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Long-term Course of Schizoaffective Disorders*

Part III: Onset, Type of Episodes and Syndrome Shift, Precipitating Factors, Suicidality, Seasonality, Inactivity of Illness, and Outcome

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Summary. In addition to the findings presented previously, one-half of the 72 investigated schizoaffective patients had an acute onset. Onset of manic symptomatology was found to be usually acute. Although precipitating factors were found in 76% of the patients, this was found for only one-third of the 397 episodes. In spite of the fact that the majority of patients (61%) had a polymorphous course (with more than one type of episode), the pure schizophrenic or pure affective syndromes only seldomly dominated the course, as schizoaffectivity score and syndrome-presence index showed. Some 81% of the patients had delusions or hallucinations but only 37% of the individual episodes; 65% of the patients had suicidal symptomatology (24% of the episodes, mainly the schizodepressive ones). No seasonality was found, and 50% of the patients had a favorable outcome, only 6% ended in severe residuum. In old age the illness usually became inactive.

Key words: Schizoaffective disorders – Onset – Outcome – Suicidality – Syndrome shift

1. Introduction

In Part I and II of the present study (Marneros et al. 1988a, b) the onset and outcome, episodes, intervals, and cycles as elements of the course of schizoaffective disorders have been investigated. In addition some other parameters as important criterial elements in the course of schizoaffective disorders were considered: type of episodes and syndrome shift, suicidality, seasonality, precipitating factors, and inactivity of the illness. The clinical and scientific importance of all mentioned elements is evident.

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2. Materials and Methods

The features of the investigated population, methods, instruments, and definitions were described in Parts I and II of this study (Marneros et al. 1988a, b). The present work focuses on additional data on methods, instruments and definitions regarding precipitating factors, seasonality, suicidality, and activity of the disorder.

Aiming to estimate the degree of dominance of the three groups of episodes (schizophrenic, affective, schizoaffective) over the whole course of every individual patient, two new variables the syndrome-presence index (SPI) and the schizo-affectivity score (SAS) were introduced.

2.1 The Syndrome-Presence-Index (SPI)

The SPI shows how frequently a specific group of episodes (schizophrenic, affective, schizoaffective) is present in relation to the total number of episodes of a patient. Melancholic, manic, and manic-depressive episodes are counted as affective episodes; schizodepressive, schizomanic, and schizomanic-depressive episodes as schizoaffective episodes. The SPI is calculated for any individual patient by dividing the number of episodes referred to (schizophrenic, affective, schizoaffective) by the total number of episodes:

$$\text{SPI (s)} = \frac{\text{E (s)}}{\text{E}_{\text{tot}}}$$

where (s) is syndrome, E the number of episodes, and tot total.

For any individual patient three different SPIs are available: a schizophrenic, an affective, and a schizoaffective SPI.

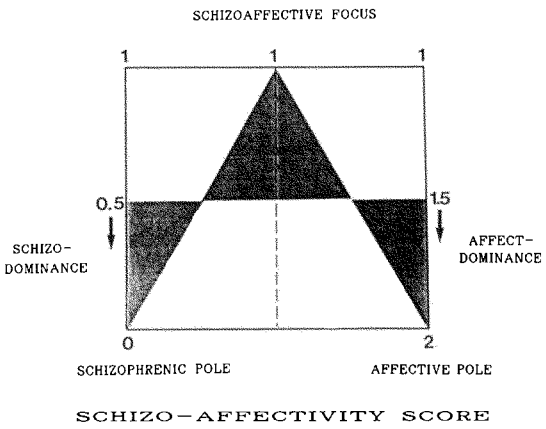


Fig. 1

The highest possible value for and SPI is 1, the lowest possible value 0. For example: a patient has seven episodes, comprising one melancholic, two schizodepressive, two schizomanic, one schizophrenic, and one indefinable. The schizophrenic SPI will thus be 0.14 (1/7), the affective SPI also 0.14 (1/7), and the schizoaffective SPI 0.57 (4/7). A kind of episode is considered as dominating the course if its SPI is greater than 0.50.

Using the SPI the relation of the frequency of a group of episodes (schizophrenic, affective, schizoaffective) to the total number of episodes is known but nothing about its relation to the other two groups of episodes. This additional information can be gained by estimating the SAS.

