Abstract

In a prospective study of 86 schizophrenic patients (ICD 9), outcome data were obtained for 86 percent 1 year after clinic discharge. The Strauss-Carpenter outcome scale (frequency of social contacts, employment duration, symptomatology, and duration of rehospitalization) served as the outcome criterion. The Strauss-Carpenter prognostic scale items served as the potential predictors of the course. The followup treatment, which took place during the catamnestic period, was compared with that of other psychiatric diagnostic groups with respect to its continuity and efficiency. The following findings emerged: (1) When compared to patients with neuroses and alcohol dependency, the followup treatment of schizophrenic patients in a large city seems to be better ensured. This is attributed to a clearer concept of treatment for schizophrenic patients. The comparatively favorable outcome of this group of patients seems to be related to this. For the other groups, especially for neurotic disorders, effective treatment concepts have still to be developed and evaluated. (2) Schizophrenic patients receiving continuous neuroleptic medication are rehospitalized significantly less often (28 percent) than those not in continuous treatment (55 percent). This treatment difference is most obvious for patients with multiple admissions. (3) Differences dependent on treatment are not found in other outcome dimensions. However, patients with good heterosexual adjustment profit the most from continuous treatment with neuroleptics in reference to freedom from symptoms. For a more chronic subgroup with a poorer initial level of work adjustment, the functional level deteriorates over the course of illness. (4) Relapse and inpatient readmission are related to retarded recompensation, particularly for chronic patients. This underlines the need for consistent neuroleptic treatment.

The introduction of neuroleptics in the acute and long-term treatment of schizophrenic illness has proved beneficial for the majority of these patients. The effectiveness of the neuroleptics in preventing relapses and in suppressing symptoms (Davis et al. 1980) contributed to psychiatric "deinstitutionalization" and in many places to the development of a community-based network of outpatient and semi-outpatient care (Hansell and Willis 1977; Freeman 1981). On the other hand, it is now known that serious side effects (tardive dyskinesias) occur and that neuroleptics do not help some patients. The value of the neuroleptics and their indication are therefore increasingly judged by the benefit-risk relationship. Since the "outcome" of schizophrenic illnesses is not a uniform process (Strauss and Carpenter 1977), one question about the indication for neuroleptic maintenance treatment is whether their beneficial effects extend to other outcome dimensions beyond the relapse-preventive effect that is assured for approximately 60 to 70 percent of the patients (Davis et al. 1980). On the basis of the results of Hogarty, Goldberg, and Schooler (1974), May and Goldberg (1978) thus ask whether a number of patients on neuroleptic maintenance medication deteriorate in the social dimension despite being protected.
from symptomatic relapse. Johnson (1976) also emphasizes the marked social morbidity of schizophrenic patients even on depot neuroleptics. On the other hand, other authors (Stevens 1973; Barnes et al. 1983) stress the favorable social development of patients in treatment with neuroleptics who have remained free of relapses.

As a consequence, the possible influence of neuroleptic treatment on other target areas such as the social dimension (e.g., social contacts and fitness for work) must be studied more closely (Helmchen 1978). In addition to a multidimensional outcome evaluation, prognostic criteria previously shown to be relevant to the course should be regularly included in therapeutic studies (Carpenter, Heinrichs, and Hanlon 1981). For instance, chronicity of illness is a generally recognized predictor of course, which can be operationalized in various ways. It plays a part both in setting the indication and in the treatment outcome (Carpenter, Heinrichs, and Hanlon 1981). For instance, chronicity of illness is a generally recognized predictor of course, which can be operationalized in various ways. It plays a part both in setting the indication and in the treatment outcome (Carpenter, Heinrichs, and Hanlon 1981).

In the 1-year course study presented here, the multidimensionally recorded outcome of schizophrenic patients was compared with that of other diagnostic groups (Part I). For the schizophrenic sample, various prognostic scales were compared and found to have limited predictive validity (Part II). One issue to be investigated here is whether the outpatient psychiatric treatment of schizophrenic patients is in accord with recognized treatment concepts and how it compares with that of other diagnostic groups. Another issue is whether differences in various outcome areas are related to neuroleptic treatment. In particular, the extent to which interactions between prognostic criteria and the neuroleptic treatment influence the outcome merits attention. Results could help to answer the important question, who profits most and who profits least from neuroleptic treatment?

