

Letter to the Editors

The Dutch model for clinical pharmacology: collaboration between physician- and pharmacist-clinical pharmacologists

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There are serious concerns about the decline of the specialty of clinical pharmacology and therapeutics in the UK and other Western European countries and the number of specialized physicians in clinical pharmacology and therapeutics [1]. In addition, a heated debate is ongoing whether clinical pharmacology is exclusively a medical discipline or also open to other professionals [2, 3]. There is no disagreement about the pivotal role of clinical pharmacologists in ensuring rational use of drugs, in translating pharmacological concepts from the bench to the clinic, in clinical drug development, or in teaching the discipline to medical students. In our view clinical pharmacology is too important to be left exclusively to physician-clinical pharmacologists, for which there are a number of arguments.

In view of its increasing complexity, rational and tailored drug therapy cannot be implemented in its full width when the discipline is applied only by physicians. The latter are rarely adequately trained in, for example, implementing and validating advanced bioanalytical techniques, population pharmacokinetics and -dynamics, pharmacogenetics, pharmacoepidemiology and translational research, which impedes them from fully covering the wide field of clinical pharmacology. Thus, other specialists, especially pharmacists, should step in to fill the gap left by physicians to cover the outlined areas of clinical pharmacology. Expert advice on rational pharmacotherapy is the core task of the new pharmacist as proposed by the 3rd World Health Organization Consultative Group [4] and is rapidly being established in a growing number of European countries.

Therefore, allowing pharmacists to be trained as clinical pharmacologists is a logic and natural development of the discipline. In the Dutch approach, internists and pharmacists, and other highly selected individuals, can be trained to become clinical pharmacologists. This does not mean that in the Netherlands nonphysician clinical pharmacologists are allowed to prescribe drugs. This fear of many physicians is pointless. Pharmacists support pharmacotherapy in many ways that could best be described as 'consultant'.

In the Dutch model for clinical pharmacology physicians and pharmacists, trained and board certified in clinical pharmacology, collaborate in clinical drug research and in ensuring rational drug therapy in patients. They are members of the same Society for Clinical Pharmacology & Biopharmacy. The training programme takes one full year and encompasses items such as rational pharmacotherapy, pharmacokinetics and -dynamics, therapeutic drug monitoring, pharmacogenomics and genotyping, individualized drug therapy, drug toxicology, teaching, clinical pharmacological research, and training in Good Clinical Practice. This training is to be followed after qualification as a pharmacist, during which 6 years of academic training many of these methods have already been taught. In the Netherlands the clinical pharmacologist (physician or pharmacist) has an established role, as by law each Institutional Review Board has at least one member with board-certified training in clinical pharmacology.

Clinical pharmacology in the Netherlands is a specialty that receives rapidly growing interest from healthcare specialists. The number of board-certified and active clinical pharmacologists is steadily increasing from about 90 in

1997 to 160 in 2007, with 32 currently in training. The Dutch Society has in total 360 members. This contradicts the concerns in the UK [1]. The mission of the specialty is to improve healthcare by implementing rational drug therapy and by conducting state of the art clinical pharmacological research. The discipline of clinical pharmacology is being applied in daily healthcare practice with tremendous enthusiasm by certified internists, selected other medical specialists and hospital and community pharmacists. Without doubt internal medicine and clinical pharmacy have been brought together by their shared interest in clinical pharmacology, a field where experts not only exchange knowledge and interests, but also practice pharmacotherapy to the benefit of the individual patient. In this way, the Netherlands has developed a unique model for clinical pharmacology.

There is much reason to believe that, at least in the Netherlands, there is an increasing interest in the specialty of clinical pharmacology. It is our continued responsibility to show the benefits of our area of expertise to patients, healthcare and academic decision makers and to society as a whole. The Dutch Society for Clinical Pharmacology & Biopharmacy strongly believes that the collaboration between physician- and pharmacist-clinical pharmacologists serves this objective and we advocate this model as a template to the rest of the world.

REFERENCES

- 1 Maxwell SR, Webb DJ. Clinical pharmacology – too young to die? *Lancet* 2006; 367: 799–800.
- 2 Sjöqvist F. Clinical pharmacology and clinical pharmacy – collaborating or competing disciplines? *Basic Clin Pharmacol Toxicol* 2007; 101 (Suppl. 1): 18.
- 3 Schellens JHM. Clinical pharmacology and clinical pharmacy: collaborating, but not competing disciplines. *Basic Clin Pharmacol Toxicol* 2007; 101 (Suppl. 1): 17–8.
- 4 The Role of the Pharmacist in the Health Care System. Preparing the future pharmacist: curricular development. Report of a third WHO Consultative Group on the role of the pharmacist. Vancouver, Canada, 27–29 August 1997. Available at http://whqlibdoc.who.int/hq/1997/WHO_PHARM_97_599.pdf (last accessed: 20 July 2007).

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