2.2 *The Schizo-Affectivity-Score (SAS)*

The SAS shows the bias of the course of schizoaffective disorders between the schizophrenic and the affective pole. It can achieve a value between 0 (the schizophrenic pole) and 2 (the affective pole). Patients having an SAS of 0 (representing pure schizophrenic disorders) or 2 (pure affective disorders) are by definition not included in the study.

For estimation of the SAS each episode of the course takes a value: 0 for a schizophrenic episode, 1 for a schizoaffective episode (schizodepressive, schizomanic, schizomanic-depressive) and 2 for an affective episode (melancholic, manic, manic-depressive). The sum is then divided by the number of episodes. For example: a patient with one melancholic, one schizodepressive, one schizomanic, and one schizomanic-depressive episode has an SAS of 1.25.

$$\text{SAS} = \frac{\underset{=2}{\text{melancholic}} \quad \underset{=1}{\text{schizomanic-depressive}} \quad \underset{=1}{\text{schizomanic}} \quad \underset{=1}{\text{schizomanic-depressive}}}{4\ \text{(episodes)}}$$

$$= \frac{5}{4} = 1.25$$

The nearer to 1 the SAS the more schizoaffective the course, the nearer to 0, the more schizophrenic; and the nearer to 2, the more affective (Fig. 1). The ideal schizoaffective course has an SAS = 1 with boundaries 0.5 to 1.5. SAS lower than 0.50 shows a schizophrenic bias, and SAS higher than 1.50 an affective bias of the course.

Both variables, SPI and SAS are evaluated intraindividually.

3. Results

3.1 *Onset*

3.1.1 Type of Episode at Onset. Exactly one-half of the episodes at onset were schizodepressive (Fig. 2). Two-thirds of the initial episodes were schizoaffective ones (schizodepressive, schizomanic, schizomanic-depressive), while 13% showed pure schizophrenic and 14% pure affective (melancholic, manic, manic-depressive) symptomatology. In 7% of cases the initial episode did not fulfil the criteria of any of the types of episode (noncharacteristic episodes).

3.1.2 Acuteness of Onset. The acuteness of onset was defined in terms of the time between the beginning of the first registrable changes in the patient's behavior or feelings and the manifestation or intensification of symptoms leading to first admission. As Fig. 3 shows, 49% of the patients had an acute onset, i.e., the first changes began less than 4 weeks before manifestation or intensification of symptoms leading to admission, 30% had a subacute onset, i.e., 1 to 6 months before, and 21% had an insidious onset, i.e., more than 6 months before. Of the 15 patients with an insidious onset, 12 had a schizodepressive initial episode. All patients with a schizomanic-depressive initial episode