Methods

Initial Sample. Eighty-six patients with the diagnosis of a schizophrenic or comparable paranoid psychosis (ICD 9) were included in the study at the point of inpatient index treatment. Twenty-two of the patients (26 percent) were being treated on an inpatient basis for the first time. For 64 (74 percent) it was an inpatient readmission. The control group of 75 inpatients included the following diagnoses: neuroses (n = 34), affective psychoses (n = 17), and other diagnoses, especially alcohol dependency (n = 24). (See Part I for further details.)

Course Predictors. The Strauss-Carpenter prognostic scale was used to predict the course (Kokes, Strauss, and Klorman 1977). (See Part II for details of this scale.)

Investigation of the Outcome. One year after clinic discharge, it was possible to interview 108 patients (67.1 percent of the initial sample) in a followup examination. At least partial information could be obtained for 150 patients (93.2 percent) from the total group and for 74 schizophrenic patients (86 percent). There were no differences in age or sex distribution between these patients and the ones with no followup information.

The Strauss-Carpenter outcome scale was used to measure outcome. (See Part II for details of this instrument.)

Catamnestic Treatment. A recording instrument developed in our work group (Bosch and Pietzcker 1975; Gaebel, Pietzcker, and Poppenberg 1981) was used to record data relative to treatment planning at index discharge, as well as data on the catamnestic treatment. In the context of the present assessment, data on treatment planning are limited to the recommended duration of drug therapy by the attending physician at discharge.

Information recorded about the catamnestic followup treatment, which occurred in a naturalistic design, included, for example, duration and regularity of further medical treatment as well as a possible change of physicians. The followup medication was recorded on a five-step scale: no drug intake, short-term drug intake of up to 6 weeks after discharge, later discontinuance of treatment, intermittent treatment during the catamnestic period, and continuous medication during the 1-year catamnestic period. All possible sources of information were included: the patient’s self-report, statements by the family, and statements by the person responsible for catamnestic followup treatment. The drug treatment data were dichotomized for the purpose of better statistical evaluation.

Continuous neuroleptic treatment was present if one could assume, on the basis of all three sources of information, that the patient took his medication regularly throughout the entire catamnestic period. In contrast, the treatment was not continuous if no drugs had been taken, the treatment had been discontinued after discharge, or drugs had only been taken intermittently during the catamnestic period.

Whether the patients had received drug treatment orally, by depot, or in combination was also recorded, but dosages were not taken into account. This information about drug-intake behavior can only be regarded as an approximation (Na-
mann 1977). Even controlled studies face comparable difficulties in assessing drug intake as long as compliance is not controlled through depot injections or measurement of plasma drug level. Although imperfect, our procedure appears to provide an adequate record of compliance (McEvoy, Howe, and Hogarty 1984).

Statistical Analysis. All statistical analyses were conducted with the SPSS 8 computer program (Nie et al. 1975). Factor analyses (analyses of variance) were computed to compare treatment in the schizophrenic group and that in the other diagnostic groups. Outcome in schizophrenic patients in continuous vs. noncontinuous treatment with neuroleptics was compared by t test. To control whether differences in the individual outcome dimensions between the two treatment groups were attributable to the form of treatment or to general course predictors, two-way analyses of variance (ANOVAs) were computed with the treatment group and the item pool of the Strauss-Carpenter prognostic scale as factors. Finally, in a three-factor design, the significance of chronicity (first/ several admissions), treatment group, and rehospitalization in the catamnestic period was examined in relation to the three remaining outcome dimensions (employment duration, frequency of contacts, and symptomatology). The influence of the initial level of these three dimensions (identical characteristic in the year before index admission) was controlled with analysis of covariance (ANCOVA). An α adjustment was made to address the problem of multiple tests, and the level of signifcance was set at \( p \leq .01 \).

