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Aspects of the Course of Bipolar Manic-Depressive, Schizo-Affective, and Paranoid Schizophrenic Psychoses

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Summary. The study deals with the course of three diagnostic groups, namely 50 bipolar manic-depressive, 50 bipolar and manic schizo-affective, and 50 recurrent paranoid psychoses. The patients course was observed over 14–17 years, at least 5 years prospectively. The study concentrates mainly on the prognosis based on the symptomatology observed during the first episode, the stability of the symptoms over several episodes, the residual symptomatology, and the degree of remission during the intervals.

Bipolar and schizo-affective psychoses show a similar periodicity. The study further reveals that the periodicity of schizo-affective disorders is mainly linked with the affective symptoms of this disorder. Qualitatively the residual symptoms of bipolar and schizo-affective psychoses differ.

Bipolar and phasic paranoid psychoses are quite different with regard to their periodicity and their symptomatology during the episodes and during the intervals.

Key words: Bipolar psychoses – Schizo-affective psychoses – Paranoid schizophrenia – Prognosis

Zusammenfassung. Die Untersuchung beschäftigt sich mit dem Krankheitsverlauf von drei diagnostischen Gruppen, 50 bipolar manisch-depressiven Psychosen, 50 bipolar- und manisch-schizo-affektiven Erkrankungen und 50 phasischen paranoiden Psychosen. Der Verlauf wurde über durchschnittlich 14–17 Jahre, davon mindestens 5 Jahre prospektiv studiert. Die Untersuchung gilt besonders der prognostischen Bedeutung der Symptomatologie anläßlich der ersten Phase, der Symptomstabilität über verschiedene Krankheitsphasen, der Residualsymptomatologie und dem Remissionsgrad in den Intervallen.

Es zeigt sich, daß bipolare und schizo-affektive Psychosen ähnlich periodisch verlaufen, und daß die Periodizität der schizo-affektiven Erkrankungen

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stark mit der affektiven Komponente dieser Störung verknüpft ist. Die beiden Psychosen unterscheiden sich qualitativ in ihrer Restsymptomatik.

Bipolare und phasische paranoide Psychosen unterscheiden sich deutlich aufgrund der Periodizität, der Symptomatologie während der Phasen und der Restsymptomatik im Intervall.

Introduction and Questions

Interest in the course of endogenous psychoses is traditional and has created numerous publications. For different reasons further research in this area is still highly desirable. Modern treatment, like lithium prophylaxis or long-term medication with neuroleptic drugs, can change the course of endogenous psychoses profoundly, thus raising the interest in the natural history of these disorders. Therapeutic changes make investigations in this field more and more difficult, with representative samples no longer displaying the unchanged natural history of the disorder. There are also methodological reasons why studies on the course are still required. Most of the earlier studies dealt only with one group of patients, e.g. either schizophrenia or affective psychoses. In this investigation we studied schizophrenia and affective psychoses in an identical way in order to compare their courses. A few similar attempts have been made by Angst et al. (1969), but they were restricted to a few aspects of the illness, e.g. age at onset, and periodicity. The conditions during the interval were not considered. Numerous traditional studies on the course of endogenous psychoses are restricted to a typology of the course and on the final state. Statistical parameters were used to a limited extent only, e.g. median, mean values of the length of episodes, and length of intervals. The development of modern data processing allows the wide use of multivariate procedures for analyzing the influence of intervening variables on the course. But such analyses are very rare, and there is still room for more research.

The purpose of this study is a comparative analysis of the prognosis of paranoid schizophrenia, schizo-affective psychoses and manic depressive psychoses. Furthermore, we investigate the influence of certain variables on the course, such as psychopathology during the episodes or during the intervals.

Material and Methodology

1. Diagnoses. The sample consisted of three groups: bipolar manic-depressive, schizo-affective and paranoid-schizophrenic psychoses. The bipolar affective group belonged to the group of bipolar I (Dunner et al. 1976) which meant that all of them had been hospitalized at least once for mania. The same criterion was applied for the selection of schizo-affective psychoses. This group consisted of patients who either cross-sectionally or longitudinally showed a mixture of paranoid and manic or depressive syndromes. The group of paranoid schizophrenics consisted of psychoses with first-rank symptoms of Schneider (1957) and with prominent delusions.