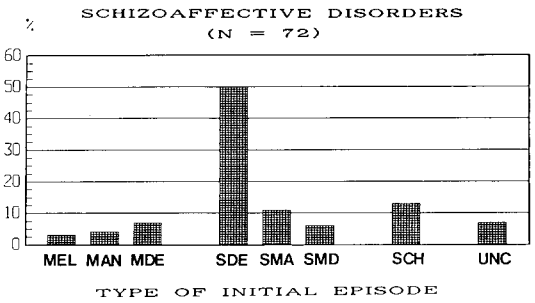


Fig. 2

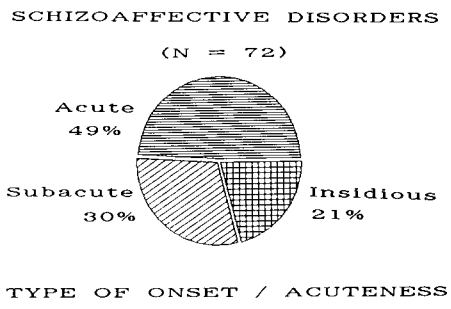


Fig. 3

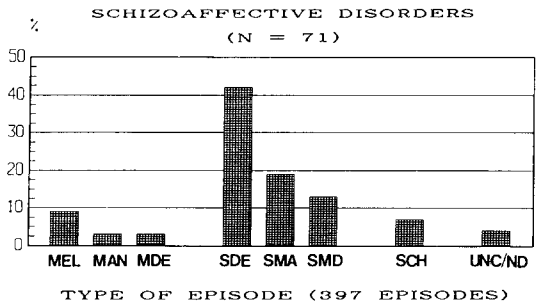


Fig. 4

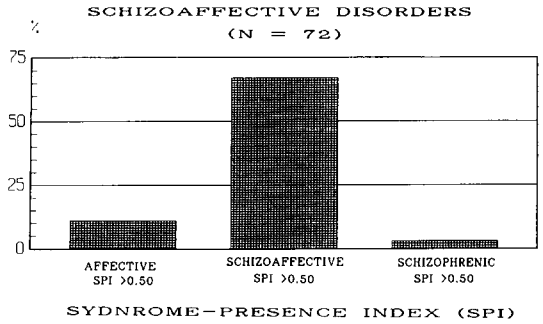


Fig. 5

had an acute onset; this was also true, with one exception in each case, for those with a manic, schizomanic, or manic-depressive initial episode.

3.2 Type of Episodes

The 72 patients investigated had a total of 400 episodes causing admission to or treatment by a psychiatric hospital or similar institution. Excluding the 1 patient who became permanently hospitalised after the 3rd episode, the remaining 71 patients had 397 episodes.

The most frequent type among these 397 episodes, as Fig. 4 demonstrates, was the schizodepressive type (42%). Dividing the episodes into schizoaffective (schizodepressive + schizomanic + schizomanic-depressive), affective (melancholic + manic + manic-depressive), schizophrenic, noncharacteristic, and not identificable types, 74% of them were schizoaffective, while pure affective and pure schizophrenic episodes were not very frequent (15% and 7% respectively). Of the total episodes, 2% were noncharacteristic and 2% not identificable because of lack of information.

3.2.1 Syndrome Shift. In 61% of cases the course was polymorphous, i.e., more than one type of episodes occurred (more detail about polymorphous and monomorphous schizoaffective disorders can be found in Marneros et al. 1988, in preparation).

Only three patients had a purely sequential course, i.e., one with only affective and schizophrenic episodes and no schizoaffective ones. Almost equal numbers of patients had unipolar (51%) and bipolar (49%) courses (Marneros et al. 1988, in preparation), but schizodepressive episodes were more frequent (42%, Fig. 4) than schizomanic episodes (19%).

However, looking at the SPI and the SAS, the course was only exceptionally not dominated by schizoaffective episodes. The intraindividual SPI, which shows the frequency of a group of episodes (schizophrenic, affective, schizoaffective) in relation to the total numbers of episodes, demonstrated that only two patients had a course dominated by the presence of pure schizophrenic episodes, i.e., whith a schizophrenic SPI higher than 0.50, (Fig. 5). In 11% of cases the course was dominated by pure affective epi-

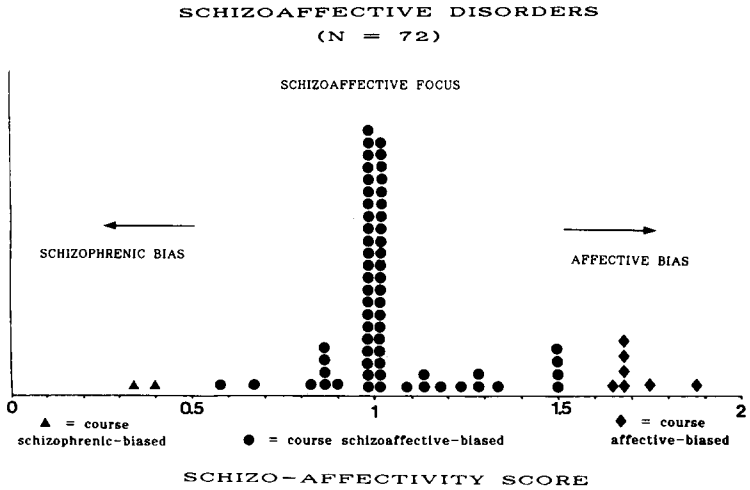
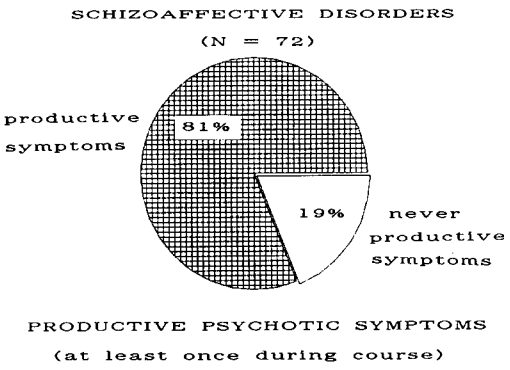


