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Changing Prescribing in the Light of Tolerability Concerns

How is This Best Achieved?

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Abstract

Despite our knowledge regarding the efficacy, tolerability and optimal use of drugs, suboptimal prescribing still occurs. In view of all the factors that influence prescribing, this is not surprising. The focus of drug tolerability has changed from 'choosing the best alternative' when a drug is prescribed, to a balanced decision incorporating various different treatments from separate healthcare providers. This article reviews strategies that may influence prescribing behaviour and discusses practical considerations for achieving optimal prescribing in view of tolerability concerns.

The patient has a major influence on prescribing and, with the current diversification of healthcare, the patient now controls prescribing behaviour more than ever before. Communication between healthcare providers consequently assumes a vital role. If messages are to be coherent and transferable, it is increasingly important that healthcare workers communicate effectively with one another regarding patients, prescribing patterns, and drug tolerability issues.

Internationally, drug tolerability is a matter of constant concern. Recent examples of drug tolerability issues that have attracted international attention are the third generation oral contraceptives, linked to an increased risk of deep vein thrombosis;[1,2] Stevens-Johnson syndrome after cotrimoxazole (trimethoprim sulfomethoxazole) use;[3] the possible carcinogenic effects of calcium antagonists;[4] and life-threatening asthma associated with inhaled β-agonists.[5-7] Although drug alerts have led to substantial changes in prescribing of the drugs concerned, in many cases drug alerts do not influence prescribing behaviour in the long term.[8,9] Sometimes this appears justified, for instance when the newly discovered adverse effect does not outweigh the clinical benefits, or when there are conflicting reports regarding adverse effects, but on some occasions the reasons for continued prescribing are less obvious.

A major influence on prescribing behaviour is the patient. Many patient factors have been recognised as playing a role in drug tolerability: patients may willingly or unwillingly pressure physicians to prescribe,[10] and reimbursement policies influ-

ence patients' behaviour with respect to the use of pharmacotherapy.[11] Another tolerability issue in this regard is medication adherence. Healthcare workers may try to influence this, but in the end the patient decides on whether or not to take a drug.[12,13]

It may seem surprising that despite our knowledge regarding the efficacy, tolerability and optimal use of certain drugs, suboptimal prescribing still occurs. Examples are the chronic prescribing of hypnotic drugs,[14,15] antibacterial prescribing for viral infections,[16] loop-diuretic prescribing for uncomplicated hypertension,[17] prescribing of (pseudo-) double medication,[18] mutually interacting drugs,[19] subtherapeutic dosages,[20,21] and of unnecessary polypharmacy.[22]

This article reviews strategies that influence prescribing behaviour, the role of the patient, and practical considerations for achieving long term optimal prescribing patterns with respect to drug tolerability and efficacy.

1. Strategies to Change Prescribing Behaviour

How can drug tolerability issues be communicated effectively and with a consistent result? For truly alarming, newly discovered and serious adverse events, this can easily be done by the simple withdrawal of a drug from the market. In some instances, withdrawal is not even necessary because of the impact of such news and the availability of better alternatives. In other cases, however, a thorough and continuous approach is needed to influence prescribing effectively. We present an overview of the various intervention methods that are used to influence prescribing behaviour.

1.1 Printed Materials

An important method of communicating drug tolerability issues to healthcare workers is the dissemination of information through 'dear doctor' letters for drug alerts and drug bulletins for other therapy issues, such as the publication of new insights regarding drug choice in a specific therapeutic area. The dissemination of printed educational materials has been implemented in healthcare settings relatively easily and at relatively low cost. Professional drug bulletins are well known in the UK (Drugs and Therapeutics Bulletin), France (Prescrire), The Netherlands (Geneesmiddelenbulletin), Australia (the Australian Prescriber), and the USA (The Medical Letter on Drugs and Therapeutics).