2. Selection. The manic-depressive and schizo-affective patients were selected from hospital admissions to the Psychiatric Hospital or the Psycho-Neurological Institute, Warsaw, and to

Table 1. Description of the patients

	Bipolar	Schizo-affective	Paranoid-schizophrenic	*P*
Patients	50	50	50	
Sex: Male	25	25	25	N.S.
Female	25	25	25	
Age: $\bar{x}$, s	43.9±10.4	40.5±11.5	43.0±8.4	N.S.
median	43.0	40.5	42.0	
Years of observation, $\bar{x}$, s	16.6± 9.7	15.9± 8.4	17.2±6.8	N.S.
median	14.3	14.3	17.0	
Number of episodes, $\bar{x}$, s	10.1± 4.8	9.2± 3.9	9.3±4.8	N.S.
median	10	9	9	
Age at onset $\bar{x}$, s	27.4± 8.5	24.8± 8.8	26.0±8.3	N.S.
median	27	21	24	

the University Hospital Lubliniec from 1968 to 1977. The schizophrenic group consisted of patients from the city of Minsk Mazowiecki hospitalized and treated as out-patients from 1973 to 1977. Each of the three groups consisted of the first 25 females and 25 males hospitalized during the above mentioned calendar years. The following diagnostic groups were excluded: non-paranoid schizophrenia, schizo-affective psychoses with hypomania not requiring hospitalization, all functional psychoses combined with an organic brain syndrome or a drug dependence. Furthermore, all patients with only one or two episodes of the disorder, and all those who had never been hospitalized were excluded. Therefore, the sample consisted of patients having suffered from at least three episodes and having been hospitalized at least once.

3. Clinical Examination. One of us (Rzewuska 1979) selected the cases based on the diagnoses made in the hospitals and reconfirmed them. All patients were personally examined at least during the last observed episode. Furthermore, all patients were examined when suffering from an episode occurring from 1969 to 1977. Thus all these episodes were studied prospectively, i.e. 553 of a total of 1,455 episodes (38%). In addition M. Rzewuska explored at least one relative in order to collect information concerning the symptomatology and social performance during the intervals. In a retrospective way the earlier courses of illness were studied, based on hospital charts and out-patient services. The public health service in Poland is organized in such a way that a psychotic patient once registered can be studied prospectively without a great loss of information. Patients with a diagnosis of endogenous psychosis are examined monthly and if they do not appear spontaneously they are called.

4. Statistics. The information was collected systematically according to certain criteria. The data were punched in Zürich and computed in the research department of the Psychiatric Hospital linked with the Institute for Information, University of Zürich (IBM 3033). As a statistical package we used SPSS, and as statistical tests mainly χ^2-tests, student's *t*-test, and analysis of variance.

Description of the Patients

Table 1 describes some characteristics of the patients. The three diagnostic groups consist of 25 males and 25 females. The mean age at the last examination

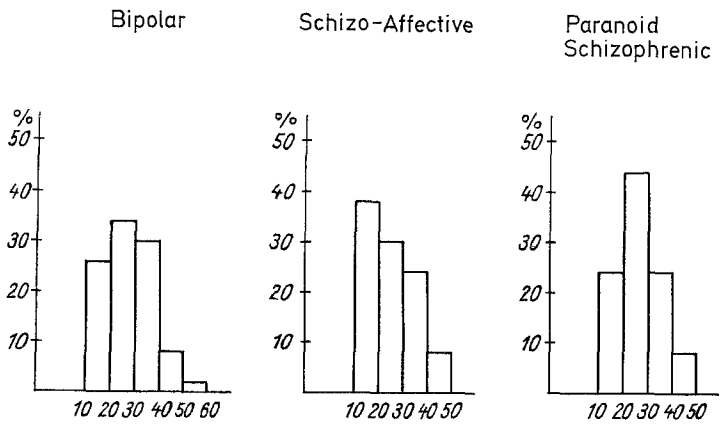


Fig. 1. Age at onset

is quite comparable, with the medians ranging between 40 and 44 years (N.S.). The length of observation is also quite comparable, i.e. the time from the onset of the disorder until the last examination. It varies between 14 and 17 years (N.S.). Furthermore, the total number of episodes observed is equal in all three groups, i.e. they had the same relapse rate over time. All three groups suffered from 9 to 10 episodes on average (N.S.).

