WHAT IS ALL THIS PHARMACOVIGILANCE STUFF ABOUT?

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There is a very common misconception that drugs should be utterly safe, which reappears at each drug scandal. Journalists and politicians seem outraged by the sudden discovery that a drug may cause harm or injuries, the ones to sell copy, presumably, the other to show they a concerned by the public's interest (and votes). Maybe they should be reminded that there is no such thing as a safe drug. All drugs are dangerous. However, some might also be useful. The whole difficulty is making drugs or using drugs in the least injurious manner, and with the greatest results. To this end, a knowledge or understanding of the basic principles of pharmacology, such as dose-response for instance and the concept of receptor or enzyme saturation and the sigmoid curve, may not be completely useless. Prescribers might avoid increasing doses endlessly, or adding drugs that inhibit the same enzyme until there is none left active, then continuing to add more drugs until something bad happens, and complaining about what a scandal that such dangerous drugs are put on the market. People might realize that type A reactions (pharmacologically determined as opposed to immunoallergic) are dose-dependent, and that low doses might not be as dangerous as high doses of the same drug (think Vioxx?)

Many other things are dangerous, such as automobiles or hammers. People known that and use them carefully (mostly). People would not think of suing the hammer manufacturer because they hit their thumb. Seat belts are used willingly to improve safety (and because you get fined if you don't). At the beginning of each plane flight there is a little propitiary dance to avoid the wrath of the gods or others that might make the plane fall out of the sky. No-one complains that it is a scandal that planes aren't made safer and crash-free (actually they are the safest way to travel per mile).
Drugs are a different matter: because patients, doctors and the public have been sold the idea that they should be and therefore are totally safe, physicians sometimes feel free to misprescribe, and patients to misuse by default or excess. And if anything goes wrong, it is because the drug is dangerous, the manufacturer evil, regulators incompetent and experts bought by industry.

Of course over the years Pharmacovigilance has improved, the premarketing detection of safety issues has considerably improved methodologically, drugs are being better designed to avoid known problems. Drugs used to be "fire and forget": once the drug is on the market, who cares what happens or how it's used? We have all the data from the clinical trials, and the authorities have approved the drug as safe if used as directed. Risk management plans (RMP) are a major milestone in the path to greater safety, or rather understanding how drugs are used and for what consequences. RMP have had the immense merit of making sure the manufacturers actually follow their drugs after marketing, and retain the responsibility of how they are used. The latest European regulations reinforce this, and add measures of quality for industry and regulators alike.

However these regulations mainly concern what can be regulated, which is the interactions between industry and regulators. This might indeed improve the identification and management of new problems. However, the immense majority of adverse drug reactions are well known pharmacological effects of older drugs, and that can only be managed at the patient-prescriber level, which cannot be directly addressed by regulations. The next great

challenge is to reduce these common adverse reactions, which means better prescribing by prescriber, and better use by users. How can this be achieved?

First, by increasing the training of future doctors in clinical pharmacology and proper prescribing. Many studies have found a decrease in the hours spent teaching pharmacology to medical students and in the number of teachers. In fact in some countries nurses and physiotherapy students get many more hours of pharmacology and drugs than future prescribers. This is a very complex issue, made worse by the progressive general decrease in the number of clinical pharmacologists. Hospital directors do not understand what a clinical pharmacologist does, and doesn't see the effects on the balance sheet. Many deans do not understand their value, and clinical pharmacology is less prestigious (with fewer papers in Nature) than genetics or cell biology. In a time of immediate returns on investment, the investment in teaching students how to prescribe to avoid problems ten or twenty years later is difficult to justify.

Second, by training patients on the proper use of medicines. Stop trying to tell them drugs are safe. They aren't. They cannot be. But at least they may be safer and more effective than alternatives. The only car that is not dangerous is the one that is stopped. But it's not very useful either. Totally safe drugs can only be totally ineffective. This needs to be repeated regularly. Maybe train journalists too.

The development of the relations and regulations between regulators and industry is being commented upon and discussed by many. The development of a prescriber and patient culture of safer use of drugs is not.

Maybe that should be the next challenge for ISOP.