Results

Catamnestic Treatment. For the schizophrenic patients, oral neuroleptics (at 74 percent) were the most frequently prescribed discharge medication after inpatient index treatment; injectable depot neuroleptics were second (at 38 percent). For the affective psychoses, antidepressants were more commonly prescribed (at 71 percent) than lithium (at 41 percent). For the neuroses, antidepressants were also first (at 53 percent), followed by oral neuroleptics (at 12 percent). Conversely, for the group of other diagnoses (predominantly alcohol dependency), oral neuroleptics (at 21 percent) came before the antidepressants (at 16 percent). Only 3 percent of the schizophrenic patients and not a single patient among the affective psychoses were without medication at time of discharge, whereas 41 percent of the neuroses and 63 percent of the group of other diagnoses were without medication at that point. As for the suggested duration of drug treatment recommended for those patients discharged on medication, the shortest durations were recommended for patients with neuroses and other diagnoses (table 1). When treatment recommendations were dichotomized into <1 year vs. \( \geq 1 \) year, further drug treatment for at least 1 year was recommended to only 19 percent of the patients with neuroses and, in contrast, to 78 percent of the schizophrenic patients. There were significantly more multiple admissions (87 percent) among the schizophrenic patients with a recommendation for long-term treatment than among those with a recommendation for shorter-term treatment (42 percent; \( p < .01 \)).

Between 63 and 71 percent of patients in all the diagnostic groups were referred to a psychiatrist in private practice for followup treatment. The outpatient clinic was recommended second most frequently as the followup treatment facility for patients with schizophrenia (20 percent), affective psychoses (29 percent), and neuroses (15 percent). In contrast, the group of other diagnoses was referred to the family physician (33 percent) second most frequently. Referrals to psychotherapy occurred predominantly for neuroses (47 percent) and the group of other diagnoses (25 percent). A referral to counseling agencies such as Alcoholics Anonymous also occurred almost exclusively in this latter group (46 percent).

When these recommendations were compared with the catamnestic treatment actually taking place, the psychiatrist in private practice was also first here, being the person most often responsible for followup treatment in all diagnostic groups (56–68 percent). The outpatient clinic was second for the patients with a schizophrenic or affective psychosis (19 and 33 percent, respectively). For the neuroses and other diagnoses, the family physician was second (13 and 27 percent, respectively). Relative to the person most often responsible for followup treatment, patients with neuroses and particularly the group of other diagnoses were in followup treatment for the shortest time (table 1). Of these, only 44 percent (neuroses) and 38 percent (other diagnoses) were in continuous treatment (12 percent of the neuroses and 22 percent of the group of other diagnoses were not in treatment at all) as compared to 70 percent (schizophrenic patients) and 75 percent (affective psychotic patients) in continuous treatment. Patients with neuroses came to followup treatment signifi-
Table 1. Catamnestic treatment variables in a comparison of the 4 diagnostic groups (1-way analysis of variance)

<table>
<thead>
<tr>
<th></th>
<th>Schizophrenias</th>
<th>Neuroses</th>
<th>Affective psychoses</th>
<th>Other</th>
<th>F</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical aftercare treatment</td>
<td>4.4 ± 1.8(^1)(^2)</td>
<td>2.1 ± 1.7(^1)</td>
<td>3.8 ± 2.2</td>
<td>1.9 ± 1.0(^2)</td>
<td>12.99</td>
<td>3/126</td>
<td>0.0000</td>
</tr>
<tr>
<td>recommendation (at discharge)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Medical treatment duration</td>
<td>1.6 ± 0.5(^4)</td>
<td>1.1 ± 0.3(^3)</td>
<td>1.6 ± 0.5(^2)</td>
<td>1.1 ± 0.3(^2)(^4)</td>
<td>12.54</td>
<td>3/144</td>
<td>0.0000</td>
</tr>
<tr>
<td>(catamnesis)(^*)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Duration of medical</td>
<td>3.5 ± 1.0(^1)</td>
<td>2.9 ± 1.4</td>
<td>3.5 ± 1.2</td>
<td>2.6 ± 1.6(^1)</td>
<td>4.34</td>
<td>3/146</td>
<td>0.006</td>
</tr>
<tr>
<td>aftercare treatment (^*)</td>
<td></td>
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</tr>
<tr>
<td>Regularity of medical</td>
<td>3.2 ± 0.9(^1)</td>
<td>2.3 ± 1.2(^1)</td>
<td>3.1 ± 1.0</td>
<td>2.8 ± 1.2</td>
<td>4.93</td>
<td>3/135</td>
<td>0.003</td>
</tr>
<tr>
<td>aftercare treatment (^*)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Change of physician (^*)</td>
<td>0.4 ± 0.7</td>
<td>0.2 ± 0.5</td>
<td>0.1 ± 0.4</td>
<td>0.3 ± 0.5</td>
<td>1.21</td>
<td>3/127</td>
<td>NS</td>
</tr>
</tbody>
</table>