The age at onset of the three groups varies between 25 years in the schizo-affective, and 27 years in the bipolar group, the differences are statistically insignificant. The age at onset is independent of sex. If we calculate the mean values and standard deviations (years) we find the following figures:

- Bipolar psychoses, m: 27.7 ± 8.7, f: 27.2 ± 9.5
- Schizo-affective psychoses, m: 24.9 ± 8.5, f: 24.7 ± 9.2
- Paranoid schizophrenia, m: 24.7 ± 7.0, f: 27.4 ± 9.3.

In Fig. 1 a histogram of the age at onset is given for the three diagnostic groups. The schizo-affective group, represented by 38%, shows an especially early onset below 20 years; for the other two groups the onset is between 20 and 29 years. Our material shows a relatively early onset of the disorder, compared to the results of other authors (Angst et al. 1979; Perris 1968). The reason for this may be the selection of our bipolar and schizo-affective patients by the criterion of a mania with hospitalization. An earlier onset of bipolar psychoses characterized by a preponderance of mania has been found by others (Angst 1980; Taylor et al. 1977). The same may be true for schizo-affective psychoses.

Generally our three patient samples (bipolar, schizo-affective and paranoid) are highly comparable. The patients have been observed for a similar length of time. The psychoses show a comparable age at onset and an identical periodicity in terms of observed episodes.

The Prognostic Value of the Symptomatology During the First Episode

In order to analyze the prognostic relevance of the preponderant psychopathological syndrome during the first episode of the illness, the nosological classification is given taking all 150 patients together. The prognosis is measured in two ways. Firstly by the intraindividual mean value of all intervals observed computed by the formula:

$$\bar{B}=\frac{1}{N}\sum_{i=1}^{N}\frac{1}{n_i}\sum_{j=1}^{n_i} bj$$

b=length of interval
n=number of episodes
N=number of individuals

Secondly by the percentage of time spent in illness according to the formula:

$$\bar{D}=\frac{1}{N}\sum_{i=1}^{N}\frac{1}{n_i}\sum_{j=1}^{n_i} dj$$

a=length of episodes
b=length of intervals
n=number of episodes

$$d=\frac{a}{a+b}$$

N=number of individuals

As an independent variable the preponderant syndrome during the first episode of the illness was classified according to the following categories: depressive, manic, paranoid, affective-paranoid (depressive and/or manic), others (catatonic, amentia or oneiroid syndromes). Table 2 shows the mean length of the intervals and the mean length of time spent in illness for each psychopathological category, and the preponderant syndromes during the first episode.

Most of the bipolar psychoses started with depression (68%), a minority with mania (28%). The schizo-affective psychoses began preponderantly with affective-paranoid syndromes (60%), the recurrent paranoid schizophrenia with paranoid syndromes (52%), and affective-paranoid (28%).

Considering the mean length of intervals as a criterion for prognosis it becomes evident that the longest interval after the onset is observed with a paranoid syndrome (15.5 months), all other syndromes (depressive, manic, affective-paranoid, and others) show a similar and shorter mean length of intervals varying between 9.9 and 11.3 months.