Fig. 6



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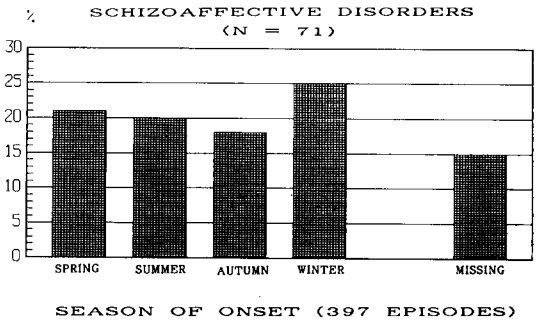

Fig. 8

sodes, but in 66% schizoaffective episodes were dominant (schizoaffective SPI higher than 0.50). In 20% of cases the SPI was found to be 0.50, i.e., none of the three groups of episodes dominated the course. In addition to the information gained by the estimation of SPI, the bias of each individual course to the affective or schizophrenic pole was evaluated by the SAS (Fig. 1). As the histogram in Fig. 6 shows, the great majority of the cases investigated (87%) displayed a very strong focus on intermediate schizoaffective values (mean SAS = 1.08, ideal SAS for pure schizoaffective course = 1, boundaries 0.50 to 1.50). Only 3% of the patients showed a bias toward a mainly schizophrenic course (SAS lower than 0.50), and only 10% of them exhibited a bias toward a mainly affective course (SAS 1.50). But even excluding the monophasic cases which by definition have an SAS of 1.00, the findings were very similar ($N = 63$, 86% focusing on intermediate schizoaffective values, mean SAS = 1.09, min. 0.33, max. 1.88).

3.2.2 Productive Psychotic Symptoms. In total 81% of the patients (Fig. 7) had productive psychotic symptoms, i.e., delusions or hallucinations, at least once during the course, distributed over 148 of 397 episodes (37%). In 94% of these (139 episodes) the psychotic symptoms were found to be mood-incongruent.

3.3 Suicidality

A total of 65% of the patients had suicidal intentions at least once, and 36% attempted suicide. Of the total number of episodes 24% (that is 97 episodes) displayed a suicidal symptomatology, and in 41% of these ($n = 40$) the patients actually attempted suicide. Schizodepressive episodes showed suicidal symptomatology most frequently (70 of 165 episodes, 42%), even more often than melancholic episodes (9 of 36 episodes, 25%).

Considering the whole course, a significant difference with regard to suicidality was found between unipolar and bipolar schizoaffectives (78% of the unipolars, 51% of the bipolars), and between females (80%) and males (39%). For more detail see Rohde and Marneros (1988).

3.4 Seasonality

No significant differences were found in the seasonal distribution of the onset of episodes (Fig. 8). To analyze the correlation between type of episode and season at onset, avoiding repeated measurement, one episode, the last one if a patient had several episodes of the same type, was selected. Again no significant deviations from an expected uniform distribution were found.

3.5 Precipitating Factors

A total of 21 different kinds of either negative (stressful) or positive (pleasant) life events which can be considered as precipitating factors were registered. All of them concerned the patient himself or persons in his relevant environment (loss of relatives or friends, separation, childbirth, somatic illnesses, changes in occupational life, financial difficulties etc.).

