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Editorial

Rational drug use – As common as common sense?

Introduction

Doctors regularly prescribe drugs. They are expected to apply their knowledge of therapeutics to select appropriate drugs for their patients' condition and then prescribe these in correct doses and for the right duration so as to optimise the benefit to the patient. This is how it is supposed to happen in an ideal world, with ideal doctors who are ideally trained. The opening remarks by the WHO on its 'Rational Medicine Use' webpage underscore the existing situation: "The irrational use of medicines is a major problem worldwide. WHO estimates that more than half of all medicines are prescribed, dispensed or sold inappropriately, and that half of all patients fail to take them correctly. The overuse, underuse or misuse of medicines results in wastage of scarce resources and widespread health hazards."¹

Medically inappropriate, ineffective, and economically inefficient use of pharmaceuticals is commonly observed in the health care system throughout the world, especially in the developing countries. Most physicians would vouch for having observed this in their day-to-day practice and there is no dearth of hard evidence to reinforce this impression. Even a cursory survey of the available literature throws up a wealth of data which is strikingly uniform across nations: the problem is undoubtedly a global one.^{2–6} There is reason to believe that the situation is no different in-service hospitals worldwide.^{7,8}

What exactly constitutes rational drug use?

A Conference of Experts on the Rational Use of Drugs, convened by the World Health Organization in Nairobi in 1985 defined that: "Rational use of drugs requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time, and the lowest cost to them and their community."¹ This is often simplified as the five rights – the right drug at the right dose by the right route at the right time for the right patient.⁹

These requirements will be fulfilled if the prescribing process covers the following steps: (a) Defining patient's problems (diagnosis); (b) Defining effective and safe treatments (drug and non-drug treatments); (c) Selecting

appropriate drugs, dosage and duration; (d) Writing a clear prescription; (e) Giving patients adequate information and counselling; and finally (f) Planning to evaluate treatment responses. Unfortunately, in the real world, prescribing patterns do not always conform to these ideals and what prevails instead is inappropriate, irrational or "pathological" prescribing. Common examples of irrational prescribing seen in day-to-day practice include the use of: drugs when no drug therapy is indicated, e.g., antibiotics for viral upper respiratory infections; wrong drug for a specific condition requiring drug therapy, e.g. an antibiotic in childhood viral diarrhoea requiring ORS; drugs with doubtful/unproven efficacy, e.g. antimotility agents in acute infective diarrhoea; correct drugs but incorrect administration, dosages, or duration, e.g., use of IV metronidazole when an oral formulation would be appropriate; unnecessarily expensive drugs, e.g. a third generation, broad spectrum antimicrobial when a first-line, narrow spectrum, agent would suffice; and multivitamins and 'tonics' and so forth. The list could go on and on.

What causes irrational prescribing?

The factors underlying the irrational use of drugs are diverse. The major forces can be categorized as those deriving from patients, prescribers, workplace, supply system including industry influences, regulation, drug information and misinformation, and combinations of these factors.

- (a) Patients often come with the belief that there is "a pill for every ill". Their demands and expectations often pressurise physicians to choose the easy path of medicine-on-demand rather than the tedious alternative of patient education.
- (b) What is of greater concern is a disturbing and pervasive factor related to the prescribers' poor training. The examples of irrational prescribing cited above speak for themselves. Some serious soul-searching by all those in a position to influence the training of a prescriber – or a future prescriber – would inevitably lead to the conclusion that a lot remains to be done on this front.
- (c) The prescriber's apparent irrationality, however, cannot always be blamed on a lack of competence; the workplace may impose pressures of its own. Understaffed and

overpopulated OPDs, inadequate staff, drug shortages, inadequate laboratory backup and a limited inventory of drugs from which a choice must be made are some of the issues which most doctors from resource-poor settings grapple with on a daily basis.

- (d) Added to this is aggressive pharmaceutical marketing whereby the practitioners' major resource for updating pharmacological knowledge derives from the industry rather than authoritative scientific literature.¹⁰
- (e) The pervasive influence of the industry applies not just to the individual practitioner but may extend to the authors of Clinical Practice Guidelines (CPGs) as well. Influencing the authors of CPGs can have a substantial impact on drug use, as the information disseminated by way of CPGs is transmitted many times over to the readers and can thereby influence the practice of a large number of physicians. A study on the extent to which the authors of CPGs interact with the pharmaceutical industry estimated that 87% of authors had some form of interaction with the pharmaceutical industry, 58% had received financial support to perform research and 38% had served as employees or consultants for a pharmaceutical company.¹¹