Correspondingly the time spent in illness is highest among psychoses starting with depression or mania (41.6% and 38.7%). On the other hand there is no difference in time spent in an illness, whether the psychoses started as a paranoid or an affective-paranoid syndrome (29.1% and 31.8%). Since these two subgroups differ as mentioned above in their mean length of interval, the affective-paranoid

Table 2. Prognostic relevance of the symptomatology during the first episode of bipolar manic depressive (BP), schizo-affective (SA), and paranoid schizophrenic (PAR) psychoses

Preponderant syndrome during the 1st episode	*n*	No. of cycles	Length of intervals in months intra-individual mean value $\bar{x}$, s	Time spent in illness in % $\bar{x}$, s	BP	SA	PAR
Depressive	41	426	9.9±14.4	41.6±11.6	34	7	–
Manic	20	225	11.3±10.9	38.7±11.0	14	4	2
Paranoid	25	223	15.5±21.2	29.1±12.6	–	1	26
Affective-paranoid	44	420	10.4±11.2	31.8±12.3	–	30	14
Others (catatonia, amentia, oneiroid)	20	231	10.0±12.2	29.0± 8.56	2	8	10

Table 3. Occurrence of syndromes of bipolar manic depressive (BP), schizo-affective (SA), and paranoid schizophrenic (PAR) psychoses

	Patients	Number of episode	Number of observed e.	Episodes (syndromes) %					
				Depressive	Manic	Depressive-paranoid	Manic-paranoid	Paranoid	Others
BP	50	1.– 3.	150	52	47	–	–	–	1
	47	4.– 6.	133	55	42				3
	35	7.– 9.	95	58	41	–	–	–	1
	29	≧10	145	53	46	–	–	–	1
			523	54.2	44.3	–	–	–	1.5
SA	50	1.– 3.	150	12	9	31	32	6	9
	47	4.– 6.	140	12	16	21	35	9	10
	34	7.– 9.	97	18	26	25	30	–	1
	22	≧10	74	26	34	7	28	–	5
			461	15.4	18.9	22.8	31.8	4.6	6.5
PAR	50	1.– 3.	150	–	–	9	3	80	8
	44	4.– 6.	131	–	–	15	8	72	5
	30	7.– 9.	86	–	–	27	9	62	2
	23	≧10	99	–	–	30	9	61	–
			466	–	–	18.4	6.8	70.2	4.5

subtype must have a higher periodicity than the subtype starting with a clean paranoid syndrome. From this point of view the former subgroup mostly classified as schizo-affective shows more similarity with bipolar psychoses, beginning either with depression or mania. Comparing psychoses starting with depression or mania we consider the small differences in Table 2 as due to chance and artifacts of methodology. There is always the risk that the length of a manic manifestation is underestimated.

The fifth group of psychoses started with an uncharacteristic acute syndrome like catatonia, amentia, or oneiroid symptomatology. This was mainly diagnosed among schizo-affective psychoses (16%) and recurrent paranoid schizophrenia (20%). Their course is similar to the group starting with an affective-paranoid syndrome and, therefore, showing a higher recurrency than the onset with a clean paranoid syndrome. This result is supported by the literature (Hastings 1958; Huhn et al. 1973; Kinkelin 1954).

The percentage of time spent in illness varying between 29% and 41% is relatively high, but one has to consider that all unfinished cycles were excluded from the computation. This means that the last episode with an unlimited interval was excluded in order to have comparable data with the computation of the length of the interval. (The interval was defined as the time between the end of an episode and the beginning of the subsequent one.) Based on this analysis it is remarkable that the psychotic patients beginning with depression or mania spent considerably more time in episodes (41.6%–38.7%) than those beginning with a paranoid, an affective-paranoid, or another syndrome (29.1%–31.8%). This finding may be surprising, but it neglects the degree of remission during the free interval and the social disability during this period. The difference may be more an expression of the productivity of the psychoses than of outcome itself.

Stability of the Symptomatology Over Several Episodes

For this analysis the episodes were classified into 6 categories: depressive, manic, paranoid, and mixed depressive-paranoid, manic-paranoid, and others. Broken down by the diagnoses and by the number of episodes (1-3, 4-6, 7-9, $\geqq 10$), the percentage of syndromes registered during this period of the psychoses is given in Table 3. Thus we can analyze whether for a total group of patients there is a change in the occurrence of syndromes in the long-term course, e.g. an increase or decrease in depression.