\(^*\) < 3: less than 1 year, >3: more than 1 year.

\(^1\): \(< 6\) weeks after discharge, 4: continuously during catamnesis.

\(^*\): none, 2: several times.

\(^*\): \(< 1\) x/quarter, 4: 1 x/8–14 days.

\(^{1,2,4}\): Mean value differences in Scheffe test, \(p < 0.05\)

Significantly more rarely (34 percent more rarely than once in 3 months) than schizophrenic patients. Only 6 percent of the neurotic patients had been in continuous outpatient psychotherapy—34 percent in intermittent outpatient psychotherapy. Only 23 percent of the group of other diagnoses had, in fact, been in followup treatment. There were no differences between the four diagnostic groups in the frequency of change of persons in charge of treatment.

Schizophrenic patients had received oral neuroleptics (31 percent) or depot neuroleptics (34 percent) continuously as the followup drug treatment. In all, 54 percent had received neuroleptic treatment continuously in the 1-year period. When this is compared to the discharge recommendation for further treatment of > 1 year, a compliance rate of just under 70 percent emerges. The patients who did not have continuous neuroleptic treatment had taken no neuroleptics at all (8 percent), had discontinued the medication within 6 weeks after discharge (14 percent), had discontinued later medication (31 percent), or had taken neuroleptics intermittently during the catamnestic period (47 percent). Nineteen percent of these cases had received only oral neuroleptics; 25 percent, only depot neuroleptics; and 56 percent, combinations.

Patients with affective psychoses received continuous treatment with antidepressants (27 percent) and lithium (33 percent). Patients with neuroses, however, took antidepressants continuously in only 6 percent of the cases, and took tranquilizers continuously in 9 percent and intermittently in 26 percent of the cases. In the group of other diagnoses, no patient had received antidepressants continuously, but 13 percent had taken oral neuroleptics during the entire catamnestic period.

Outcome Differences Between Schizophrenic Patients in Continuous and Noncontinuous Neuroleptic Treatment. Table 2 shows mean differences in outcome for schizophrenic patients in continuous vs. noncontinuous treatment with neuroleptics. Significant differences emerged for duration of rehospitalization; on the average, continuously treated patients were rehospitalized for shorter periods. When this outcome item was dichotomized (readmission yes/no), patients in continuous treatment (28 percent) were found to have been rehospitalized significantly more rarely (\(p < .05\)) than those not in continuous treatment (55 percent). This effect was even more obvious (\(p < .01\)) when computed separately for multiple admissions (26 percent readmissions for those in continuous and 72 percent readmissions for those in noncontinuous neuroleptic treatment). For first admissions, however, this difference could not be established. Table 2 also indicates that patients in continuous treatment, on the average, had
shorter employment durations during catamnesis than those not in continuous treatment.

Interactions Between Neuroleptic Treatment Group and Predictor Variables. To assess interactions between treatment group and prognostic features, two-way ANOVAs were computed for each of the four outcome criteria with the treatment group and the items of the Strauss-Carpenter prognostic scale. A hierarchical design was chosen due to the unequal cell frequency (Overall and Spiegel 1969). This analysis was intended to clarify whether differences between the treatment groups for duration of rehospitalization and employment duration reflected other initial characteristics of the population in treatment.

For the outcome criterion "symptomatology," no main effect was found for the factor "treatment group" (as would be expected from table 2), but a significant interaction with the prognostic item "heterosexual adjustment" (p = .001) did emerge (see figure 1). Patients profited more from continuous than noncontinuous treatment (p < .001) at the "good pole" of the predictor "heterosexual adjustment" (most apt to be married patients). At the "poor pole" this relationship is reversed, but is less pronounced (p < .05).

