

Lloyd E. Davis Address

The Crisis Facing Clinical Pharmacology Programs at Veterinary Medical Colleges

Thomas E. Powers, D.V.M., M.Sc., Ph.D.

*Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine,
The Ohio State University, 1900 Coffey Road, Columbus, Ohio 43210-1092, U.S.A.*

I wish to thank you - the Academy - for this great honor that you have bestowed upon me this evening. It is especially important to me since I know how many other people you had to consider who I believe are more qualified than myself. I will certainly cherish this award knowing it is the first Lloyd D. Davis award to be presented but more important, because of the respect I hold for Lloyd Davis.

My paper tonight will be on problems and opportunities facing veterinary clinical pharmacology at colleges of veterinary medicine and my personal view on a possible solution.

On December 31, 1988, I retired from The Ohio State University after having been there for 41 years (5 years as a student and 36 years as a faculty member). During the time that I was a veterinary student and the early time that I was a faculty member, I recall that the 3-4 faculty members of the Department of Veterinary Physiology and Pharmacology had case responsibility in all small animal medicine wards, as well as, the responsibility for teaching all the physiology, pharmacology, and toxicology, plus providing consulting service to the other parts of the hospital. These early experiences have had a great influence on my career and my philosophy regarding the importance of experts in the basic sciences actually participating in the veterinary hospital and the values of the veterinary hospital as a laboratory for both teaching and research in pharmacology, physiology and toxicology. Throughout my career, I have encouraged my graduate students to be active participants in the ward rounds of the hospital. This was the informal beginning of what was to become our training program in veterinary clinical pharmacology at Ohio State.

Harry Gold is credited as the founding father

of human clinical pharmacology. He performed the first placebo controlled scientific studies in man on drug effects with his pioneering studies on digitalis that were published in 1929 (Gold & DeGraff, 1929). This was the same year that Alexander Fleming reported on the activity of Penicillin-G in in vitro studies. Many people of the time considered experiments with drugs in man to be ethically and scientifically improper. Gold's outstanding students included Walter Modell and Louis Lasagna.

What do I mean by veterinary clinical pharmacology? Veterinary clinical pharmacology is that portion of veterinary medicine that deals with the efficacy and safety of chemical entities used in the therapy and alleviation of disease and disease signs of animal species. It is a discipline that transcends basic and clinical science and is based on pharmacology, physiology, parasitology and microbiology. The late Dr. C. R. Smith, Distinguished Fellow of the Academy, jokingly defined a pharmacologist as a physiologist who knows the dose. Antimicrobial, antiparasitic and anti-inflammatory drugs are the most widely used drugs in veterinary medicine. The application of clinical pharmacology lies in therapeutics and its orientation and application is to the whole animal in the clinical setting in contrast to cells or individual organs as in experimental biology.

We must differentiate between the discipline of clinical pharmacology and the profession of clinical pharmacology (Reidenberg, 1988). All AAVPT members, with their varying backgrounds and skills are able to contribute to the development and advancement of the discipline of veterinary clinical pharmacology. On the other hand, only a few will devote their professional life to the practice of the profession of veterinary clinical pharmacology. These veterinarians must be identified as having the expertise and ability to practice veterinary clinical

pharmacology.

According to the newly formed American College of Veterinary Clinical Pharmacology's Constitution, these will include:

- be a graduate of an approved College or School of Veterinary Medicine accredited or approved by AVMA or possess a certificate of accreditation in Veterinary Medicine from the Educational Commission for Foreign Veterinary Graduates (ECFVG), or be legally qualified to practice veterinary medicine in some state, province or territory or possession of the U.S., Canada or other country.
- be of unquestionable moral character with impeccable professional behavior.
- they must successfully pass a Diplomate Certification Examination given by the College.
- they must be accepted for membership in the College by a majority vote of the Board.