Among bipolar manic-depressive psychoses there is no systematic change of psychopathology with time. The frequency of depressive syndromes during the first three episodes (52%) is equal to that in later episodes (53%). The same is true for the occurrence of manic symptomatology which was observed in 47% in the early, and in 46% in the late stage of the illness. Contrary to expectations from the literature we cannot confirm an increase of depression, as described by Kraepelin (1901), but the present findings agree with those of Angst (1978) which show a high stability of the ratio of depression to mania during the recurrence of the psychoses. This study also confirms the finding of more or less equal presence of depression and mania (50%). The lower representation of manic syndromes may

Table 4. Schizo-affective psychoses. Episodes classified by preponderant syndromes

	Angst et al. (1979)		Present material	
	n	%	*n*	%
Episodes: Affective	520	38.1	158	34.3
Schizophrenic	150	11.0	51	11.1
Schizo-affective	696	50.9	252	54.6

be due to loss of information: hypomanic manifestations are easier and less frequently reported than depressive ones. This hypothesis is supported by the finding that during the first episode the depressive syndromes are much more frequently registered (68%) than mania (28%); this has also been found by other authors (Buerger-Prinz 1961; Perris 1968; Schmitt et al. 1969). This is only true for the first episode, for all subsequent ones there is no difference between the frequency of depressive and manic syndromes. The influence of sex is not analyzed in this context, but Angst (1978) has described a higher proportion of depressive symptomatology among females.

Among schizo-affective psychoses there is a considerable longitudinal change of the symptomatology. The depressive-paranoid syndromes decrease from 31% in the earlier phases to 7% in the late episodes observed, but the proportion of manic-paranoid episodes remains more or less constant (32% and 28%). If we add depressive and depressive-paranoid episodes and manic and manic-paranoid episodes we do not find much variation over time. In a longitudinal perspective depressive and depressive-paranoid manifestations were found in the following frequencies: 43%, 33%, 43%, and 33%, and manic and manic-paranoid manifestations in: 41%, 51%, 56%, and 62%. In comparison to the bipolar group analyzed previously there is a similar trend in the direction that both affective syndromes, depression and mania, are equally represented in approximately 40% to 50% of the episodes. In this sample again there is no trend to an increase in depression with increasing number of episodes. The variation given by these figures may be mainly due to the small number of patients. The results of a more or less equal representation of depression and mania among schizo-affective psychoses are again in agreement with the findings of Angst et al. (1980). The two investigations also show an equal proportion of paranoid syndromes, only the catatonic syndrome is less frequently seen in the present material.

The following figures neglect the single patients and are based on 461 observed episodes of schizo-affective patients. Among those 4.6% were paranoid, 31.8% manic-paranoid, 22.8% depressive-paranoid, 18.9% manic, and 15.4% depressive. Mixed affective-paranoid episodes are, therefore, a little more frequent than pure affective ones, but in comparison with the earlier work of Angst et al. (1979), (see Table 4) practically it shows an identical frequency.

Residual Symptomatology During the Intervals

For this analysis the residual symptomatology during the intervals was classified into 5 groups: paranoid symptomatology, "disturbed contact to others", hypo-

Table 5. Occurrence of residual symptomatology during the intervals

	Patients	Number of intervals	Number of observed intervals	Intervals in %						No. residual sympto-matology
				Residual symptomatology in %						
				Paranoid	Disturbed contact	Hypo-chondrial	Affective	Dysphoric	Total	
BP	50	1.– 3.	150	–	–	2	4	3	9	91
	47	4.– 6.	133	–	–	2	18	17	37	63
	35	7.– 9.	95	–	–	3	18	28	51	49
	29	≧10	145	–	–	9	7	61	77	23
			523	–	–	10	26	64	42.5	57.5
SA	50	1.– 3.	150	1.5	12	1.5	3	3	21	79
	47	4.– 6.	140	0.5	30.5	3	4	8	46	54
	34	7.– 9.	97	–	16	3	11	22	52	48
	22	≧10	74	–	28	1	7	37	73	27
			461	1.5	48.3	5.0	13.4	31.8	43.6	56.4
PAR	50	1.– 3.	150	21	25	1	–	–	47	53
	44	4.– 6.	131	28	44	5	1	–	78	22
	30	7.– 9.	86	13	64	4	9	–	90	10
	29	≧10	99	12	64	2	–	–	78	22
			466	28.1	65.1	4.0	2.8	–	70	30

