

Progress in Clinical Pharmacy III

**H. Turakka & E. van der Kleijn
Editors**

PROGRESS IN CLINICAL PHARMACY III

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Pharmacy held in Helsinki, Finland, 13-16 August, 1980.

Editors

H. Turakka

and

E. van der Kleijn



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PREFACE

Clinical Pharmacy has during the seventies assumed, in the European context, a permanent position among pharmacists and other cooperating professionals interested in development of the rational and appropriate use of drugs. The concept of Clinical Pharmacy has, in Europe, as in the country of origin, USA, been the subject of vigorous debate, whether it is a philosophical concept or concrete reality, whether it is a professional orientation or a specialization, whether it should be restricted only to the daily hospital practice or does it have a place in community pharmacy, and whether it is a preserve of the pharmacist or whether other professionals interested in the same topics may also join the club.

Many practitioners, teachers and researchers dealing with the use of drugs by patients will approach their profession with the best intentions without always being aware of their contribution to the improvement of the quality of life. Basic scientists are often divorced from the actual needs of the patient and the manufacturing and dispensing pharmacist will not observe the emotional reward for his work by seeing a cured patient. Social pharmacists by observing statistical trends in drug utilization can create criteria for drug selection which may result in the denial of a particular compound for an individual patient. For such refutations, probability parameters in maintaining health can be established, but these will only be of value if they are made through the collaborative efforts of professionals with wide range of educational, practical and scientific backgrounds.

Observations and documented data may enable the reader to draw conclusions for his own work so that he or she, in turn, will provide data that will improve our existing knowledge.

Because all the factors that control our well-being are mostly beyond the span of one diligent individual who is asked for his professional advice, it is essential to work together in a common well-defined subject. The "critical mass" that will provide a successful outcome of such teamwork can seldom be predicted. It is dependent on a multitude of predictable and unpredictable variables.

This symposium in Helsinki (Finland) brought together more than 200 professionals from 17 countries, mostly from Europe but a few from outside, united by the common subject of Clinical Pharmacy. It was organized for the ninth time by a group which, despite coming mainly from hospitals, has tried

to pay special attention to spreading the philosophy and practice of Clinical Pharmacy in Europe in its broadest sense and different forms.

The collection of papers and posters presented in these proceedings again show Clinical Pharmacy, as a coherent subject and as a more profound understanding is gained, the "critical masses" may be generated. Its influence on the efficiency, economics, safety and efficacy of drug treatment requires continuous attention and that will undoubtedly be the subject of future meetings.

Hannu Turakka, Kuopio

Eppo van der Kleijn, Nijmegen

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The success of even the smallest congress is dependent of the cooperation of individuals. This particular symposium has demanded particular effort from those few people working in this area. From the people to whom thanks are due, we would like to express our deepest gratitude to Miss Eivor Nyman who was the local secretary and did much to create a friendly atmosphere. The efforts of the international secretaries, Mr. Roy J. Jonkers and Mr. Ton Zuidgeest are also acknowledged. Among many other instances the following companies are, particularly, acknowledged for their material and financial support: Farnos Group Ltd., Leiras/Huhtamäki Ltd., Medica Ltd., Orion Ltd., ICI-Pharma Ltd. and Information Centre for Travenol Products.

We especially appreciate that the Minister of Social Affairs and Health in Finland, Mrs. Sinikka Luja-Penttilä kindly offered her time for visiting the symposium.

In the editing of these proceedings, we acknowledge the assistance of Dr. Ewen MacDonald who tried his best to correct the worst grammatical and semantic mistakes.

The editors

SPEECH OF THE MINISTER OF SOCIAL AFFAIRS AND HEALTH DELIVERED AT THE CONFERENCE

SINIKKA LUJA-PENTTILÄ

Ministry of Social Affairs and Health, Helsinki (Finland)

Pharmaceutics impinge upon society and the individual in many ways. The misuse of drugs and the endeavour to make the distinction between abuse and the accepted use of drugs and medicines with an abuse potential have recently received wide public attention. This discussion has been fuelled, this year in Finland, by uncritical medical prescriptions leading to the illicit sale and obvious abuse of medicines.

Criticisms emerging from this discussion have not always paid consideration to the rapid progress made in pharmacological research and the knowledge thus gained. This poses a growing challenge for education in the fields related to pharmacology. Instruction provided at universities seeks to meet this challenge and clinical pharmacology and clinical pharmacy, by investigating this problem area concerned with clinical effects and the use of pharmaceutics, have recently supplemented basic pharmacology in examining the mechanisms of the fundamental effects of drugs. Both disciplines closely co-operate to apply pharmacology to the individual needs of the patient, but remain through their scientific interests and practice independent and separate fields.

The right medicine for the right patient at the right time in the right form of dosage and right doses has been declared the objective of clinical pharmacy. This implies a rational assortment of medicines and the development and control of distribution systems to minimize errors in medical treatment. Clinical pharmacy additionally occupies a key position in continuously regulating evolving medical care.

The conference now beginning is the ninth European symposium on clinical pharmacy. This series of conferences convincingly demonstrates that clinical pharmacy has permanently become an independent branch in the organisation of medical care in Europe.

Finland has also devoted serious attention to the increasingly significant role of clinical pharmacy. Nationwide plans for public health activities and institutions for medical care in 1981-85 require the establishment of hospital pharmacies at all medical centres and at corresponding large institutions for medical care by the year 1985. Providing an assortment of basic drugs and medicines in conjunction with these plans aims to enhance the expert

specialisation of clinical pharmacy and, through this, improve medical care. On the basis of these national plans, clinical pharmacologists will also initially be installed at all University Medical Centres and later at other medical centres. This would create a natural framework for co-operation in clinical research on medicine, hopefully resulting in better and more effective medical care.