Article VI, Section 3 of the College Bylaws states::

- A standard residency is two years or more of intensive training, primarily in veterinary clinical pharmacology under the supervision of a diplomate of the American College of Veterinary Clinical Pharmacology or diplomates of other American Colleges of a clinical discipline until 1995.
- Alternate methods of qualifying for examination will be considered. These may include graduate study, academic course work, and experience obtained through the practice of veterinary clinical pharmacology. The program must include at least three years of training of which two years must be in the clinical practice of veterinary pharmacology. I will address these issues further in my paper tomorrow on Board Certification of Veterinary Clinical Pharmacologists.

First, we must recognize that few, if any, veterinary colleges have been or are teaching clinical pharmacology adequately (Davis & Powers, 1979; Jenkins, 1988; Panel Report 1980; Short, 1987) I believe, in many cases, that this is because we do not have a properly structured academic clinical pharmacology division, department, and/or hospital section.

A structured academic clinical pharmacology division or department is definitely needed in place of the less structured small study units. These small study units are not stable enough since their stability depends almost solely upon one or two key faculty members. When they depart the unit through retirement, transferring, etc., the unit is usually lost or lies dormant for several years.

The fact that the study units, as they have existed in medicine and veterinary medicine, are not adequately stable was shown by what happened to the clinical pharmacology study unit at The Ohio State University. This was and had been a very viable, active, and productive unit. In less than one year after my retirement, the one remaining clinical pharmacologist left the college for another position and has never been replaced. Following the departure of the last clinical pharmacologist, the one remaining graduate student, who was working toward a Ph.D. in clinical pharmacology dropped out of school. Today the unit does not exist, funds formerly used for it have been transferred to the administration which is now recruiting two new assistant deans to add to the one assistant dean and one associate dean presently in that office.

Centers of excellence in clinical pharmacology are not a top priority item at this time. Instead, each college needs a larger self sustaining unit not only to provide stability but to insure proper patient care, clinical teaching, and research. These larger units would enable better acquisition of new knowledge in clinical pharmacology and the dissemination of the state of the art, not only to its students, but to the veterinary profession and the public. This in turn would provide (1) maximally effective drug therapy, (2) reduced incidence of adverse drug reactions, and (3) drug therapy at the lowest cost compatible with maximum efficacy and safety. Certainly, some of these units would ultimately develop into centers of excellence.

More formal courses in clinical pharmacology need to be added immediately to the required curriculum for the veterinary degree. Clinical pharmacologists are direly needed to actively participate in clinical rounds with professional students, residents, and faculty. They must also be available as consultants to the hospital faculty and staff as well as the profession at large. In addition, the clinical pharmacology unit should have its own analytical laboratory as well as its own hospital ward(s).

It is almost impossible for the younger

faculty members to make adequate commitments to clinical and teaching responsibilities since these duties are not usually given any value or credit toward promotion and tenure by administrators. The administrators believe these duties will erode some of their research activities by keeping them out of their research laboratories. In my experience, these attitudes by administrators are more financially motivated based upon number of federally funded research dollars, specifically NIH and NSF, than on having any basis in true scholarly evaluation based upon research activity. Actually, clinical pharmacologists are usually successful in obtaining research monies from industry, FDA, USDA, etc.

The need for trained pharmacologists is evident in many areas of veterinary medicine. This has been well emphasized by many other papers at this symposium. Trained clinical pharmacologists are needed in the regulatory agencies, pharmaceutical industries, as well as in academia for the development of new drugs and the proper clinical usage of existing drugs. Though diagnostic skills have been adequately emphasized in our veterinary curricula, there still exist the urgent need to correct deficiencies in patient care as related to rational therapeutics.

It is proposed that divisions or departments of clinical pharmacology be established at veterinary colleges to correct these deficiencies. The establishment of chairs in clinical pharmacology would also assist in solving these problems. There must be a positive commitment by the college administration to the support of new clinical

pharmacology programs. It would seem that the recent establishment of the American College of Veterinary Clinical Pharmacology as an official certifying board approved by the AVMA should mandate the responsibilities to the colleges to give this needed support.

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