Table 6. Residual symptomatology. Empirical versus expected values (in brackets), and length of illness in years

Psychoses	Patients *n*	Residual symptoms length of illness (years)			No residual symptoms length of illness (years)		
		1–2	3–4	≧5	1–2	3–4	≧5
Bipolar affective	50	6	7	23	44	37	12
		(13)	(7)	(17)	(45)	(37)	(11)
Schizo-affective	50	11	8	14	39	31	8
		(12)	(6)	(15)	(38)	(31)	(9)
Paranoid schizophrenic	50	23	6	16	27	22	6
		(16)	(8)	(21)	(27)	(22)	(6)

chondriasis, affective (depressive or manic) symptoms, and dysphoria defined by Scharfetter (1976 and 1980). As in Table 5 the presence of these residual syndromes is given in percentages for all intervals observed breaking down the patients by diagnoses and number of intervals. Thus the frequency of residual symptomatology can be analyzed over time. The time is first analyzed indirectly by the number of episodes, (Table 5) and that by years of illness (Table 6).

If we compare the three diagnostic groups the presence of a residual symptomatology was equally frequent among bipolar patients (42.5%) and among schizo-affective patients (43.6%), whereas 70% of the intervals of paranoid-schizophrenics were characterized by residual symptoms.

The quality of the residual symptoms varies of course depending on the diagnoses, but some trends cross diagnostic groups. The residual symptomatology of bipolar psychoses is characterized by dysphoria (64%), followed by affective symptoms (manic or depressive) in 26%, and hypochondriasis in 10% of the intervals. Surprisingly there is a preponderance of dysphoria. A similar trend is present in schizo-affective psychoses, but here the most frequent residual symptom consists of "disturbed contact" (48%), followed by dysphoria (32%), affective syndromes (13%), and hypochondriasis (5%). The rank order of the three latter syndromes is, therefore, the same as among bipolar psychoses. On the other hand schizo-affective psychoses frequently develop a disability in contact. It is remarkable that paranoid residual symptoms do not generally occur in the recurrent subtypes with more than 6 episodes.

The residual symptomatology of paranoid schizophrenics differs considerably. "Disturbed contact" is the most prominent symptom (65%), followed by a considerable frequency of paranoid residual symptoms (28%). Affective and hypochondrial syndromes together only amount to 6.8% of the intervals.

In a longitudinal perspective the residual symptomatology changes in all three diagnostic groups. During the first three episodes only 9% of the intervals among bipolar psychoses showed any residual symptomatology increasing to 37% (intervals 4–6), to 51% (intervals 7–9) and finally to 77% (intervals ≧10. This finding is not new for schizophrenia, but it is for affective disorders. It shows a

Table 7. Prognostic groups of cycles of bipolar manic-depressive (BP), schizo-affective (SA), and paranoid schizophrenic (PAR) psychoses

Degree of remission	*n*	Group	Long intervals			Group	Short intervals		
			BP $n=523$	SA $n=461$	PAR $n=466$		BP $n=523$	SA $n=461$	PAR $n=466$
Full remission	*n*	A	158	167	77	B	140	93	58
Mild residual symptoms	*n*	C	89	104	116	D	124	82	75
Severe residual symptoms	*n*	E	4	6	76	F	8	9	63

similar increase of residual symptomatology with increasing number of episodes. The increase is due to dysphoria and hypochondriasis.

