

Prescribing Patterns in an Outpatient Psychiatric Clinic

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Summary. Prescribing patterns were studied in a psychiatric outpatient clinic. Psychiatrists tended to prescribe large quantities of antidepressants or other drugs. In contrast, the daily doses for antidepressants and neuroleptics were often too low. Significant variations were noted between three outpatient clinics in the choices among a various psychotropic drugs from a given therapeutic group.

Key words: Psychotropic drugs – Prescribing patterns – Drug utilization – Psychiatric outpatients

The prescribing behavior of physicians has been extensively studied; general aspects, together with individual (Macaraeg et al. 1971) or geographically defined habits have been identified, e.g., mixtures of antibiotics in the same pharmaceutical form were a favorite in Spain (Erill 1974). This study on prescribing patterns in a Swiss outpatient psychiatric clinic was aimed at describing the relative importance of pharmacological versus nonpharmacological management of patients and at giving a general outline on the use of psychotropic medications. We compared our results to those obtained in two other Swiss outpatient psychiatric clinics, for which data on prescribing patterns were available (Battegay and Wacker 1982; Dolivo 1981).

Methods

All prescriptions written by five physicians who worked in an outpatient clinic of the Geneva state mental health institution were studied during a 3-month period. Each prescription sheet (PS) was analyzed by counting the number of different drugs, i.e., the number of individual prescriptions (IP). Many PS contained more than one IP. The daily dose and the total amount prescribed were recorded for each medication. For neuroleptics, the equivalent doses of chlorpromazine were calculated using conversion factors for the relative antipsychotic potencies (Lehmann 1975). The theoretical duration of each IP (total amount of drug prescribed divided by the daily dose) was compared with its practical duration (interval between successive IP for the same drug given to the same patient). The results were obtained by computer analysis, and all statistics were descriptive.

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Results

During the 3-month period, the physicians gave 762 consultations for 244 patients of 18 to 65 years of age, of which 52% were women. There was no tendency for a different pattern of symptoms or diagnosis among women or men; however, we had access to clinical information for only half of the patient sample. Among the 244 patients, 151 received no prescriptions during the 3 months of the study. A prescription was written in the course of 38% of all the consultations. The total number of PS was 403 and that of IP was 722, indicating that an average of 1.8 different drugs was given per PS. Of the PS 21% were for three drugs or more and 23% of the PS contained indications to take 5 tablets or more per day. On 7 PS, the indication was to take 10 to 13 tablets per day. A total of 40 different psychotropic drugs accounted for 88% of the IP, and there were 38 different nonpsychotropic drugs prescribed.

Although women represented half of the patient population, they received twice as many IP for antianxiety drugs or sedatives and one and a half more IP for neuroleptics. There were no differences in the number of women versus men receiving an antidepressant.

The profile of the prescribing and consulting of the five physicians is described in Table 1. The first physician wrote 40% of all the PS and 42% of all the IP although he was treating 28% of the whole patient population. He was therefore identified as a high prescriber.

The psychotropic drugs were separated into five classes. Compounds of recent commercialisation were more often prescribed for antianxiety or hypnotic drugs than for antidepressants or neuroleptics (Table 2). The individual physicians used 9 to 28 different psychotropic agents during the 3-month period, which represents less than 30% of all drugs registered in Switzerland for the five classes of psychotropic agents listed in Table 2. Overall, the frequency of prescriptions among each class of psychotropic drugs was similar for the five physicians: anxiolytics represented 19% of all IP (9% to 28% depending on the physician), sedative-hypnotics 21% (19% to 28%), antidepressants 12% (11% to 17%), neuroleptics 28% (19% to 36%) antiparkinsonians 7% (5% to 9%) and nonpsychotropic medications 13% (5% to 32%). The average ratio of antiparkinsonians to neuroleptics was 0.25 when IP were considered and 0.31 when patients were considered.