The quality of social contacts before index admission proved to be the best predictor for the outcome criterion "social contacts" (p = .001). Here there was no main effect for the treatment group, and there was no significant interaction effect.

Employment duration before index admission emerged as (see, also, Part II) the best predictor for the outcome criterion "employment duration" (p = .001). This variable clarifies the amount of variance to a great extent. In combination with this variable (hierarchical design), a significant main effect is no longer detectable for the treatment group. Since the treatment group did not contribute to a further explanation of the variance, the treatment-dependent difference in "employment duration" during catamnesis apparently reflects the fact that the two treatment groups already had different employment durations at the beginning of treatment. As indicated in figure 2, the group of patients with continuous neuroleptic treatment not only tends to have shorter employment durations at index admission but also continues to deteriorate significantly during the followup (p < .05).

Finally, a significant main effect was not found for any of the predictor variables studied for the outcome criterion "duration of rehospitalization." This is in accord with the findings in Part II. In contrast, a continuous main effect was detected for the treatment group (p = .01), as was to be expected from table 2.

In summary, these results show that the outcome characteristic "rehospitalization duration" is not predicted by any of the items in the Strauss-Carpenter prognostic scale. Outcome differences are exclusively traceable to the treatment group. In contrast, a great extent of the variance in "frequency of social contacts" and "employment duration" is explained by the analogous prognostic items. A relevant interaction between the prognostic item "heterosexual adjustment" and the treatment group could only be established for the outcome criterion "symptomatology." Married patients profit the most from continuous neuroleptic treatment.

Interactions Between Chronicity, Treatment Group, and Rehospitalization During the Catamnestic Period. To analyze the influence of an inpatient readmission during the
catamnestic period upon the three remaining outcome criteria, three-way ANOVAs were computed with the factors chronicity (first admission vs. multiple admissions), treatment group (continuous vs. noncontinuous treatment with neuroleptics), and rehospitalization (yes/no) for symptomatology, frequency of social contacts, and employment duration. Here the initial level of these three dimensions was introduced as a covariate in the form of the analogous items from the Strauss-Carpenter prognostic scale.

For the area of symptomatology, an interaction between chronicity and rehospitalization appeared significant only at the level of \( p < .05 \). Only patients with multiple episodes readmitted on an inpatient basis exhibited greater symptomatology at the time of followup and, therefore, possibly have greater difficulty in recovering from a relapse than readmitted first episode patients. A separate analysis for first and multiple episodes supports this hypothesis. For the multiple episodes, a significant main effect \( (p < .01) \) emerges for readmission such that patients not rehospitalized exhibit less symptomatology.

No significant main or interactional effects emerge for the three factors studied in regard to the frequency of social contacts. Only the covariate “frequency of social contacts in the year before index admission” contributes significant explanatory power \( (p = .001) \).

There is a significant effect \( (p = .001) \) of the covariate “employment duration during the year before index admission” in regard to employment duration. In addition, an interaction between chronicity and treatment group emerges, but only at the \( p < .05 \) level of significance. Patients with multiple admissions who were not continuously treated with neuroleptics have longer employment durations than patients in continuous treatment. This result, though only marginally significant, illustrates that in spite of controlling the initial data, a deterioration in work adjustment among the patients in continuous neuroleptic treatment is traceable to the group of multiple admissions (see figure 2). In the context of this study design, it is not possible to decide whether this effect appears in spite of or because of continuous neuroleptic treatment.