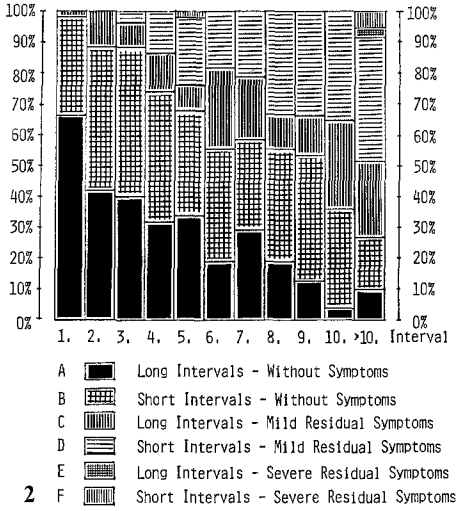
Similar trends are present among schizo-affective psychoses. During the first three episodes there is a higher occurrence of residual symptoms (21%) than among bipolar psychoses (9%). The later increase to 73% is similar to that observed among bipolar psychoses (77%). The increase of residual symptomatology among schizo-affective psychoses is also due mainly to dysphoria, but also to "disturbed contact". In contrast to the bipolar group we do not find an increase of hypochondriasis. This finding is not compatible with an unspecific hypothesis, e.g. explaining the increase of hypochondriasis by a psychological reaction to many episodes. If this were true it should be valid for both diagnoses, bipolar and schizo-affective psychoses. The increase of hypochondriasis among bipolar psychoses alone lets us assume that this symptom is an expression of the endogenous depressive illness itself.

Among paranoid schizophrenic psychoses there is also a longitudinal increase of residual symptomatology present. In a later stage of the illness (after 4 episodes) 78%–90% of the intervals show residual symptoms. The increase of the residual symptomatology is mainly due to the "disturbed contact", whereas paranoid symptoms and hypochondriasis are not increased.

In Table 6 the occurrence of a residual symptomatology is illustrated as a function of the length of the illness since onset in years. Bipolar patients develop a residual symptomatology mainly in a later stage of the illness (after 5 years), paranoid schizophrenics and schizo-affective psychoses in the early and in the late stage. From the point of residual symptomatology, schizo-affective psychoses resemble paranoid schizophrenia.

Longitudinal Prognosis

For this analysis the prognosis was classified in a new way taking into account the degree of remission and the length of the interval. The analysis is not based on patients, but on intervals. We distinguish between long and short intervals, defined by the median. The degree of remission is assessed as "full remission",



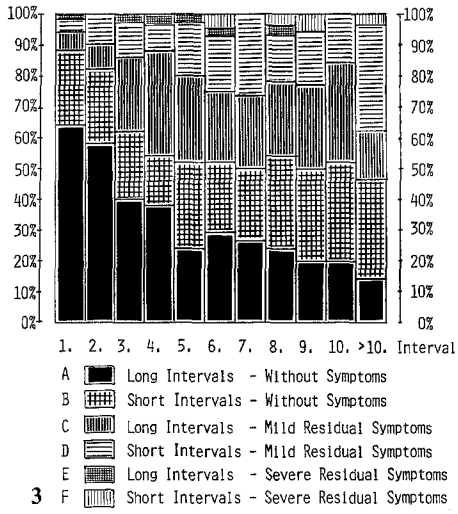


Fig. 2. Longitudinal development of prognosis. Bipolar psychoses

Fig. 3. Longitudinal development of prognosis. Schizo-affective psychoses

"mild residual symptomatology" (symptoms registered only by the interviewed relative), and "severe residual symptomatology" (this was registered independently by everybody). Thus we find six prognostic groups of cycles which are shown in Table 7. Among the diagnostic groups A–F the best outcome is shown by group A with long intervals and full remission, and the worst in group F with short intervals and severe residual symptomatology. The table shows remarkable differences between bipolar and schizo-affective psychoses on the one hand, and paranoid psychoses on the other hand. Group F (short intervals, severe residual symptomatology) is mainly represented by paranoid schizophrenia. Correspondingly this psychosis is underrepresented among intervals with a good remission, especially combined with a long interval.

There are also differences among bipolar psychoses and schizo-affective psychoses. Surprisingly we find more intervals with full remission among schizo-affective psychoses, especially combined with a long interval (group A), but on the whole the differences between schizo-affective and bipolar psychoses are relatively small. The prognosis of paranoid schizophrenia is considerably worse. The differences are most prominent in the extreme groups with full remission (A + B), and those with severe residual symptomatology (E + F).