The theoretical duration of the individual IP could be studied in only 488 of the 722 cases, because 16% to 56% of the IP (depending on the physician) carried no mention of the daily dosage. Table 3 is a list of the theoretical durations of IP as a function of the classes of drugs. The first and fourth phy-

Table 1. Consultations and prescriptions during a 3-month period

| Physicians | Number of patients | Number of consultations | % of all consultations with a PS | Number of consultations per patient | Number of PS per patient ^a | Number of IP per patient ^a |
|------------|--------------------|-------------------------|----------------------------------|-------------------------------------|---------------------------------------|---------------------------------------|
| 1 | 68 | 234 | 53 | 3.44 | 2.37 | 4.41 |
| 2 | 74 | 196 | 35 | 2.65 | 1.27 | 1.74 |
| 3 | 62 | 201 | 55 | 3.24 | 1.58 | 2.90 |
| 4 | 19 | 82 | 27 | 4.32 | 1.68 | 4.00 |
| 5 | 10 | 25 | 24 | 2.5 | 0.44 | 1.80 |

^a Only those patients who received a pharmacological treatment were included

Table 2. The psychotropic drugs prescribed

| Drugs | Number of different drugs | Number of IP | % of all IP ^a | Drugs accounting for 75% or more of the IP within each class ^b |
|-------------------|---------------------------|--------------|--------------------------|---|
| Anxiolytics | 8 | 135 | 21.5 | Bromazepam, lorazepam |
| Hypnotics | 7 | 154 | 24.5 | Flunitrazepam, flurazepam |
| Antidepressants | 12 | 88 | 14.0 | Clomipramine, amitriptyline, nomifensine |
| Antipsychotics | 11 | 200 | 32.0 | Thioridazine, levomepromazine, flupenthixol, haloperidol |
| Antiparkinsonians | 2 | 49 | 8.0 | Biperidine |

^a Nonpsychotropic drugs excluded

^b Flunitrazepam represented 15.3%, bromazepam 13.1% and thioridazine 10.9% of all IP for psychotropic drugs

Table 3. The theoretical duration of prescriptions

| Theoretical duration | Drug class and number of prescriptions (IP) | | | | | |
|----------------------|---|----|----|----|----|----|
| | Ax ^a | Hy | Ad | Nl | At | Va |
| 30 days or less | 85 | 83 | 57 | 94 | 23 | 30 |
| 1 to 10 days | 39 | 29 | 13 | 19 | 8 | 11 |
| 11 to 20 days | 34 | 37 | 23 | 52 | 13 | 15 |
| 21 to 30 days | 12 | 17 | 21 | 32 | 2 | 4 |
| More than 30 days | 17 | 19 | 17 | 46 | 11 | 6 |
| More than 100 days | 4 | 0 | 9 | 16 | 4 | 0 |

^a Ax: anxiolytics; Hy: hypnotics; Ad: antidepressants; Nl: neuroleptics; At: anticholinergics; Va: varia (nonpsychotropic medications)

sicians wrote respectively 19% and 14% of their IP with theoretical durations of 30 days or more, the three other physicians wrote half of their IP for times covering 1 month or more of treatment. The highest theoretical duration was 400 days, on an IP for a neuroleptic. Antidepressants were often prescribed in quantities such that a fatal overdose could be possible: 38% of the IP were for 1.5 g of antidepressants or more, 35% were for 1 to 1.5 g and only 27% for less than 1 g. The maximum amount on a single IP was 10 g of trimipramine.

In contrast, the daily doses were often low: when mianserin (a more potent drug) was excluded, 18 of 53 IP were for antidepressant doses of less than 75 mg/day (i.e., 50 mg or less). Neuroleptics were also administered at relatively low doses: 30% (41 out of 135) of the prescriptions were for doses equivalent to less than 200 mg of chlorpromazine. The maximum daily dose prescribed was equivalent to 900 mg of chlorpromazine. The tendency to prescribe low equivalent doses of