May I venture to assume that the negative publicity in our country last spring, which I mentioned earlier, concerning pharmaceuticals will not reoccur due to the increased clinical knowledge of medicines gained by medical staff and patients alike in the past years.

In establishing priorities for improved medical care and standards, the development of education and research in the field must form the groundwork for planning. The scope and arrangement of education in clinical pharmacy are currently under deliberation at the University of Kuopio. The decision to apportion chairs between clinical pharmacy, social pharmacy, clinical pharmacology and clinical toxicology is dependent on the admittedly scarce resources allocated for education. In spite of this, the University of Kuopio apparently already has considerable expertise in these different fields in addition to the spontaneous enthusiasm, and therefore holds all the pre-requisites for high-standard education in clinical pharmacy and for engaging in research in collaboration with University Medical Centres.

On behalf of the Ministry of Social Affairs and Health, I wish the conference the fullest degree of success in its efforts to further the achievements of clinical pharmacy.

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PRINCIPLES OF CLINICAL PHARMACY

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The term "clinical pharmacy" was first used in 1953, but it was not until in the late 1960's that it became widely used among pharmacists¹. In many respects, the appearance of this new concept reflects the difficulties that the pharmacy profession has had in the latter part of this century, and it also reflects the desire the pharmacists have to get involved in new areas where their professional skill will be of benefit for the patients.

DEFINITIONS

According to Webster's Third New International Dictionary of 1976 pharmacy is "the art or practice of preparing, preserving, compounding and dispensing drugs". It is obvious to all pharmacists and probably also to the general public that there is very little left of "preparing, preserving and compounding" in the pharmacy profession. On the other hand, the need for professional advice to patients using drugs has been clear for most pharmacists working in hospitals as well as to those in the outpatient service. This need has influenced the profession profoundly and a new definition of pharmacy has recently been adopted by the American Pharmaceutical Association. This states that pharmacy is a "patient-oriented health service that applies a scientific body of knowledge to improve and promote health through assurances of safety and efficacy in drug use and drug related therapy". The wording of this new definition has no doubt been influenced by "clinical pharmacy".

EVOLUTION OF CLINICAL PHARMACY

A series of studies²⁻⁴ performed in the United States in the 1960's and later followed up in other countries on the occurrence of medication errors in hospitals received considerable attention both among health professionals and in the public press. According to these studies, the average patient was given 6-7 doses of medicine per day, and with an estimated error rate of 6-15%, each patient could run the risk of

being exposed to an average of one medication error per day. The recognition of this medication error problem resulted in two important developments: first it brought nurses, pharmacists and physicians together to discuss ways of preventing the errors and second it initiated a new and safer drug distribution system called "the unit dose system". Pharmacists also began to understand the need to work more closely with other health professionals in the interest of the patient. The unit dose system, that gradually evolved in a number of clinics, became the necessary common ground where pharmacists met with nurses and physicians in a professional cooperation. In this way, pharmacists became motivated to leave the well-protected environment of the pharmacy where the activities were merely restricted to a supply function and instead started to contribute their professional skill to solving drug therapy problems. This principle of bringing the pharmacist and the pharmaceutical service closer to the patient should guide the development of modern hospital pharmacy as well as the development of pharmaceutical service to ambulatory patients.

The principle issue in clinical pharmacy is thus the involvement of pharmacists in the drug therapy of patients and thereby applying their pharmaceutical professional talent. The word "clinical" in clinical pharmacy indicates that it is an activity where pharmaceutical knowledge is applied to the clinical situation, analogous to the terms clinical chemistry and clinical pharmacology.

Clinical pharmacy has so far mostly been exercised in hospitals where a close personal relationship between pharmacists, nurses and physicians could be established. However, most drugs are not used in hospitals. Instead they are taken by the outpatients after a prescription from a physician or obtained as an OTC-drug. In Sweden, approximately 80% of all drugs are used outside the hospital. This leads to the inevitable conclusion that the emphasis of clinical pharmacy should be more directed toward the ambulatory patients.

The clinical pharmacy practised by the hospital pharmacist will by necessity be different from that practised by the community pharmacist but their aims will always be the same: To solve drug therapy problems and to contribute to a safe and appropriate use of drugs for the individual patient.

CLINICAL PHARMACY IN COMMUNITY PHARMACIES

In the following, the principles of clinical pharmacy in relation to outpatients will be presented. Many of the examples are taken from Sweden where the pharmacy system is non-profit and therefore differs regarding the service to the outpatients from the systems of most other western countries. However, the same principles could be used regardless of this difference.

The community pharmacy has responsibilities of drug distribution and other pharmaceutical services for primarily the residents of its community. Some of these responsibilities are shared by other health professionals and the activities of the pharmacists should therefore always be performed in close collaboration with the physicians and nurses who are working in the area. The community pharmacist, however, is the most easily accessible health care worker and the communication with the residents should therefore be uncomplicated.

Service to healthy individuals. To use drugs appropriately when you are ill, you should learn about them when you are healthy and while you are healthy you should also learn about the facilities available at the pharmacy. These are the main reasons for the educational program in which Swedish pharmacies are now involved. The pharmacists have recently started giving lectures and making other presentations to the students in their last school year, to retired people in their associations, to sport clubs etc.

In the schools information on drugs, how they act in the body, how they should be properly used and handled etc is given. This is done in combination with specific information about acne, colds, contraceptives, pain etc. The students are then given plenty of opportunity to discuss their problems.

Elderly people often use medicines. General information about the use of drugs is therefore of interest to them. This may be combined with general health information and therefore the pharmacist often works together with a physician or a nurse on those problems. Printed material (Figure 1) with general information about the use of drugs is also available and are given to the participants as well as to the patients at the the pharmacy free of charge.