The effectiveness of printed materials has been evaluated extensively. However, most studies have demonstrated that the dissemination of printed educational materials alone has hardly any effect on prescribing patterns.[23-25] Possibly, this can be explained by the fact that most printed materials usually do not address many non-informational factors such as patient demands and system barriers. 'Dear doctor' letters do not always result in the desired action towards patients,[26] and it has been demonstrated that the impact of a drug bulletin depends on the perceived relevance and the intricacy of the subject discussed.[27] Therefore, to implement information from these printed materials in healthcare, other reinforcements, i.e. complementary educational methods must usually be applied.

1.2 Computerised Feedback

In several settings, computers are used to intervene in prescribing patterns through the provision of feedback. Examples are on-line drug utilisation review in the US to help implement federal regulations requiring drug utilisation review in Medicaid,[28,29] the implementation of drug formularies in computer systems,[30,31] and the development of automatic warning systems regarding contraindications and drug-drug interactions.[32] Advantages of this computerised approach are the relatively low costs and the simplicity of the method. Furthermore, since it comprises direct personal feedback, it is likely to be more effective than the more general educational information.[33] However, it does require prescribing details to be registered in a computer. It should be acknowledged however, that although computerised feedback in itself is rel-

atively cheap, the costs of developing such systems can be high.

Many studies have evaluated the effectiveness of computer-aided implementation of drug formularies or computerised feedback to limit the range of drugs prescribed within a drug group. Because it is continuous and immediate, computer-assistance can be very effective.[34-36]

In The Netherlands, settings exist where GP computer systems are linked to pharmacy computer systems. This linkage leads to immediate feedback to physicians regarding, for example, contraindications, drug-drug interactions, double medication, and inadequate dosages.[37] In some of these settings, (local) drug formularies have been imported in the pharmacy computer systems.[38] Prescribers are prompted for the drug of first choice when they enter the patients' diagnoses into their computer. The latter is a system of computerised feedback on drug prescribing which has been proven to be effective in the UK.[39,40]

It is beyond anyone's capacity to remember a complete drug formulary, adequate dosages for each type of patient, and all drug-drug interactions. Furthermore, it is not sufficient to have these data in a drug formulary or a book on the shelf. A system that automatically provides an alert when an inadequate dosage is prescribed, or which automatically gives the formularies' drugs-of-first-choice can be a very powerful tool in this situation. Like other software, such a system could also offer 'tips of the day', which could provide therapeutic advice, for example, 'Did you know that the combination of NSAIDs and diuretics could lead to acute renal failure?'.

We suggest that, as is the case with dissemination of information through a drug bulletin, it is a prerequisite that the intended change in prescribing is relatively straightforward. When the message becomes more complicated, additional complementary educational methods may be needed.

1.3 Interpersonal Education: One-to-One Academic Detailing

Many workers have used one-to-one academic detailing to provide information on the use of drugs at practice level,[41-46] and the approach has been exploited by the pharmaceutical industry. Prerequisites for an optimum effect of academic detailing have been defined as follows: it should explicitly involve the physician in 2-way communication, it should assess and target physician motivations for and barriers to desired changes in behaviour, it should be targeted at specific physicians who are at risk of inappropriate prescribing, and it should include elements such as graphic aids, the repetition of messages, and clinically relevant and understandable recommendations for positive alternative actions by physicians.[41]

An example of a recent study in which academic detailing was practised continuously is in the UK, where pharmacists from health authorities visited GPs' practices to discuss prescribing analysis and cost data with the prescribing physicians.[44] The impact of these visits was found to have a significant effect on antibacterial prescribing,[44] whereas it appeared to be fairly limited for other drug groups.[47] Further studies are under way to fully evaluate the effect of community pharmacists delivering evidence-based messages to randomly selected GPs across the UK.[48]

In many cases, pharmacotherapy advice, the reinforcement of messages from drug bulletins, or background explanation will come from personal education. Unfortunately, one of the main benefits of the face-to-face approach, i.e. the interactive discussion with physicians (and therefore the flexibility of the educational programme which can make the education 'tailor-made'), is simultaneously a source of its limitation because it makes the intervention time consuming and not everyone (physicians, health authorities) may be prepared to make this investment. With the exception of one study,[49] the cost-effectiveness of academic detailing has not been well evaluated and the cost-effec-

tiveness is therefore unclear in different circumstances and healthcare settings.[46]

