CAUSES OF VARIATION IN THE USE OF ANTIDIABETIC DRUGS AMONG THE NORDIC COUNTRIES.


Marked and stable variation in the use of antidiabetic drugs has been observed among the Nordic countries. The use of antidiabetic drugs in Sweden and Finland is twice as high as the use in Norway and Denmark and four times as high as in Iceland.

The aim of the study was to evaluate possible causes for the variation in the use of antidiabetic drugs. Data was collected from existing studies from the five Nordic countries. Special attention was paid to prevalence of diabetes, prevalence of risk factors such as age and obesity, therapeutic traditions and recommendations for the management of diabetes.

The prevalence of diabetes is highest in Finland, consistent with a higher prevalence of obesity in the population aged 45-74 years compared to other Nordic Countries. Even if the Swedish prevalence of diabetes does not reach the same level as in Finland the prevalence is higher than in Norway and Denmark. Iceland has the lowest prevalence. The age distribution varies between the countries. 15% of the Swedish population is >65 years old compared to 13% in Norway and Denmark and 9% in Finland and Iceland. Higher recommended doses of oral antidiabetics was found in Finland and Sweden than in the other countries, and in agreement with this higher prescribed daily doses of individual drugs was found in these two countries.

In conclusion, differences in prevalence of diabetes, prevalence of risk factors such as age and obesity, therapeutic traditions and recommendations for the treatment of diabetes and therapeutic traditions may partly explain the great variation in the use of antidiabetic drugs among the Nordic countries. Furthermore, different prevalence of risk factors such as age and obesity may contribute to explain the differences in prevalence of diabetes.

PATTERNS OF DRUG USE IN A SPANISH RURAL COMMUNITY.

Cos MA, Galende I, González H, Soto J, Vázquez-Barquero JL.

Chronic drug use was investigated by means of a personal interview, in a random sample of 1250 persons stratified by sex and age. Sample was extracted from the electoral register of a Cantabrian nonurban coast area of 9252 inhabitants. Out of the 1220 valid interviews, 440 (36%) usually consumed medicines. Two different analysis were made. First of all medicines used, contained one active principle in 65% of the cases while 35% had multiple active principles (50% in men and 52.8% in women). Second, the most prescribed medicines were analgesic (38.5%), antihistaminic (32%), antitussives (10.8%), antidiarrhoeals (6.9%) and corticosteroids (3.7%). The amount of use varied from 1 to 21.8% of the adults.

Women also presented a higher rate of psychotropic drug use (10.8%) than men (2.6%).

In view of the consumption characteristics, the use of drug was indicated by prescription in 92% of the cases while self-medication took place in about 16%.

Medicines used, contained one active principle in 65% of the cases, two active substances in 14% and three or more in 21%. The drugs most frequently consumed were included in the following groups: analgesic, antidiarrhoeal and anti-inflammatory. The most prescribed medicines were: (1) psycholeptics (30%); (2) anti-depressants (25.9%); (3) analgesic (22.7%); (4) anti-asthmatics (10%); (5) peripheral vasodilators (10%); (6) antihypertensives (9%) and anti-anti-inflammatory (19%).

The Norwegian Radiumhospital, Montebello, N-0316 Oslo 3, Norway

**The Norwegian Radiumhospital, Montebello, N-0310 Oslo 3, Norway**
SHIFTS IN DRUG USE AND THE COST EFFECTS
T.M.L.Geldof, A.P.M.van der Lee, A.M.Bertens,
N.Th.Meis.

Most countries face a rise in drug expenditure due to volume and price changes. Also shifts in drug use from cheap drugs to more expensive ones, are recognized as a cost increasing factor. These shifts are generated by new drugs, changing pharmacotherapeutical concepts and interaction with non-drug therapies. Not all shifts lead to an improvement of the therapeutic results. An overall volume change is the actual volume change minus the normal expected volume change in case the volume change is called the normal growth and is expected to apply to all individual drugs within the cluster. An individual drugs' actual volume change is divided into a normal growth part and a non-drug therapy part. The normal growth part of a drugs' expected volume change in case the volume change of the drug equals that of the cluster. The shift part is the actual volume change minus the normal growth part.

Volume changes are attended by cost changes (cost = volume x price). When the price of drugs also changes, the total cost change of a drug can be divided into volume components (normal growth part x new price, shift part x new price) and a price component (old volume x price difference).

Health Insurance Fund Council (Ziekenfondsraad)
P.O. Box 396, 1180 BD AMSTELVEEN, The Netherlands.

SHIFTS IN DRUG USE AND THE COST EFFECTS
T.M.L.Geldof, A.P.M.van der Lee, A.M.Bertens,
N.Th.Meis.

Volume changes are attended by cost changes (cost = volume x price). When the price of drugs also changes, the total cost change of a drug can be divided into volume components (normal growth part x new price, shift part x new price) and a price component (old volume x price difference).