Although 76% of the patients had at least one life event which could be considered as a possible precipitating factor for an episode, only 33% of the 397 episodes were involved (Fig. 9). In 54% of the patients a life event before onset of the first episode was experienced. It was found that first episodes were more frequently precipitated by life events than later ones. No significant differences with regard to distribution of life events were found among the various types of episodes. In 36% of the episodes connected with life events the event occurred less than 2 weeks before onset, and in 49% of them within 4 weeks be-

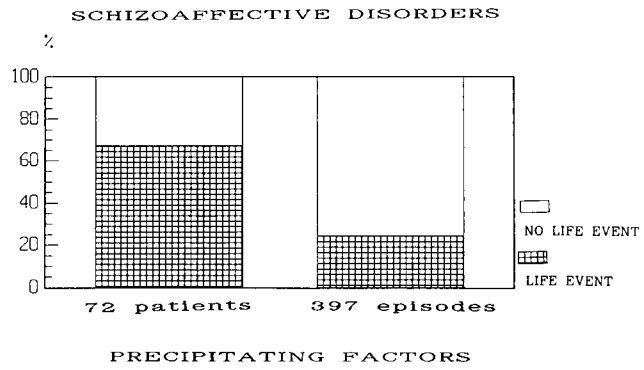

Fig. 9

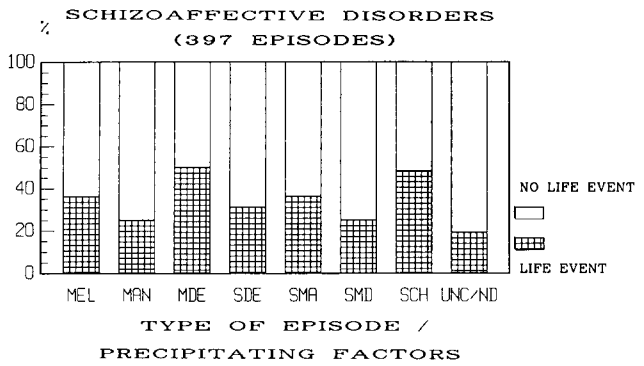

Fig. 10

fore onset. Only in 8% of the episodes had the life event occurred between 6 and 12 months before admission.

No individual kind of registered event was associated with more than 4% of the total episodes (or 13% of the episodes connected with life events). The frequency of life events was the same in females and males. Also no differences were found between females and males with regard to the kind of life event, with two exceptions: in more males than females an episode was preceded by an occupational change (males 39%, females 4%; $P = 0.001$) or by an examination (males 27%, females 4%; $P = 0.01$). No correlations were found between presence of life events and age at onset.

3.6 Inactivity of the Illness

Inactivity of the illness was defined as a period of at least 3 years since the end of the last episode, independently of the presence or absence of residual symptoms. The 3-year period was arbitrary and a compromise, but was nevertheless based on empirical data. As we have already shown (Marneros et al. 1988b) the average length of cycle in a representative group of schizoaffective patients (all of them having four cycles; see Part II) was 32.37 months (median) for the first cycle, 14 months for the last (fourth) cycle. We assumed that the probability of relapse after a period longer than the longest average cycle cannot be high. Therefore we defined inactivity of the illness as the last relapse-free period if longer than the longest cycle of a representative group. This finding was compatible with the observations of similar studies, e.g., that of Angst (1980). We could of course have chosen 14 months, i.e., the average length of the last of four cycles in our representative group of schizoaffective patients, but for greater security we preferred to choose a period exceeding the longest average cycle in this group.

Some 52 patients (73%) exhibited a last relapse-free period of more than 3 years, i.e., had an inactive illness according to the definitions of the present study. The average inactive period (median) was 11 years ($\bar{x}$ 14.03, SD 8.76, min. 4, max. 34 years).

Univariate statistical analysis (Table 1) of the values, using nonparametric tests (Mann-Whitney U-test, Kruskal-Wallis analysis of variance) showed that bipolars had a shorter inactive period than unipolars. Spearman correlation analysis (Table 2) showed that (a) the longer the duration of follow-up, and (b) the older the patient at the end of observation, the longer the inactive period.

The impact of treatment and prophylaxis on the duration of inactivity – and in general on the relapse-free period – was left out of statistical considerations because of marked intraindividual and interindividual differences in methods, dosages, duration, and consistency of therapy. However, analysis of individual cases showed consistent prophylaxis with lithium to correlate with a long relapse-free period, especially in bipolars: this was not the case with neuroleptics or antidepressants.