1.4 Group Education

Most group education measures rely primarily on traditional didactic learning to effect a change in physician behaviour. Although many group education interventions are being undertaken, only a few controlled studies have been published in which their effect was determined.[46] This effect was previously measured predominantly as a change in attitudes or knowledge; changes in prescribing have been studied only recently and only 1 trial has measured patient outcomes.[50] The effects of group education, such as continuing education, have not been evaluated against control groups until recently.[38,51,52] In one study,[53] a continuing education programme proved to be effective, partly due to the fact that physicians were motivated by demonstrated flaws in their current prescribing behaviour.

Group education, in contrast to face-to-face education, has been used intensively in physician education. It is a relatively efficient method; it is more costly than the dissemination of printed or computerised information, but it is less expensive and less time-consuming than one-to-one contacts between physicians and 'academic detailers'. It follows that, although less time-consuming, group education is less flexible and less tailored to each individual's needs. Santoso, who compared the effects of educational outreach visits with those of a seminar, concluded that the seminar was more effective, but also more costly.[54] Again, very few cost-effectiveness studies of these intervention methods have been published.[46]

In the US, continuing medical education is a well known form of group education.[43] In several European countries, new developments are taking place in which GPs and pharmacists cooperate in a mutual effort to improve pharmacotherapy. In recent years, counselling between GPs and pharmacists has occurred on a structured basis in Scandinavia[55] and The Netherlands,[38,55] and on a more *ad hoc* basis in the UK. Although the meetings are largely informal and have their own local atmosphere, common characteristics can be recognised: the meetings can be seen as a group education in which pharmacists and GPs learn from discussions on rational prescribing and patient information.

2. Patient Influences

The main consideration behind safe and appropriate drug prescribing should be the patient. Many patient factors are now recognised that play an inherent part in the prescribing process.[10,11] These include increased access to information and increased patient autonomy, initiated both on a national and a personal level. Increased accessibility to information has changed both the lives of prescribers and patients. Access to the Internet and the information available therein has increased demand on all service providers, not just medical. New drugs and treatments are described in detail, sometimes without credible research to back up the claims.

In addition, there has been a shift in public respect for the views of the GP, whereby a patient would previously describe their condition and rely on the professional judgement of their GP to prescribe appropriate therapy. At the present time, the Internet often promotes the idea that 'new is best' and patients, equipped with this information, feel empowered to request such therapies. This influences prescribing patterns. It is known that patients often visit the GP with the sole intent of receiving a prescription for a prescribed drug.[56] Studies have shown that patient demand has had an effect on increased prescribing.[57-59]

Governmental emphasis on health promotion and disease prevention has led to a change in the way patients look after themselves. In the UK, this move led to the implementation of the Patient Charter, whereby standards of health provision were listed and laid out for patients to see. Consequently, the mystique of healthcare provision was removed. In this way, the demand for a standard of care, perceived as 'my right' has influenced profes-

sional behaviour, including prescribing. The move towards primary healthcare delivery has also influenced the autonomy of prescribing away from GPs.

In many countries, patients are discharged from hospital into the community quicker; the administration involved in this process is described as 'discharge planning'. Often, specialist care is transferred from the consultant to the GP without much communication. This has led to feelings of resentment; GPs have felt that the consultants are 'dumping' costs on the community sector. In addition, the autonomy for prescribing such therapies is under threat. The GP may not be an expert in the area in question, and may feel that the therapy is not one they are familiar with, and therefore must follow the consultant's prescribing patterns.[60] The use of shared care plans or disease management protocols, designed to alleviate these issues, are often drawn up in the hospital setting with little input from GPs or community pharmacists.

Some patient groups are known to be more autonomous than others. High profile disease states are often associated with high levels of information and encourage autonomous behaviour. One such group is patients with HIV.[61] The publicity surrounding the disease state, the development of therapies and the provision of care through specialist centres and the community, means that these patients demand a high level of input into their care and the drugs they are prescribed.

