ATCVET - A CLASSIFICATION SYSTEM FOR VETERINARY MEDICINAL PRODUCTS BASED ON THE HUMAN CLASSIFICATION SYSTEM ATC

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BACKGROUND

The Nordic Council on Medicines was established in 1975 to enhance collaboration between the five Nordic countries, Denmark, Finland, Iceland, Norway and Sweden. One of its first tasks was to develop joint Nordic drug statistics publications, later to be known as the Nordic Statistics on Medicines.

In order to make drug statistics from five countries comparable, it was of course necessary to agree on a common classification system. At that time a system the Anatomical Therapeutic Chemical classification system (ATC) had been used in Norway for some years, developed from an industry system by the Norwegian Medicinal Depot. The Nordic Council on Medicines decided to use the ATC system and over the years it was further developed by the Nordic Council on Medicines and the Norwegian Medicinal Depot until it was made a responsibility of the WHO Collaborating Centre for Drug Statistics Methodology (WHO-Oslo) in Oslo, Norway. As a matter of fact, the drug statistic efforts by the Nordic Council on Medicines has soon resulted in seven publications for three years periods under the joint title Nordic Statistics on Medicines. The first publication covers the years 1975 - 1977 and within the next few weeks the seventh publication will be issued, covering the years 1993 - 1995 (NLN Publ. No 43).

ATC classification system for human medicines

The basic principles of the ATC system may be illustrated by an example, ampicillin. All substances are classified in five levels.

The first level of the ATC system is the anatomical main group:
A   Alimentary tract and metabolism
B   Blood and blood forming organs
C   Cardiovascular system
D   Dermatologicals
G   Genito urinary system and sex hormones
H   Systemic hormonal preparations, excl. sex hormones
J   General antiinfectives for systemic use
L   Antineoplastic and immunomodulating agents
M   Musculo-skeletal system
N   Nervous system
P   Antiparasitic products, insecticides and repellents
R   Respiratory system
S   Sensory organs
V   Various

For ampicillin the most appropriate first level classification is J - General antiinfectives for systemic use. The second level is the therapeutic main group:
J01   Antibacterials for systemic use
J02   Antimycotics for systemic use
J04   Antimycobacterials
J05   Antivirals for systemic use

For ampicillin the most appropriate second level classification is J01 - Antibacterials for system use. The third level is the therapeutic subgroup
J01A   Tetracyclines
J01B   Amphenicols
J01C   Beta-lactam antibacterials, penicillins
J01D   Other beta-lactam antibacterials
J01E   Sulfonamides and trimethoprim
J01F   Macrolides and lincosamides
J01G   Aminoglycoside antibacterials
J01M   Quinolone antibacterials
J01R   Combination of antibacterials
J01X   Other antibacterials

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For ampicillin the most appropriate third level classification is J01C - Beta-lactam antibacterials, penicillins. The fourth level is the chemical/therapeutic subgroup:

J01C A   Penicillins with extended spectrum
J01C E   Beta-lactamase sensitive penicillins
J01C F   Beta-lactamase resistant penicillins
J01C G   Beta-lactamase inhibitors
J01C R   Combination of penicillins, incl. beta-lactamase inhibitors

For ampicillin the most appropriate fourth level classification is J01C A - Penicillins with extended spectrum.

Finally, the fifth level is the subgroup for chemical substance. According to the ATC Index the ATC code for ampicillin is J01C A01. Thus, in the ATC classification system all plain ampicillin products for systemic use should be classified using the code J01C A01. Each classified substance has its own number. New substances will receive the next free number. Old numbers no longer in use are not given to new products, to avoid any confusion. As an example, the full fifth level for J01C A contains the following substances/classifications:

J01C A01 Ampicillin
J01C A02 Pivampicillin
J01C A03 Carbenicillin
J01C A04 Amoxicillin
J01C A05 Carindacillin
J01C A06 Bacampicillin
J01C A07 Epicillin
J01C A08 Pivmecillinam
J01C A09 Azlocillin
J01C A10 Mezlocillin

J01C A11 Mecillinam
J01C A12 Piperacillin
J01C A13 Ticarcillin
J01C A14 Metampicillin
J01C A15 Talampicillin
J01C A16 Sulbenicillin
J01C A17 Temocillin
J01C A18 Hetacillin
J01C A20 Combinations of penicillins with extended spectrum
J01C A51 Ampicillin, combinations

DEVELOPING A CLASSIFICATION SYSTEM FOR VETERINARY MEDICINES

In May 1988 the Board of the Nordic Council on Medicines decided to develop a classification system for veterinary medicinal products. A working party was entrusted with the following task: 'To develop a classification system for veterinary medicines based on the same main principles as the ATC system for human medicines, i.e. a drug used in both human and veterinary medicines should be classified in a way that makes it easy to recognise that it contains the same active substance." Furthermore, the system should facilitate the exchange of pharmacovigilance data, improve the comparability of sales statistics, provide a tool for identifying medicines and help veterinary surgeons and pharmacists in their everyday work.

The working party soon reached an agreement on some basic principles for a veterinary classification system. The basic idea was that products used both in human and veterinary medicines should have a classification only differentiated by a letter Q in front of the existing ATC codes. As the system closely builds on the ATC classification system it was named ATCvet.

