

How Academia Participates with Animal Health Industries - Post-approval Marketing

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The word "marketing" has different meanings to different people when used in the context of "approved new animal drugs." Veterinarians in academia can directly or indirectly affect marketing of a product. Veterinarians who are called upon to speak professionally and specifically about a product are considered by regulatory agencies to be representatives of the sponsoring company, and the professional's comments are construed to be part of promotional or marketing activities of the company. As a consequence of being a representative of the sponsor, academic individuals must confine their comments to those supported by approved labelling. To do otherwise may expose them to regulatory action.

Independent of the sponsoring company, veterinarians may indirectly affect marketing of the product, and that effect may be detrimental or beneficial to the sponsoring company. A common and professional desire of both parties is that the product be used rationally according to sound medical reasoning. To do otherwise casts a degrading shadow on all parties involved. For that reason, facts - not emotions, perceptions, testimonials, or empiricism - should be used to support claims of safety and efficacy. Because of the diverse nature of veterinary clientele and patients, many of those facts are not discovered until after a New Animal Drug Application has been approved. Facts that arise are not always complimentary to the product or sponsor.

The most important responsibility of veterinarians in academic positions is to

educate or train students, colleagues, and the general public. Presentation of facts, demonstration and application by example, discussion of alternative therapies, and preparation of personnel for future contributory roles are some of their key duties. Education and training should not be a process of biotechnologic cloning, whereby instructors create in their students clones of themselves. Instead, that education and training should be directed toward development of informed, functional, wise members of our profession and of society. Diversity is, therefore, to be expected and is perhaps the greatest attribute of academic contribution to post-approval marketing.

Training of professional students rightfully constitutes the major objective for professional academe. Training is also provided for colleagues to achieve qualifications as specialists, to prepare for careers in education, in industry, in research, or in regulatory agencies, or to improve patient-care and/or public service. Individuals who matriculate from these programs are the investigators and practitioners of the future. It is a mistake to think that individuals in academic positions can provide every possible element of training needed for every individual in training programs. Skills and abilities are polished and perfected through activities in positions filled. Graduates contribute to the collective professional knowledge through written word, professional presentations, and/or postgraduate training programs.

It is my opinion that basic knowledge and skills necessary for broad application within the discipline of veterinary pharmacology should be taught in the academic setting. I also believe that research requirements of graduate training could be better served by collaborative efforts among personnel in academia and industry, to the end that the research might be performed "on site" at industrial facilities. An appreciation could be gained, by the trainee, for truly cutting edge developments, state-of-the-art equipment, good laboratory practices, professional confidentiality, integrity of investigation, timely and efficient completion of studies, the drug approval process, and of the industrial perspective of veterinary pharmaceutical industry. It is also a mistake to think that veterinarians in academia can compete with the technology and support available in the industrial sector while providing training.

Throughout training, it is of paramount importance to guard against the generation, propagation, and dissemination of false or misleading information. Facts should be the basis for formulation of medical opinions and decisions. We should no longer allow emotion and perceptions to drive the drug approval process, the discovery and development process, or the clinical use of medication. Indeed, the Federal Food Drug and Cosmetic Act, as amended, retains the stipulation that decisions by the Secretary of Health and Human Services, regarding approval of new animal drug applications, be based on "substantial evidence"

...."the term "substantial evidence" means evidence consisting of adequate and well-controlled investigations, including field investigation, by experts qualified by scientific training and experience to evaluate the effectiveness of the drug involved, on the basis of which it could fairly and reasonably be concluded by such experts that the drug will have the effect it purports or is represented to have under the conditions of use prescribed, recommended, or suggested in the labeling or proposed labeling thereof."

Professionally trained veterinary clinical pharmacologists are those experts and are capable of performing studies that will provide that scientific evidence.

Yet another arena for education about rational drug use is the judicial system. Unfortunately, we live in a litigious society. Before justice can be served, facts must be evaluated to arrive at truth. A common cliché heard today is "perception is reality." It seems that facts have been devalued so drastically that they have reached the status of "unimportant." This travesty of professionalism can only be corrected if veterinary pharmacologists base their opinions on facts and not on perceptions. As in clinical patient-care where the clinician is expected to be objective, the veterinarian as an expert witness is expected to be objective and factual when rendering a professional assessment or opinion. Perception is not always reality.

