

Prescrire's contribution to the WHO consultation on Proposed INN: List 97 (October 2007)

Prescrire is an independent drug bulletin for healthcare professionals. It is totally funded by its subscribers and is published by *Association Mieux Prescrire*, a not-for-profit organisation dedicated to improving healthcare and serving patients' interests.

Together with other members of the Medicines in Europe Forum and the International Society of Drug Bulletins (ISDB), *Association Mieux Prescrire* (AMP) has long been promoting the systematic use, by healthcare professionals and patients, of International Nonproprietary Names (INNs), which are clearer and therefore safer (1-4).

Making INN safer. The basic principles underlying the selection of individual INNs are the same that apply to the prevention of medication errors, namely standardization, differentiation, redundancy, and built-in logical controls. INNs make pharmaceutical substances easier to identify and are less frequently confused than trade names (5).

However, even with the INN system there is a residual risk of confusion, partly owing to the sheer number of INNs now in circulation. A report from the Council of Europe, which recommends the use of INN, calls for active participation in public consultations on proposed INNs, within a four-month period of the date of publication, in order to review proposed INNs from the perspective of in-use safety (6). The *Prescrire* editorial team has decided to participate in this consultation, and has thus examined the List 97 of Proposed INN published on 25 June 2007 (7).

Critical assessment of proposed INNs. We based our analysis of the List 97 of Proposed INNs on the 2006 list of common stems in the Summary List 12 CD-ROM, and on a database of drugs marketed in France which provides both trade names and corresponding INNs (8,9). We used a two-step Delphi method. First, *Prescrire* editors compiled a list of potentially litigious proposed INNs, along with the relevant reasons. For each of the 29 proposed INNs selected for further scrutiny in this first step, the editors assessed the risk of confusion and/or misunderstanding, along with the potential clinical consequences of such errors. Finally, they decided whether a simple comment or a formal objection was more appropriate for each litigious INN, and listed their arguments.

The proposed INNs on List 97 which, in our opinion, need to be reconsidered, are given below.

Formal objections

The *Prescrire* editorial team formally objects to the use of the proposed INNs tarenflurbil, terameprocol and pexacerfont.

Tarenflurbil: not acceptable. Tarenflurbil has the same molecular formula ($C_{15}H_{13}FO_2$) as fluprofen, flurbiprofen and esflurbiprofen. The proposed INN does not correspond to the formula or clearly reflect the kinship between these four drug substances. In addition, there is a risk of confusion with another pharmacological class.

And this proposed INN makes it more difficult to identify the risks of nonsteroidal antiinflammatory drugs (NSAIDs) during pregnancy, or to detect interactions with other NSAIDs that are widely used over the counter (OTC), particularly ibuprofen.

The *Prescrire* editorial team sees no basis, other than commercial, for changing the name r-flurbiprofen, which is unambiguous and should be re-adopted.

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Terameprocol: danger. Terameprocol, an anticancer drug, carries a risk of confusion with β -adrenoreceptor antagonists, as the segment "-ocol" (which is not a suffix) might be confused with the suffix -olol. We consider that the risk of confusion in this case is critical, both in terms of frequency and potential gravity. The high risk related to the toxicity of this anticancer drug therefore warrants a formal objection.

Where is the common stem in pexacerfont? Pexacerfont is a new INN, but it is difficult to identify the new common stem. This lack of a clearly identifiable stem makes it difficult to understand the proposed INN. In addition, this proposed INN would be unacceptable if it disguised a pharmaceutical substance belonging to a known group. The *Prescrire* editorial team recommends that the WHO INN Programme should reserve new common stems for pharmaceutical substances that do not belong to an existing group.

Comments

The following comments concern proposed INNs that might lead to medication errors, either because they are difficult to understand or because they resemble other INNs, common stems, trade names, or even commonly used words. The *Prescrire* editorial team also regrets the blatantly commercial nature of some of the proposed INNs.

Barriers to good understanding of proposed INNs: foreseeable difficulties. The *Prescrire* editorial team identified several proposed INNs that are difficult to understand, because there is no identifiable common stem (especially in pomalidomide), or the common stem is not enough visible (e.g. regrelor), or the INN is too complex to memorize easily (especially contusugene ladenovec, sitimagene ceradenovec and idrabiotaparinux sodium; we propose to simplify the latter as idraparine).

Pomalidomide does not comprise a clearly identifiable common stem. The "-omide" segment evokes a variety of pharmacological groups, such as anticancer agents, antirheumatics, antihistamines and antiepileptics, and is therefore a source of confusion and potential errors. The *Prescrire* editorial team recommends that the WHO INN Programme re-examines all INN comprising this segment and proposes strategies to distinguish among these drugs, in order to improve safety.

The infix -grel- may be present in the INN regrelor, but it is masked by the "-or" segment meaning high value (gold) in French language. The *Prescrire* editorial team prefers relogrel.

Risk of confusion with other INNs or stems. Some of the proposed INNs (e.g. peretinoin, tiliquinatine and laropiprant) do not comprise a common stem or a newly selected pre-stem (8,10), while others carry a risk of confusion with other INNs or with other common stems.

Peretinoin has been read as **pre**retinoine, an INN that does not exist and that should never be created. The *Prescrire* editorial team sees a risk of confusion with other INNs such as tretinoin, and also with the French medical term "*péritoine*". The labelling of medicines would have to clearly distinguish INNs comprising "-retinoin", which contains the common stem -retin.

The proposed INN tiliquinatine (an anticancer drug) carries a risk of confusion with quinidine and quinine. Although these alkaloid names are not INNs, the *Prescrire* editorial team is concerned about a risk of confusion with names of drugs comprising the segment "quini".

Regarding laropiprant, the *Prescrire* editorial team sees a risk of confusion with the suffixes -triptan and -pitant, and with aprepitant. If -piprant is to become a common stem, attention will have to be drawn to the risk of confusion, by clearly differentiating the labels.

It is crucial that INN suffixes remain clearly identifiable, because confusion between different pharmacological groups with different properties has far more serious potential clinical implications than confusion between me-toos with the same pharmacological properties.

Risk of confusion with French trade names. The proposed INN arterolane carries a risk of confusion with French trade names for cardiovascular drugs ending in -lane, such as Fonzylane° and Captolane°. This may be a very small risk, but attention should nonetheless be drawn in regions where arterolane is used to avoid possible confusion with trade names ending in -lane.

Proposed INN with a commercial flavour. Most INNs are proposed by the relevant manufacturers and, as such, are sometimes considered to be part of an overall commercial strategy. Thus, the *Prescrire* editorial team sees a blatant commercial agenda in some proposed INNs, such as tarenflurbil (see formal objections above), and also choline fenofibrate and eldecalcitol.

If choline fenofibrate is not a new pharmaceutical substance with distinct properties, then it is unnecessary to overload caregivers' memories. Fenofibrate is perfectly adequate.

Eldecalcitol contains the segment "elde-", evoking the English word "elderly" and surreptitiously suggesting that this vitamin D analogue is designed for use by the elderly.

Overall, the *Prescrire* editorial team considers that the WHO INN Programme is making tangible efforts but that there is still room for improvement in the choice of INNs that are safe and easy to understand.

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No conflicts of interest

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