ATCvet classification system for veterinary medicines

Of course, there are products used only in veterinary medicines and for these products no ATC classification exists. Consequently, new classifications have to be developed exclusive for veterinary products. As this is not in the interest of the WHO Collaborating Centre for Drug Statistics Methodology the Nordic Council on Medicines asked the WHO-Oslo to put aside certain codes for the veterinary system. The WHO-Oslo kindly agreed to this. To summarise the agreement the following letters and figures have been reserved for ATCvet:

First level   letter Q
Second level   figures 50 - 69
Third and fourth level   letters Q, V, W, Y and Z
Fifth level   figures 90 - 99

To make the principles of the ATCvet classification system perfectly clear, I will return to the example given on the ATC classification system, plain ampicillin for systemic use. The different levels of the full classification is illustrated below.

QJ General antiinfectives for systemic use
QJ01   Antibacterials for system use
QJ01CBeta-lactam antibacterials, penicillins
QJ01C A   Penicillins with extended spectrum
QJ01C A01   Ampicillin

Thus, in the ATCvet classification system all plain ampicillin products for systemic use should be classified using the code QJ01C A01. As can be seen from the example, a substance used in a similar way in both human and veterinary medicine has an identical classification in both systems except for the letter Q for veterinary medicines that indicates that it is an ATCvet code.

Guidance for ATCvet classification

The ATCvet working party of the Nordic Council on Medicines has issued guidance for users of the ATCvet system. This includes Guidelines on ATCvet classification, so far revised once, an ATCvet Index with all ATCvet

classifications listed in alphabetical and ATCvet code order, an Annual list of alterations sent out free to all users of the system, and an Application form for applications for new or altered ATCvet classifications.

USE OF THE ATCVET CLASSIFICATION SYSTEM

In developing the ATCvet system it was expected to be used in veterinary pharmacovigilance, in sales statistics, in scientific journals and as a tool for veterinary surgeons and pharmacists in their everyday work. However, in the Nordic countries the ATCvet classifications system is used not only according to the original ideas. The ATCvet classification system is also used in drug catalogues, as an administrative tool by the drug regulatory authorities and for linking veterinary and human sales statistics.

An interesting idea more and more widely accepted is that the development of resistance to a certain antibiotic depends on the total exposure to that antibiotic, both the use in human and veterinary medicines. I have chosen an example from Norway and the use of oxytetracycline.

HUMAN

J01A A	Tetracyclines	
J01A A02	Doxycycline	517 kg
J01A A04	Lymecycline	245 kg
J01A A06	Oxytetracycline	690 kg
J01A A07	Tetracycline	1224 kg

VETERINARY

		Farming	Fishfarming
QJ01A A	Tetracyclines		
QJ01A A06	Oxytetracycline	267 kg	583 kg
QJ51A	Tetracyclines for intramammary use		
QJ51A A06	Oxytetracycline	18 kg	

As can be seen from this figures, the use of oxytetracycline in human medicine was 690 kg in 1993. However, if the veterinary use is put together is exceeds the human use, 868 kg. If the veterinary use is ignored this may make it more difficult to understand the evolution of resistance patterns.

This is a good example for illustration of the advantages of the ATCvet classification system. Please note firstly that the classification for oxytetracycline in the human and the veterinary system is identical except for the letter Q. Furthermore, oxytetracycline for intramammary use is classified in a special ATCvet-group, QJ51 - Antibacterials for intramammary use, but the third, fourth and fifth level classification are identical. This is of course intentional, to make it easier to extract data for products containing the same active substance but classified in different anatomical groups.

ATCVET - FUTURE ASPECTS

The basic tool for the ATCvet developments is the Guidelines for ATCvet. The first edition was developed solely by the ATCvet working party and comprised, besides guidelines, all veterinary products available in the Nordic countries classified according to the ATCvet system. In the preparation of the second edition of the guidelines, CVMP and OIE were invited as observers and in this edition many veterinary medicines not available in the Nordic countries were also classified, in response to an increased international interest and use. Later, known ATCvet users have also been invited to the working party as observers. During 1998, a third edition of the 'Guidelines on ATCvet classification' will be prepared and in the beginning of 1999 the new guidelines will be released.

Non-Nordic use of the ATCvet classification system

For many of you the ATCvet system already well known. For others it may be interesting to learn that the ATCvet system is presently used by several European health authorities as an administrative tool. Furthermore, the Commission and the European Agency for the Evaluation of Medicinal Products (EMEA) are to an increasing extent using the system, as well as the human system, ATC.

NLN Secretariat goals for the ATCvet classification system

The Nordic Council on Medicines' have set internal goals for the maintenance of the ATCvet classification system. The most important are that the processing time for classification of new veterinary medicinal products is set to a maximum of two weeks, that new users should be given sufficient assistance to get started, that all known plain veterinary substances should be classified, regardless where in the world they are used, and finally that the Nordic Council on Medicines should work for a further international acceptance of the ATCvet system.

0To make it possible for the Nordic Council on Medicines to meet these goals, applications should be made on the special application form provided by the Nordic Council on Medicines' Secretariat and preferably be accompanied by the 'Summary of Products Characteristics'.

Any comments on present ATCvet classifications and suggestions for alterations are much appreciated and should be addressed to the Nordic Council on Medicines. Of course, more general comments and suggestions for improvements are welcomed in any format.