After a New Animal Drug Application is approved and the drug is marketed, the number of animals that receive that drug is considerably greater than received it during pre-approval studies. Post-approval surveillance of the drug is important to assure that predictions of safety and of efficacy, based on data from pre-approval studies, are accurate (Johnson & Tanner, 1993). The veterinary clinical pharmacologist in academia will probably be involved more with post-approval evaluations than with pre-approval evaluations of drugs. Greater numbers of animals exposed to the drug increases chances of detecting adversities of low probability. During the immediate post-approval time, the drug is the most vulnerable to criticism and misuse. This "new drug syndrome" is not all-together bad because the sponsoring company learns more about its product, and consumers of the product learn more about where and how the product fits their health-care requirements.

Any time that a patient is "treated," an experiment is performed. If approved drugs or devices are employed, the hypothesis of the experiment is that the patient will respond as did all animals

evaluated during pre-approval studies. Clinical medicine encompasses a diverse group of "experimental subjects," and veterinary teaching hospitals should be viewed as "training" laboratories. Much valuable information has been generated from these sources and, with discernment, professional training, and willingness to participate, many sectors involved with animal drugs could benefit from clinical patient care. The veterinary clinical pharmacologist's personal experience with the drug contributes to the sponsor's database, but colleagues and clients may be less inhibited about discussing with an academic veterinarian their own experiences using a drug than they would with an official representative of the sponsor or of the regulatory agencies. Because of this pool of information, the academic veterinarian can be a conduit for exchange of information among the marketplace, sponsor, and regulatory agencies.

Academic veterinarians can help the sponsor identify "niche" markets. "Niche" markets are usually small, consist of limited clientele and patients, and have limited financial reconciliation. For these reasons, sponsors have little incentive to pursue development of products to meet these markets. Some of the diseases or conditions targeted by these markets are zoonotic; some are geographically or demographically limited; some are not lethal but are a nuisance. Nonetheless, those conditions remain a health "concern" for the patient/client, and may pose a therapeutic dilemma for the attending veterinarian. Specific examples of "niche markets" include but are not limited to the following: thyroid supplementation for animals with hypothyroidism, insulin for animals with insulin-dependent diabetes mellitus, phenobarbital to treat canine epilepsy, epinephrine for treatment of anaphylaxis, hormonal alteration for enhanced reproductive performance, concurrent administration of medications (e.g. antimicrobial drugs plus polyionic fluids) for enhanced clinical response of patients with septic shock, concurrent administration of drugs for safe and

effective anesthetic protocols for animal patients in a variety of risk categories, antidotes for toxicities of animal patients, treatments for specifically tenacious conditions for which no specific treatment is available (e.g. pseudomonal infections).

Veterinarians have always been stereotypically enterprising by nature and have met most of these therapeutic challenges by applying their knowledge - sometimes empirically, sometimes scientifically - of drugs and disease. Markets for drugs have expanded or become more refined by exploratory or pilot studies with drugs used to treat conditions that were not necessarily of major concern to the sponsor during development of the drug.

Information about a drug obtained with one species of animal can be extrapolated to serve as a basis for use of the drug in an extra-label manner (Brumbaugh, 1993). For example, diseases in different species that are caused by similar organisms or that are of similar pathophysiology may be treated with the same drugs. Drugs that are "not safe" to use in one species may be useful in another species. The species or the disease may be of minor economic value in the overall national or global scope of the animal kingdom (minor species), or to the pharmaceutical industry. Even so veterinarians are not dismissed from their professional role. That role often becomes a thankless one of an intermediary among clients, patients, regulatory agencies, the pharmaceutical industry, and peripheral societal interests.

Academic veterinarians should always be expected to train others with knowledge and wisdom. To do so will directly or indirectly affect marketing of animal drugs. In addition, academic veterinarians may serve as pioneers exploring new uses for old products, evaluation of "cost:benefit" and other economic variables, risk:benefit assessment, uses of products in "minor species" (including aquatic animals, caged-birds, wildlife, or endangered species), extra-label use of drugs, and "niche" markets. These relatively small but

important conditions require veterinary medical attention. They are not, however, of sufficient magnitude to enlist sponsorship by the veterinary pharmaceutical industry; but, rational and scientifically sound methods of evaluating drugs used to treat them should be employed, and support for evaluating them should be provided. Where should that support come from? A simple answer to this question probably doesn't exist. Some common obstacles to compiling important data are insufficient collaboration among veterinarians, inadequate finances, regulatory restrictions, and lack of availability of appropriate formulations of the drug to be evaluated. To ignore these obstacles does nothing to promote professional progress. A concerted effort by all interested professionals is needed to 1) rationally utilize the best factual information that is available; 2) generate better data where necessary; 3) protect proprietary information; 4) protect public health; and 5) to promote professional and responsible health care for animals.

References

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