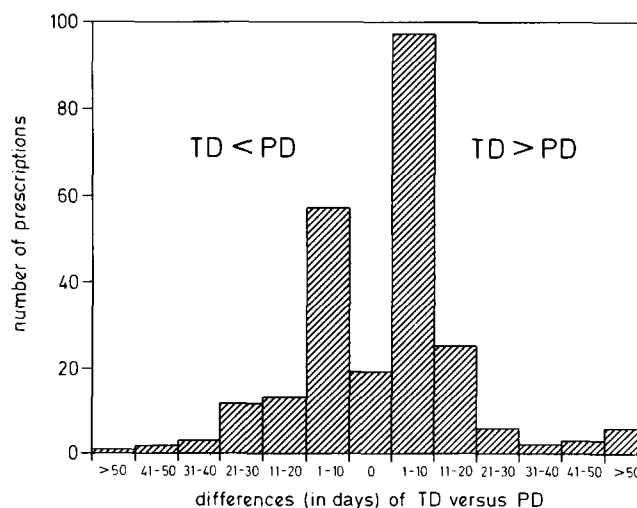


Fig. 1. Theoretical (TD) versus practical (PD) durations of 242 individual prescriptions (IP). The differences (in days) between TD and PD are on the abscissa. For a value of 0, TD and PD were identical. The IP with TD smaller than PD are on the left side, and the opposite situation is presented on the right side of the figure

chlorpromazine was not found for all neuroleptics: for methylperidol and trifluoperazine, 17 of 19 IP were for doses equivalent to more than 200 mg of chlorpromazine. The choice among different neuroleptics was thus somewhat predictive of the level of dopaminergic blockade theoretically achieved.

The practical duration of 242 IP for psychotropic drugs could be compared to their theoretical duration, as presented in Fig. 1. In most cases, the differences between the theoretical and the practical durations were small (i.e., $< \pm 10$ days), although differences greater than 20 days were noted for some prescriptions. Four patients are presented in detail in

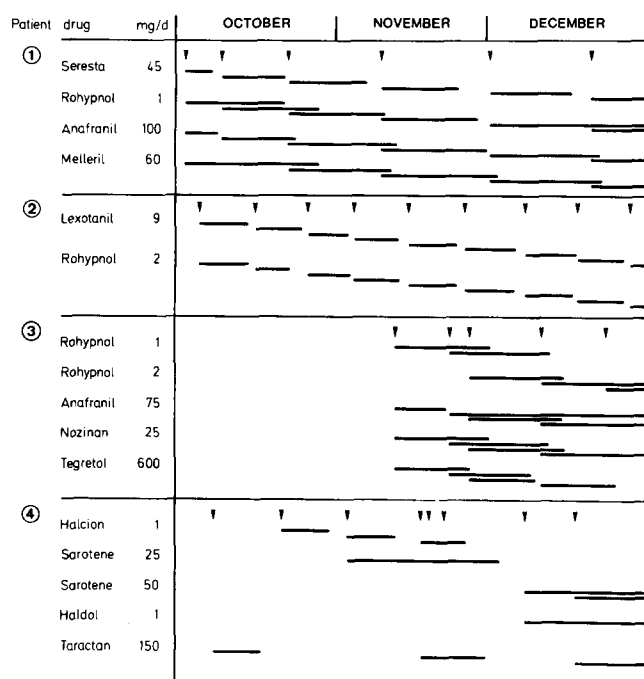


Fig. 2. Individual comparison of theoretical (TD) and practical (PD) durations of prescriptions in four patients

Fig. 2: patients one and two received psychotropic drugs with no theoretical lack of medication and no possibility for accumulation of unused drugs, had they been compliant to the prescriptions. These patients were treated by the first physician, a high prescriber. However, he wrote his prescriptions with precision and the differences between theoretical and practical durations of his drug treatments were generally small. The third patient received more drug than needed, when evaluated from the doses written on the IP. Finally the fourth patient is an example of discontinuous neuroleptic treatment. The simultaneous prescription of neuroleptics and antidepressants, as in three of the cases from Fig. 2, was present in 11% of all prescriptions for antidepressants and 5% of all prescriptions for neuroleptics.

Discussion

The psychiatric clinic studied is run by therapists who consider pharmacotherapy as an alternative approach to be used when psychotherapeutic measures have a low chance of success, and indeed 66% of the patients received no psychotropic drugs. No evaluation is possible as to whether a greater or a smaller percentage of the patients should have received psychotropic medications. The following comments concern those patients to whom a psychotropic agent was prescribed.