In Table 7 we neglected the longitudinal development. This is now illustrated in Figs. 2, 3, and 4 for each diagnostic class. The three illustrations show the same trend again. Intervals with a full recovery (A + B) decrease longitudinally more and more. This trend is most remarkable among paranoid schizophrenia, followed by bipolar affective illness, whereas after the third episode of schizo-affective psychoses no further considerable change can be observed. Intervals with a pure outcome (E + F) with severe residual symptoms do not occur among bipolar and schizo-affective psychoses, but are present in approximately 30% to 40% of intervals during the course of paranoid illness. In this group after the fourth

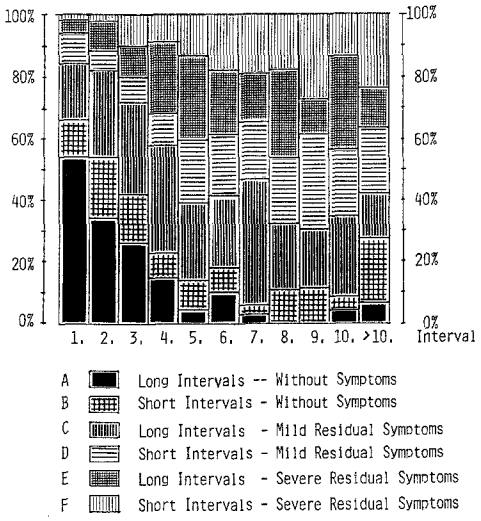


Fig. 4. Longitudinal development of prognosis. Paranoid schizophrenia

episode there is a stability, the frequency of severe residual symptomatology does not increase anymore. This finding is compatible with the analysis of Angst et al. (1980).

Discussion

The present investigation deals only with recurrent psychoses which have occurred at least three times and were classified, based on the syndromes, as bipolar manic depressive, manic schizo-affective, or paranoid. All three psychoses show an early onset with a median between 21 and 27 years. During the observed time (14–17 years) all three groups show a similar relapse frequency (9–10 episodes), the latter showing no sex difference. Surprisingly we found a higher activity of bipolar affective psychoses, reflected as time spent in illness which was 40% since onset for bipolar patients, and 30% for schizo-affective and paranoid patients.

In other aspects of the course there are great similarities between bipolar and schizo-affective psychoses, and it is unimportant whether the illness starts with depression or mania. Both psychoses show longitudinally approximately 50% manic and 50% depressive episodes, and this ratio probably remains stable over the time. On the other hand amongst schizo-affective psychoses the proportion of paranoid syndromes increases and, therefore, these psychoses become more and more affective. If paranoid syndromes occur in a later stage of the illness they are as a rule mixed with affective symptomatology (mania or depression).

The frequency of a residual symptomatology in the intervals is 43% for both bipolar and schizo-affective psychoses, and clearly elevated among paranoid schizophrenia (70%). Considering the quality of the residual symptomatology there are marked differences between bipolar and schizo-affective psychoses. Among bipolar illness and schizo-affective psychoses there is a preponderance of

dysphoria, among schizo-affective psychoses and paranoid schizophrenia a preponderance of disturbed contact. Schizo-affective patients rarely develop paranoid residual syndromes during the intervals as is frequently observed among paranoid schizophrenia.

The longitudinal analysis shows that the risk of developing residual symptoms increases with the number of episodes and the length of the illness. For paranoid schizophrenia there is no considerable increase after the fourth episode, but for bipolar psychoses there is a steady risk over time to develop a residual state, reappearing with each new episode. In this respect schizo-affective psychoses resemble recurrent paranoid schizophrenia.

On the whole the investigation shows the important distinction between schizo-affective psychoses and recurrent paranoid schizophrenia. In many respects schizo-affective psychoses show a similar course to bipolar psychoses. The prognosis takes an intermediate position between bipolar illness and recurrent paranoid schizophrenia. Therefore, investigations on the course of schizophrenia which include schizo-affective psychoses may introduce a major source of error and improve the prognosis of so-called schizophrenia considerably.

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