3.7 Residuum

Residuum was defined as persistence of psychopathological symptoms and disturbed global function for at least 3 years. The presence of a residuum was evaluated using the Disability Assessment Schedule, the Global Assessment Scale, and the Bonn Residuum Criteria (Marneros et al. 1988, Part I). The results are presented in Table 3. Exactly one-half of the patients had a full remission, and only 6%–8% displayed a very severe residual state. Only one patient needed permanent treatment in a psychiatric institution (the outcome of the schizoaffective disorders in comparison to schizophrenia is presented in Marneros et al. 1988, in preparation).

Table 1. Inactivity. Schizoaffective disorders ($N = 52$)

Variables	Total	*N*	Median	*P*-values
Sex	52			0.475 (1)
Female		30	12.50	
Male		22	10.50	
Personality	50			0.620 (2)
Obsessoid		11	16.00	
Sthenic/high-self-confident		18	10.00	
Asthenic/low-self-confident		21	10.00	
Premorbid social interactions	52			0.716 (1)
Tendency to social isolation		9	11.00	
No tendency to social isolation		43	11.00	
Broken home situation	52			0.777 (1)
Broken home		17	15.00	
No broken home		35	10.00	
Stable heterosexual relationship before onset	52			0.131 (1)
Stable relationship (> 6 months)		36	14.00	
No stable relationship		16	9.00	
Life event (LE) before onset	52			0.239 (1)
LE before first episode		32	10.00	
No LE before first episode		20	14.50	
LE during course	52			0.529 (1)
LE during course		41	10.00	
No LE during whole course		11	15.00	
Initial episode	52			0.777 (2)
Melancholic		1	23.00	
Manic-depressive		4	7.50	
Schizophrenic		6	18.50	
Schizodepressive		27	10.00	
Schizomanic		7	11.00	
Schizomanic-depressive		4	10.50	
Non characteristic		3	15.00	
Schizophrenic episode during course	52			0.192 (1)
Schizophrenic episode during course		12	6.50	
No schizophrenic episode during course		40	14.00	
Polarity	52			0.018 * (1)
Unipolar		27	19.00	
Bipolar		25	9.00	
Polymorphism	52			0.218 (1)
Monomorphous		24	17.00	
Polymorphous		28	10.00	
Productive psychotic symptoms	52			0.153 (2)
Paranoid		14	11.00	
Hallucinosis		2	19.50	
Paranoid-hallucinatory		26	9.00	
Non productive		10	19.50	

(1) = Mann-Whitney U-test; (2) = Kruskal-Wallis test; * = $P < 0.05$

Table 2. Inactivity of the illness – correlation analysis. Schizoaffective disorders ($N = 52$)

Variable	Spearman r	Significance P
Age at onset	0.1744	0.216
Age at follow-up	0.3981	0.003**
Duration of follow-up	0.3367	0.015*

* = $P < 0.05$; ** = $P < 0.01$

Table 3. Outcome according to Huber's criteria, Global Assessment Scale (GAS), and Disability Assessment Schedule (DAS). Schizoaffective disorders ($N = 72$)

Criteria	Outcome	N	%
Huber's	Full remission	36	50
	Non characteristic residua	32	44
	Characteristic schizophrenic residua	4	6
GAS	91–100	37	51
	51–90	18	25
	0–50	17	24
DAS	Good	37	51
	Sufficient	29	40
	Poor	6	8

4. Discussion and Conclusions

In the present study only one-fifth of the schizoaffective patients had an insidious onset, usually with a schizodepressive episode, while almost half of them had an acute beginning. Onset with manic symptoms is usually acute.

The great majority of patients (76%) had before at least one episode – usually less than 4 weeks before – experienced a relevant life event which can be considered as a precipitating factor. Research into life events is plagued by methodological problems and other shortcomings, so that comparisons among the various studies are not always possible, and the differences in results are remarkable. The findings of the present study are very similar to those of Tsuang et al. (1977) who found precipitating factors in 78% of cases, but differ from those of Rzewuska and Angst (1982) (Warsaw material 22/55, Zürich material 16/54). Other authors have also found relatively high proportions of schizoaffective patients with precipitating factors. For instance van Praag and Nijo (1984) found psychogenic provocations in 62% of cases and Berg et al. (1983) in 50%. Brockington et al. (1980a, b) found a much lower rate, but took only index admissions into account. Although precipitating factors were found in a high percentage of schizoaffective patients, two-thirds of the individual episodes were found to be nonprecipitated.

