Onset and Hospital Stay. Comparison Between Diagnostic Groups

In this clinical sample of seven first-admission patients with cycloid psychosis the mean age of onset was lower for the three men than for the four females (19 and 26 years respectively) (Table 3). The duration of current hospital stay was longer in the males than in the females (77 and 58 days respectively) (Table 3). When comparing the age of onset in the different diagnostic groups (Table 3), there was a significant difference between patients with cycloid psychosis and atypical psychosis (DSM-III-R) ($P = 0.04$, Wilcoxon's Test). The cycloid patients had a lower age of onset. There were no significant differences regarding duration of hospital stay.

Incidence

The 1-year incidence rate of first admission for the different functional psychoses is given in Table 6. In all 163175 persons, 80475 women and 82700 men between 15 and 50 years of age) were living in the catchment area in 1983. The 1-year incidence for cycloid psychosis was calculated at 7/163175 or 0.043 per 1000 inhabitants in this age interval. The 1-year incidence for women was 0.050/1000, and for men, 0.036/1000 inhabitants. The 1-year incidence of schizophrenia was 2.7 times as high as for cycloid psychosis in men and 1.5 times as high in women. The 1-year incidence of cycloid disorder was three times as high in male patients and 1.4 as high in females as psychotic mood disorder in this age group. The incidence of atypical psychosis (DSM-III-R) was identical with that of cycloid psychosis in women.

Discussion

The delineation of cycloid psychosis from other psychotic states has been difficult due to different diagnostic traditions and probable overlapping of diagnostic groups. This has made it difficult to evaluate the occurrence of the disorder. In a search for commonly accepted and strict diagnostic criteria, those of Perris and Brockington were preferred for the purpose of this study. There were few problems in identifying patients with the diagnosis of cycloid psychosis due to the amounts of data available. The inclusion criteria involve a rapid onset of the psychotic condition within hours up to a few days. Rapidity of onset is however not always present, as was shown among others by Brockington and Perris (1982b), who found that only 43% of the cycloid patients had an "acute onset" (within a few days or a few hours). Cutting (1978) considered acuteness of onset to be present when patients had symptoms of cycloid psychosis for less than a month and that occurred in 44% in his material. An insidious onset of the first episode of illness was shown in one fourth of the patients as described by Perris (1974). The prodromal symptoms were of an anxiety-depressive type. The diagnostic problem of how to define an acute onset is exemplified by one patient in our study. She manifested prodromal symptoms in the form of tension, nervousness and ideas of being controlled during a period of 3 weeks before admission. This patient rapidly deteriorated within hours with development of a fulminant psychotic state. We have therefore considered this patient as a case of cycloid psychosis fulfilling the criteria of an acute onset.

The four female cases diagnosed as atypical psychosis (DSM-III-R) had some symptoms characteristic of cycloid psychosis, such as an acute onset, anxiety, motility disturbance and mood swings, but the number of diagnostic criteria according to Perris and Brockington was not fulfilled. Moreover, none of the patiens had delusions, while everyone in the cycloid group showed this

symptom, which seems to be essential in the diagnostic concept of cycloid psychosis.

The scarce epidemiological data that are available taking into account the concept of cycloid psychosis are difficult to compare since the studies have been performed in different ways. We consider that the incidence stated in our study with given diagnostic criteria approaches the real incidence in the catchment area, since one may assume that all patients developing cycloid psychosis for the first time would be hospitalized due to the severity of the condition and were admitted to the two psychiatric hospitals available in this catchment area. The 1-year incidence rate, 0.043‰, of cycloid psychosis was considerable and half of the incidence for schizophrenia. In this age group of hospitalized patients, the cycloids outnumbered those with psychotic mood disorder. The total number of patients with mood disorder was however larger since the onset of mood disorder was in most of these patients after 50 years of age, the defined upper age limit of cycloid psychosis. The incidence rate of cycloid psychosis 0.043‰ in our study was comparable with that found in an epidemiological study, the Lundby population (Lindvall et al. 1986) which was 0.11‰, a nonsignificant difference (the optimal test for comparison between two Poisson distributions). In relation to the incidence rate for all functional psychoses, the figure for cycloid psychosis constituted one fourth for males and almost one fourth for females in our study. This result is practically identical with the figure for females (23%) in the Lundby Study.

Cutting et al. (1978) have reported that cycloid patients represented 3% of all first admissions but since the material of patients was highly selected, they estimated the real figure to be about 8%. Brockington et al. (1982) found that the proportion of admitted patients with cycloid psychosis was about 12%. In a clinical study by Zaudig and Vogl (1983) it was found that 15% of patients with a functional psychosis had a diagnosis of cycloid psychosis. The proportion of cycloid psychosis in functional psychosis was even larger in our study (24%).

In conclusion, this epidemiological study, using the operational diagnostic criteria of Perris and Brockington, showed that the 1-year incidence rate for first-admission patients with cycloid psychosis was considerable, $0.043^0/_{00}$ (half of the figure for schizophrenia) and almost one quarter of all functional psychoses in the age group up to 50 years. Cycloid psychosis thus comprises and appreciable proportion of young and middle-aged patients of both sexes admitted to hospital for an acute functional psychosis.

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