Increased access to information, increased autonomy over care and increased movement between healthcare sectors has resulted in the patient controlling prescribing more than ever before. These issues should be addressed in the training of physicians and pharmacists, to enable better interaction with patients. In addition, the development of protocols to manage care as patients move between hospital and home should involve all members of the healthcare team, if messages are to be coherent and transferable.

3. Clinical Implications

Inevitably, due to new developments in medicine, (sub)specialisation of professional groups, and economic reasons, healthcare is diversifying.[62] In principle, in view of drug tolerability concerns, new developments in medicine are a good thing. However, the result of diversifying healthcare introduces its own safety issues; 1 healthcare worker may not know what the other is doing.

Ultimately, we want the increasing range of healthcare opportunities to benefit the patient. While this is happening, one might wonder whether it is occurring in an optimal way.[63,64] The recent development of disease management and managed care programmes integrates care for economic reasons. For optimal care, it is necessary that healthcare providers communicate their findings and the reasons for the treatment they choose. Along with improved patient care and the coherence of patient information, such communication between healthcare workers regarding individual patients will lead to better recognition of each other's expertise. This in itself will diminish boundaries between healthcare providers and provide improved care in general, because of the resulting knowledge of 'where to send which patient' and 'where to obtain what information'.

Tolerability issues can be as obvious as a well documented adverse drug reaction (ADR), or as spurious as a contraindication or the use of competitive therapies by different healthcare providers, or unnecessary repeat prescribing.[60] It is difficult to keep pace with all current developments in medicine and one cannot expect to be able to constantly be aware of every tolerability issue. Therefore, cooperation and control between healthcare workers, and agreement regarding the best way to treat certain patients, is an absolute 'must'.[65] Rather than being competitive, this should result in healthcare workers complementing each other's expertise.[60,66]

Finally, changing prescribing in light of tolerability concerns, does not solely involve the issu-

ing of a prescription. It includes the dispensing of that prescription, as well as the appropriate patient information that accompanies it. The following questions should be asked at follow-up. Is the drug effective? Is it still needed? Is it still the best option for this particular patient, especially in view of their other regimens? Could a newly developed disorder possibly be an ADR? The reporting of that ADR to a postmarketing surveillance institute is also an aspect of safe and effective prescribing behaviour.

4. Conclusion

Opportunities to support rational pharmacotherapy and to change prescribing accordingly are currently available. Printed materials are being widely distributed, computer programs have been, and are still being developed, and the Internet provides a wide range of opportunities for continuing education. In many countries, academic detailers visit healthcare workers. Their contact with various professions could improve uniformity of prescribing and educational messages both to patients and to healthcare providers. Furthermore, audit groups are being initiated and in situations where this is not yet the case, they can be initiated theoretically.

If the patient is to benefit from all the educational materials for physicians and from the interventions in prescribing, inevitably the separate healthcare providers for that patient must come together to communicate treatment issues. In this way, they will obtain more general (pharmaco)-therapeutic knowledge and can gain insight into each other's expertise. This also benefits patient care in the long term. Audit groups, in particular, provide an opportunity for healthcare workers to exchange experiences regarding prescribing and other inter-professional issues.

Optimising drug prescribing behaviour with respect to tolerability concerns is an aim that can best be achieved with the continuous collaboration efforts of healthcare workers. These efforts should result in the provision of seamless care and optimal medication surveillance for patients, with the support of existing drug surveillance systems and the provision of these systems with (possible) ADR reports. Furthermore, healthcare workers should routinely provide each other with information on pharmacotherapy, and also continuous feedback on their current prescribing and dispensing behaviour, and patient information data.

In most countries, healthcare structures enable healthcare workers to support and complement each other. A more intensive use of these strategies, together with recognition of the patient as one of the responsible partners in the process of obtaining well tolerated medication, will lead to more optimal and better tolerated drug use which meets current standards in pharmacotherapy.

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