The precipitating factors were found to be nonspecific, covering many kinds of negative and positive psychological and social life events and also diseases and childbirth. Correlations between life events and type of episode were not found. The present study confirms the finding of a previous investigation that first episodes are more frequently precipitated than later ones (Angst 1986). According to the findings of the present investigation, frequency and kind of precipitating factors are independent of age at onset or gender, with the exceptions that occupational changes and examinations were found more frequently in males.

The majority of the schizoaffective patients had a polymorphous course, i.e., experienced more than one type of episode. Nevertheless, as the SPI showed, concurrent schizoaffective episodes dominated most courses while a predominance of schizophrenic or affective episodes was rare. The SAS, which showed the bias of the course to the schizophrenic or affective pole, focused very strongly on the schizoaffective point. These findings are in agreement with those of Angst and coworkers (1979) and Maj (1985), who found a similar tendency.

Although bipolars and unipolars were almost equally represented, schizodepressive episodes were the most frequent. Although the great majority of patients displayed productive psychotic symptoms (mainly mood-incongruent delusions or hallucinations) at least once, only a little over one-third of the total episodes were involved. This is in agreement with the findings of Winokur et al. (1985), who found that only 33% of 389 episodes in schizoaffective patients exhibited mood-incongruent productive psychotic symptoms.

Suicidal symptomatology was frequent among the patients investigated, in agreement with previous investigations (Achté 1986; Angst 1986; Dingman and McGlashan 1986), especially among females (80%) and unipolars (78%). Schizodepressive episodes correlated with suicidal symptomatology significantly more frequently than other types of episode, even pure melancholic episodes.

No seasonal peaks of manifestation or remanifestation of episodes were found. These results support the findings of other authors, who also found no seasonality in schizoaffective disorders (Angst 1986).

One interesting finding of the present study concerns inactivity of the illness, i.e., a last relapse-free period of over 3 years. The length of the inactive period correlated positively with unipolar course, with greater age of the patient, and with greater duration of follow-up. In other words, in older patients

the propability of a remanifestation of an episode is much lower, even without prophylaxis, than in younger patients. This finding seems to contradict that of Angst (1980), who found no such inactivity. This discrepancy between the Cologne study and the Zürich study can be explained by the difference in patients age at the end of the observation period; the Cologne study had a much higher proportion of older schizoaffective patients than the Zürich study.

It has to be stressed, however, that such findings, not only regarding inactivity but also other parameters like length and frequency of cycles and episodes, are of value only if interpreted collectively as there is extraordinary variation among individual cases. Especially with regard to inactivity of the illness, individual analysis of the cases showed that some patients of advanced age – over 70 or even over 80 years old – still had an active psychosis, while on the other hand some patients under 50 years of age had had no relapses for 18 or even 20 years.

The impact of prophylaxis on the inactive period or relapse-free period could only be individually estimated in the present study because of the heterogeneity of treatment methods. Individual case analysis suggested that lithium prophylaxis is effective, especially in bipolars, but that prophylaxis with neuroleptics and antidepressants is ineffective.

In agreement with the most important previously published studies, the schizoaffective disorders studied here had a relatively favorable outcome, especially in comparison to schizophrenia (Marneros and Tsuang 1986).

In conclusion, the findings of the present study show that schizoaffective disorders are equally divided between acute and nonacute onset. They are usually polymorphous, i.e., with more than one type of episode, but nevertheless concurrent schizoaffective episodes, especially schizodepressive episodes, usually dominate the course. No seasonal peaks of manifestation or remanifestation of episodes exist. Suicidal symptomatology is extremely frequent, especially in schizodepressive episodes. Although precipitating factors are documented at least once in the great majority of patients, they occur relatively rarely in relation to the total number of episodes. They are nonspecific, and they usually precipitate the first episodes. It can be expected that in advanced age, approximately after the 70th year of life, the illness will be inactive even without prophylaxis. Lithium prophylaxis seems to be efficient, especially in bipolar schizoaffectives. A severe residuum is rare.

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