THE EFFECTIVENESS OF MEDICINES

The Relationship between Patient and Prescriber Expectations of Effectiveness of Medicines and Compliance

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ABSTRACT

Effectiveness of medicines as reported in the literature can be difficult to interpret and explain to patients in clinical practice. A patient-orientated measure of effectiveness, the Category of Effectiveness (COE) was developed in 1988 by Dr Holford, Department of Pharmacology and Clinical Pharmacology, University of Auckland, School of Medicine. This was designed to examine the effectiveness of medicines in terms of easily understood patient-orientated outcomes which may influence the patient's daily living or quality of life.

As part of their pharmacology training, third-year medical students were assigned two medicines to evaluate in terms of COE and asked to calculate a rate/1000 treatments or rate/1000 treatment years i.e. a Rate of Effectiveness (ROE). Interviews with three health professionals to obtain their opinions of the assigned medicines in terms of COE and ROE were recorded. An ordered scale of effectiveness, the Likelihood of Effectiveness (LOE), was developed by Dr Holford and the author in order to review these student projects. A review by the author of 201 of these projects over a five year period, suggests that health professionals expectations of some commonly prescribed medicines are over-optimistic.

A literature search to obtain effectiveness information in terms of COE and LOE of twelve commonly prescribed medicines, Augmentin, cefaclor, beclomethasone, salbutamol, atenolol, captopril, enalapril, ranitidine, paracetamol, diclofenac, aspirin, and triazolam was undertaken. Such information was found to be limited in the literature as clinical trial results are seldom expressed in such terms.

Opinions of patients and prescribers about The Category of Effectiveness (COE) and Likelihood of Effectiveness (LOE) of commonly prescribed medicines have not been examined in clinical practice. The influence these may have on medicine use was therefore surveyed for the twelve medicines listed above. One hundred and fifty-three patients received 247 prescriptions for one or more of these medicines. Expectations of patient and corresponding prescriber were similar in terms of COE, but LOEs differed significantly for 8 of the 12 medicines. Neither COE nor LOE were significantly related to patient compliance which was measured after 5-10 days. Most compliance-failure was seen in patients whose medicine was newly prescribed for short-term treatment. Information other than basic instructions was received by <25% of patients from either the prescriber or the pharmacist. At the surgery/hospital only 19% of patients remembered receiving written

information about their medicine, which increased to 22% at the home visit. Of the patients who completed the medicines information questionnaire, only 59/152 (38.6%) would like more general information about their medicines. Despite this, 139/152 (91.4%) patients would like more specific information on how their medicine works, and 130/152 (85.5%) want to know how well it can be expected to work. This information has not been given to patients in the past.

It was hypothesised that providing effectiveness information to patients may have some effect on compliance. The influence on compliance that providing written medicine effectiveness information as pamphlets from community pharmacists may have, was examined for 211 patients in a double-blind controlled trial. Patients who presented a prescription for beclomethasone for asthma or enalapril for hypertension were invited to participate. Each patient received one of three pamphlets, 1. specific medicine information pamphlet, 2. specific medicine information plus effectiveness information, 3. a control pamphlet containing general medicine information. Medicine knowledge was significantly increased by both the medicine information pamphlet ($p=0.028$) and the medicine and effectiveness information pamphlet ($p=0.016$) compared to control. Significantly more beclomethasone than enalapril patients showed compliance-failure ($p=0.001$) although this was independent of the pamphlet given. Expectations of LOE were related to patient compliance for beclomethasone patients, but not for enalapril patients. Significantly more beclomethasone patients with higher expectations of LOE were compliant ($p=0.017$). Satisfaction with the information contained in the pamphlet had a positive effect on patient compliance with beclomethasone individually. Patient-orientated measures of effectiveness such as COE (Category of effectiveness) and LOE (Likelihood of effectiveness) can identify patient expectations, increase patient knowledge and may provide some insight into patient compliance failure.

PRESENTATIONS AND PUBLICATIONS ARISING FROM THIS THESIS

Paper presented at ASCEPT Conference, Brisbane 1993

Ware GJ, Holford NHG. Effectiveness of medicines - the influence of patient and prescriber expectations of effectiveness

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Paper presented at the ASCEPT (New Zealand) Conference Wellington 1995

Ware GJ, Holford NHG. Knowledge of the effectiveness of medicines - does it alter patient compliance?

Poster presented at the ASCEPT Conference, Adelaide 1995

Ware GJ, Holford, NHG. Knowledge of the Effectiveness of Medicines - Does it alter compliance with long-term medicines?

Abstract Published in Proceedings ASCEPT 1995 p158

Paper presented at the APSA Conference Adelaide 1995

Abstract Published

Ware GJ., Holford, NHG. Patients' perceptions of the effectiveness of their medicines - Does this alter long-term compliance? (Abstract) Aust J Hosp Pharm 1996;26:4:506

Paper presented at the PSA Congress Melbourne 1996

Abstract Published

Ware GJ., Holford, NHG. Pharmacists and medicine information - a key aspect of Pharmaceutical Care (Abstract). Australian Pharmacist 1996;15:11(Suppl):5-6.

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LIST OF ABBREVIATIONS

ACEI	ACE-inhibitor
ADR	adverse drug reaction
BIDS	Bath Information and Data Service
BMA	British Medical Association
CHF	congestive heart failure
COE	category of effectiveness
CPI	consumer product information
CMI	consumer medicine information
CCU	Critical Care Unit
FDA	Food and Drug Administration (USA)
GP	general practitioner
HBM	Health Belief Model
HV	home visit
IPA	Independent Practitioner Association
LOE	likelihood of effectiveness
MI	myocardial infarction
MOS	Medical Outcomes Study
NSAID	non-steroidal anti-inflammatory drug
NHP	Nottingham Health Profile
NNT	number needed to be treated to obtain an effect
OBRA	Omnibus Budget Reconciliation Act
PHARMAC	Pharmaceutical Management Agency Ltd
pHx	past history
QoL	quality of life
RCT	randomised controlled trial
SF-36	Short-Form Questionnaire developed from Medical Outcomes Study
SPC	summary of product characteristics
USPDI	United States Pharmacopeia Drug Information Service