Although based on a small number of physicians and patients, our work confirmed the existence of high prescribers. The high prescriber we identified wrote his prescriptions with more detailed information as to the daily doses and schedule of administration, suggesting that although he relied more on pharmacotherapy, he probably used drugs more adequately. The fact that he was precisely aware of the amounts of medication he prescribed is suggested by the small differences between theoretical and practical durations of his prescriptions. Knowing the theoretical duration of a prescription can help evaluate the compliance of patients, for example when

the next appointment is scheduled at the time when the amount of medication prescribed should have been utilized.

Half of all the prescriptions for psychotropic drugs covered more than 1 month, and a few prescriptions more than 100 days. Such prescriptions, whether or not the drug could be toxic in overdose, should remain the exception, unless the benefits, risks and disadvantages of taking the drug are regularly reevaluated with the patient. Therefore, many of the IP were for quantities of drug sufficient for a suicidal attempt to be quite dangerous e.g., more than 1 g of tricyclic antidepressant was prescribed. This prescription of single high amounts of antidepressant was not justified by high daily dosages, or by absence of small packages on the market, or by the time between consultations. Obviously, the physicians did not follow the recommendation to prescribe antidepressants in amounts sufficient for only 7 to 10 days of treatment.

That women receive more prescriptions for psychotropic drugs than men has been found in many though not all studies (Williams et al. 1982). This fact was observed in our study for sedatives or anxiolytics. In fact, it has been suggested that advertisement in medical journals contained bias that could reinforce this tendency (King 1980). Nevertheless, Rosser (1982) identified definite characteristics of women who received benzodiazepines and concluded that the administration of this class of drugs was not carried out indiscriminately by family physicians.

Prescribing studies in other outpatient clinics have been carried out in Switzerland, Battagay and Wacker (1982) have assessed the prescriptions given to every new outpatient in 1980 at the Basle state clinic. Among antidepressants, clomipramine represented 8% and maprotiline 30% of the prescriptions. In our study, clomipramine and maprotiline accounted for respectively 45% and 2.3% of the prescriptions for antidepressants. This geographical difference in the choice of doctors was not apparent for the benzodiazepines: bromazepam and lorazepam accounted for 75% of the antianxiety agents prescribed in Geneva and also in Basle. Dolivo (1981) studied the prescriptions issued to 636 patients who came to the state outpatient clinic in Lausanne between November 1976 and January 1977. The frequency of prescriptions for thioridazine was 5 times smaller than in our study and that for dibenzepine 30 times higher. Both drugs have been on the market for many years, and the geographical difference in choices of medication is probably not explained by the time between our study and Dolivo's work. The ratio of antiparkinsonian drugs to neuroleptics was 0.32, not different from our findings, but procyclidine was used for half of the patients given an antiparkinsonian drug in Lausanne, whereas this drug was never prescribed by the Geneva physicians.

There is no major discordance in prescribing patterns among these three Swiss outpatient clinics. However, when choosing among psychotropic drugs of comparable efficacy, Swiss doctors have preferences that are clearly determined by a geographical factor. These differences probably have no clinical consequences, unless future more efficacious or less toxic drugs are not accepted rapidly enough as new therapeutic agents. In this respect, the limited prescribing of recent antidepressants in our study is of interest.

For commercial purposes, the knowledge of physicians' prescribing habits has long been recognized by the pharmaceutical industries as necessary information, and systems of data collection have been operating for years. Doctors show less interest in performing prescribing pattern studies, in part

because few original discoveries are made in this type of research. The major role of prescribing pattern studies should be a didactic one (Schulz 1976): the identification of patterns of drug utilization that could be corrected by feed-back information to doctors. Criteria for screening the use of psychotropic agents have been proposed (Dorsey et al. 1979), and although they do not offer prescribing guidelines, have been applied in quality reviews of outpatient psychopharmacological treatments, and excessive duration of drug treatment was the most common questionable practice (Kass et al. 1983). Prescribing pattern studies also enable the detection of prescribing behaviours that raise issues needing further and more formal evaluations. For example, the use of lower doses than usually recommended for antidepressants or neuroleptics was an unequivocal finding in our sample. European doctors appear to have different opinions from their North American colleagues: they consider these psychotropic drugs to be more potent (Fisch et al. 1982) and prescribe them in smaller daily doses, although the efficacy of such a treatment modality is still controversial.

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