Health Insurance Fund Council (Ziekenfondsraad)
P.O. Box 396, 1180 BD AMSTELVEEN, The Netherlands.

PROSPECTIVE MONITORING OF THE INDEX OF DISEASE ACTIVITY AND THE QUALITY OF LIFE IN OUT-PATIENTS ON ANTI-EPILEPTIC DRUGS
A.Keyser, R.Wizza, Y.Hekster and M.Schaap

After a retrospective epidemiological analysis of an adult out-patients epilepsy population, a prospective pilot study was started to assess the feasibility of monitoring patient characteristics based upon Index of Disease Activity (IDA) and Index of Patient Validity (IPV). In total 75 patients were followed, 46 males and 29 females, with a ratio of 1.7:1. Generalized seizures occurred in 59.9% of cases, complex partial seizures in 41.4% and elementary seizures in 19.1%. Some patients showed a variety of seizure types. Monotherapy was obtained in 52/75 patients (69.4%), with carbamazepine as the most frequently prescribed drug (33/52, 63.5%). IDA levels below 50 were considered as indicative of inappropriate drug control of disease; this level was obtained in 73.4% of the patients. In this patient population 70.6% had IPV values below 50, that are considered as a patient acceptable quality of life level. 40/75 patients (57.3%) on request reported adverse drug reactions of the anti-epileptic drugs. It was not possible to correlate high and toxic levels of plasma drug concentrations with neurotoxic adverse effects. In this patient population plasma concentrations of antiepileptic drugs were monitored and 81% of plasma concentrations were within the therapeutic range.


Institute of Neurology and Department of Clinical Pharmacy,
Sint-Radboud University Hospital, Nijmegen, The Netherlands

DRUG CHOICE BEHAVIOUR BY PHYSICIANS.
Flora Haaijer-Ruskamp, Petra Deni, Diurre Zijaling.

Evaluation of new information strategies to improve prescribing behaviour shows varying results. A central problem is the lack of understanding how drug choice decisions are made and how information can influence this decision process. In a study of 159 general practitioners in the Netherlands drug choice was studied for irritable bowel syndrome (IBS) and renal colic using a behavioral model. According to this model drug choice results from the interaction of 1. prescribers' beliefs about treatment effects (effectiveness, side-effects, compliance and costs) weighted for the values attached to these effects. 2. beliefs regarding the (dis)approval of pharmacists, other gp's and specialists, weighed for the motivation to comply with them. 3. past experience with the drug A. beliefs about patient demand for drugs weighted for the motivation to act accordingly.

The influence of the patient demand on the drug choice itself appeared to be neglectable. The combined effect of the other three elements predicted stated drug choice correctly in 74% (for IBS) and 78% (for renal colic). Beliefs and values about treatment effects determined drug choice only in part. Just as important - if not more - was the direct professional environment. Moreover it was found that the drug preferences were more related to beliefs about effectiveness than to beliefs about side-effects for both disorders studied. This was in contrast to the statements of the prescribers that the type of disorder determined the value they attached to the different drug aspects (the less serious the disorder, the more side-effects were said to be valued over effectiveness). The results imply that only a limited effect is to be expected from the provision of technical drugtherapeutic information. However 40% of the gp's reported little motivation to take such information to heart.


ATC - USEFUL TOOL IN ADR MONITORING
Marie Lindquist, Pharmacist.

At present, 26 countries are participating in the WHO International Drug Monitoring Program. Case reports of suspected adverse reactions are forwarded to the WHO Collaborating Centre in Uppsala, Sweden, and are stored in a database which in March 1987 contained 500,000 individual case reports. Information on all drugs appearing on these reports are stored in a drug register. Each year around 2000 new drug names are entered. By the end of 1986 the register included 16,400 different trade names. For every drug, active ingredients, manufacturer, source and therapeutic use are coded on the ATC system/Anatomical-Therapeutic-Chemical classification which in 1982 replaced the formerly used pharmacologic-therapeutic classification system. In addition to routine output documents, issued on yearly/quarterly basis, answers to search requests play an important role in the monitoring system which is fed back to the participating national centres.

A well-functioning therapeutic classification system is necessary in the handling of search requests comprising different drug categories, and it can also be applied for grouping of drugs in output documents. The main reasons for adopting the ATC classification were its hierarchical structure, enabling flexible searches, and that it is continually developed and revised, thus being up-to-date and suitable for coding of new substances. As the ATC system was developed for the classification of medicines in the Nordic countries, only drugs on the Nordic market have official ATC-codes, and therefore many of the drugs in the WHO register have been assigned unofficial codes by the WHO centre staff. To try to solve coding problems a continuous communication has been established with the WHO centre in Oslo, responsible for the ATC system. The experience gained at our centre from coding drugs globally has been available on the international scene. Further development of the ATC system which is necessary considering the increasing international interest in this classification system.

WHO Collaborating Centre for International Drug Monitoring, Box 607, S-751 25 Uppsala, Sweden