**Discussion**

**Adequacy of Outpatient Treatment in Schizophrenics and Other Diagnostic Groups.** References were already made in Parts I and II to the heterogeneous, relatively favorable outcome of this schizophrenic sample in comparison to the other diagnostic groups. If one looks at the recommendations for further treatment made at index discharge and at the followup treatment that actually took place during catamnesis, one has the impression that the out-
patient therapeutic care of schizophrenic patients is ensured to a large extent today. Seventy percent of the patients took neuroleptics during the entire catamnestic period in accordance with the expressed treatment recommendation. This statement, of course, is only an approximation of the actual drug-intake behavior in the absence of objective measures of compliance. Nevertheless, this percentage falls in the range of percentages reported in the literature about the compliance of schizophrenic patients treated with depot neuroleptics (Johnson and Freeman 1973: 80-85 percent) or oral neuroleptics (Renton et al. 1963: 54 percent). These encouraging results probably reflect the fact that today there are generally recognized medical treatment concepts for this illness. The indisputable effect of the relapse-preventive and symptom-suppressive effectiveness of the neuroleptics (Davis et al. 1980) has made them a standard part of treatment. Here outpatient treatment is mainly in the hands of psychiatrists in private practice. A concept of medical therapy for the group of neuroses, for example, is much less generally accepted than for the schizophrenic and affective psychoses. In spite of the high proportion of neurotic depressions, continuous treatment with antidepressants during catamnesis occurred in only 6 percent of the cases. If one considers the low number of symptom-free neurotic patients at the followup examination (only 14 percent were symptom-free compared to 35 percent of the schizophrenic patients), the question arises whether adequate medical followup treatment was given here. On the basis of the known high relapse rate of depressive illnesses, the high proportion of chronic courses (ranging from 10 to 15 percent), and the proven prophylactic effect of antidepressant maintenance medication for unipolar depressions (Klerman et al. 1974; Davis 1976; Weissman, Kaul, and Klerman 1976; Weissman and Klerman 1977; Weissman et al. 1981), antidepressant maintenance medication following an acute episode should be pursued more consistently. The high percentage of neurotic patients (35 percent) in intermittent or continuous treatment with benzodiazepines is striking, particularly in view of the lack of effectiveness of benzodiazepines specific to depression (Covi et al. 1974).

For the group of patients with other diagnoses, which is mostly made up of patients with alcohol problems, the medical followup treatment was also apparently inadequate. Particularly striking is the high rate of attrition in this population at the time of the followup examination, which other authors have also observed (Bell et al. 1982). It possibly indicates dropout rates of particular patient groups that are specific to treatment. Thus, one might consider, for example, whether the psychotherapeutically oriented followup treatment that is apt to be regarded as appropriate should be modified in particular cases in favor of a more "medically" oriented followup treatment (Smart and Gray 1978). For the group of depressive neuroses, for example, alternative forms of treatment are available—for example, antidepressant medication and problem-centered psychotherapy. In this way, patients can have a choice of medical or psychotherapeutic treatment (Gaebel and Linden 1984). Possibly the discrepancies noticeable at index discharge in the self-assessment and observer assessments of neurotic patients (see Part I) are relevant here. Chesney et al. (1983) demonstrated that high dropout rates arise in outpatient treatment when the symptom-related assessment by the patient does not concur with that of the physician. The patient feels he is sicker than the physician does, and nevertheless no medical help is offered to him.

Neuroleptic Treatment Outcome in Schizophrenic Patients. Long-term neuroleptic treatment of more than 1 year was recommended for more than three-quarters of the schizophrenic patients at index discharge. In line with usual practice, such a recommendation was made predominantly to patients with a relapsing course of illness, i.e., patients with multiple admissions (Helmchen 1978; Pietzcker 1978).

In the outcome comparison of patients in continuous and noncontinuous treatment with neuroleptics, a significant difference was found in the rehospitalization rate of both groups. Various factors generally play a part in the occurrence of an inpatient readmission (Strauss and Carpenter 1972). Since we demonstrated that a psychotic relapse usually underlies an inpatient readmission of schizophrenic patients (see Part I), one can assume that the outcome difference has its origin in differences in relapse frequency. Because the two treatment groups were not randomized, these findings concerning the varying relapse rate cannot be regarded as proof of the effectiveness of continuous neuroleptic treatment in preventing relapse. On the other hand, similar results have been repeatedly reported in comparable naturalistic studies (e.g., Mantonakis et al. 1982). Our relapse rates of 55 percent for noncontinuous and 28 percent for continuous neuroleptic treatment correspond to comparative figures from controlled studies comparing placebos and active.
drugs (Davis et al. 1980). Intermittent treatment with neuroleptics cannot be equated with placebo treatment, but almost half of the patients discontinued medication just a few weeks after index discharge, so that they were in fact without medication for the rest of the catamnestic period.