A case in point is the upward revision of target haemoglobin levels in chronic kidney disease (CKD) from 11 to 12 g/dl to 12–13 g/dl by the US National Kidney Foundation (NKF) in 2006. The NKF is the principal organization that develops and promulgates management guidelines in nephrology in the United States. This recommendation had the potential to increase the use of haematopoietic agents such as epoetin or darbapoetin in these patients with resultant increase in costs as well as toxicity. This was despite the fact that all forms of Erythropoietin Stimulating Proteins stated in their FDA-approved package inserts that target haemoglobin in patients with CKD should not exceed 12 g/dl and that the dosage of ESP should be reduced or held if this level is exceeded. The NKF receives substantial financial support from the industry. Interestingly, out of 16 members of the 2006 anaemia work group, 14 reported receiving consultant fees, speaking fees, and/or research funds from at least one company that potentially was affected by the guidelines.¹²

The impact of irrational prescribing

The impact of irrational drug use is predictable. Reduction in the quality of drug therapy leads to increased morbidity and mortality, wastage of resources leading to reduced availability of other vital drugs, increased costs, increased risk of unwanted effects and the emergence of antimicrobial drug resistance.¹³ In one study of a single district in India, a whopping 69.2 percent of the money spent on drugs in the private sector and 55.4 percent in the public sector was wasteful. Rs. 14.76 crore was wasted on irrational prescriptions in this district in a single year – 67.58 percent of the district's total drug consumption.¹⁴ There is also an adverse psychosocial impact of irrational prescribing by way of perpetuation of the notion that every symptom requires a medication.

What is being done about it?

The importance of promoting rational use of medicines is underscored by the fact that various initiatives in this direction are being incorporated into health care systems at a national as well as international level. The WHO provides training resources for Drugs and Therapeutics Committees in a downloadable format from its website, apart from a wealth of information regarding essential drugs, Standard Treatment Guidelines (STGs), antimicrobial resistance, information regarding workshops and conferences and so on. For instance, WHO publications such as 'The Guide to good prescribing' can be easily downloaded.¹⁵

Apart from the WHO, an organisation dedicated to rational medicine use known as the International Network for the Rational Use of Drugs (INRUD) is active across the globe. Closer home, various societies such as the Delhi Society for the Promotion of Rational Use of Drugs (DSPRUD) and the Rajasthan Society for the Promotion of Rational Use of Drugs are attempting to spread the message of rational prescribing. Several states such as Chhattisgarh, Orissa, Karnataka and Tamil Nadu have formalized Standard Treatment Guidelines (STGs) for implementation in the respective states and also have their own essential drug lists. These initiatives, among others, are pointers to the increasing recognition being accorded to the importance of rational drug use in healthcare practice.

Situation in armed forces hospitals

The Armed Forces Medical Services (AFMS) can boast of what is arguably one of the best organised networks of health care delivery. While the task of addressing the factors leading to irrational pharmacotherapy may be a daunting one at a global or even a national level, the outlook for the AFMS need not be so grim. Many of the mechanisms required for the rational use of drugs are already in place. A list of essential medicines – a vital component of rational drug use – is available in the form of the PVMS.^{16,17} A structured mechanism for additions or modifications to this list is available and functional. The systems for procurement and supply of drugs ensure that shortages generally do not occur and STGs are available for common diseases.¹⁸

What more is required to be done?

The first step towards institutionalising a culture of rational drug use is sensitisation of the prescribing doctor. The concept and its importance requires to be stressed at every possible training opportunity – for the undergraduate, the intern, the postgraduate resident, the medical officer and nursing staff undergoing in-service courses and so on.^{19,20} Certain literature which many young medicos may be unaware of, such as the STGs mentioned above and the WHO website on medicines (<http://www.who.int/medicines>), could be made 'essential reading' for all professionals. The importance of concepts such as Essential Medicines, P-drugs

(evidence-based personal drug selection according to criteria of efficacy, safety, suitability and cost), pharmaco-vigilance, pharmaco-economics, antibiotic policy, etc. require to be reinforced at professional gatherings as well as in the course of routine teaching-learning activities.

Effective implementation of systems and procedures which are already in place is another area which could do with some attention. Every hospital administrator is aware of the need for a 'Drugs and Therapeutics Committee' in hospitals.²¹ In many hospitals, however, these committees may not be as active as they are required to be. It may be worthwhile for these committees to actively undertake their various roles which include guiding and monitoring drug use in the hospital by way of conducting prescription audits, monitoring adverse drug reactions, monitoring drug dispensing practices, formulating antibiotic policy with the active participation of the clinician as well as the laboratory and effecting course corrections whenever required.

And then of course, there is role-modelling. No amount of teaching, training or sermonising can replace the need for ideal prescribing behaviour by 'seniors' at all levels: the senior intern, the senior medical officer, the senior resident, the senior specialist. Prescribing practices need to be justifiable, evidence-based and illustrative of sound clinical and pharmacological principles. The mechanisms, the infrastructure and the competence exist. With a little awareness, the right attitude and a lot of will, the Rational Use of Medicines is yet another area where the Armed Forces can do what they do best i.e. lead by example.

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Available online 17 May 2012

0377-1237/\$ – see front matter

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doi:10.1016/j.mjafi.2012.04.002