In a separate analysis comparing multiple admissions and first admissions, the heightened relapse rate for multiple admissions not on maintenance neuroleptics was even more obvious. For patients with first admissions, outcome differences between continuous and noncontinuous treatment groups were not apparent. This finding seems to confirm the correctness of the practice of preferentially recommending maintenance treatment for patients with multiple admissions (Gaebel and Pietzcker 1983). This finding also proves that illness chronicity defined in this way (first vs. multiple admissions) represents a valid criterion for the prediction of outcome. Although Kane et al. (1982) were also able to show the relapse-preventive superiority of active drugs as compared to placebos for first admission patients, a general recommendation for maintenance treatment for first episodes does not seem to be justified due to the prognostic heterogeneity of this group.

Neuroleptic Treatment Outcome: Interaction With Prognosis. A remaining question was whether the compliant patients represented a special population whose special characteristics explained their lower relapse rate. In fact, the two medication groups (continuous vs. noncontinuous) were slightly different in the degree of employment duration before index admission, a difference that continued during followup. Patients in continuous treatment were apparently more poorly integrated in the work sphere. However, of the items from the Strauss-Carpenter scale whose prognostic validity could be shown for the social dimension (Part II), not a single one proved predictive of the probability of relapses. The fact that none of the characteristics represented in this scale played a part in prognosis—in regard to previous course of illness, social adjustment, and socioeconomic status—and also did not interact with the treatment group suggests that differences in relapse are attributable to a large extent to differences in treatment. In contrast, the outcome dimensions “social contacts” and “employment duration” are predicted by the analogous prognostic characteristics and are not related to the treatment group. Only for the outcome criterion “symptomatology” was a highly significant interaction between “heterosexual adjustment” and treatment group found. Goldberg et al. (1977) also reported comparable interactions in their predictor study. May and Goldberg (1978) argued that the better outcome of drug-treated married patients could be due to their more easily guaranteed compliance. If we accept this interpretation, we can conclude that the favorable effects of maintenance neuroleptic treatment are in only two areas of outcome: symptomatology and relapse (readmission).

As became apparent in the intercorrelation of the outcome dimensions (Part II), readmission is only weakly related to symptomatology in the 1-year course. On the other hand, a relapse has unfavorable consequences in regard to the further course of symptomatology, particularly for patients with multiple admissions. It was also possible to exhibit these results on the basis of more refined analysis with the aid of AMP syndromes (Gaebel and Pietzcker 1984). Patients with multiple admissions apparently require a longer time to recoup compensation after another relapse than those with first episodes. In view of the stronger relationship between symptomatology and employment duration (Part II), delayed remission after relapse and readmission may have adverse effects on work adjustment. On the other hand, there is a subgroup of chronic patients who deteriorate in work adjustment even under continuous neuroleptic treatment and without undergoing a relapse. Within the context of our study design, the interpretation of this finding remains controversial. On the one hand, neuroleptics may intensify already existing negative symptoms, thereby worsening the social adjustment (May and Goldberg 1978). On the other hand, there may be a small subgroup of patients who progressively deteriorate in spite of treatment. Although we did not find global harmful effects of neuroleptic treatment on social outcome, especially social contacts (in agreement with Rosen et al., 1981), and positive effects seem to prevail, the question of negative effects (especially on work function) deserves further attention.

Conclusion

In summary, these findings in a naturalistic context show that neuroleptic treatment plays a significant role in preventing relapse in a majority of the patients studied here, particularly the more chronic ones. Due to the reduced capacity for compensation in this group of patients, it seems particularly important to ensure that they receive consistent outpatient neuroleptic treatment. Comparison with other diagnostic
groups revealed that the followup treatment of schizophrenics in a large city today is indeed better guaranteed than for other diagnoses. The social dimension, particularly that concerning social contact behavior, is influenced by longer-term, possibly premorbid characteristics. However, it cannot be ruled out by our data that neuroleptic treatment has a detrimental effect on the work adjustment of a small subgroup of chronic patients. Here, more controlled research is still needed.

References


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