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Incorporating Clinical Expertise and The Clinical Presentation in Evidence-Based Medicine

Bradley R Mitchelmore[1] and Hoan Linh Banh[2]*

[1]University of Alberta, Faculty of Pharmacy and Pharmaceutical Sciences, Canada
[2]University of Alberta, Faculty of Medicine and Dentistry, Department of Family Medicine, Canada

A 76-year-old female with a history of hypertension is referred to a clinical pharmacist in a primary care clinic from a family physician for management of uncontrolled hypertension. The office reading average for the past three follow-up visits was 146/87 mmHg. The patient's medical history is negative for stroke or any major vascular event. She has been managed for 10 years with ramipril 5 mg daily. The family physician requested a medication review to recommend additional or alternative therapy to achieve a target blood pressure of 140/90 mmHg. The patient expresses hesitation about increasing pill burden.

The application of evidence-based medicine has resulted in numerous clinical practice guidelines being developed over the past two decades. These guidelines are updated frequently based on new evidence published. It is up to the clinician to keep abreast of these updates and apply them to their clinical practice. However, more clinicians are applying these guidelines as protocols and not incorporating patient characteristics into the decision-making process.

The initial model of evidence-based medicine was based on the application of clinical expertise, research evidence, and patient preference [1]. However, recognizing that this model has limitations, including a resultant variation in practice, a newer model has been proposed. This model focuses on the application of clinical state and circumstances, patient preferences and actions, and research evidence with an overlay of clinical expertise. This model has replaced clinical expertise with clinical state and circumstances in order to remove clinician preferences from the model and use the clinician's expertise as a means to integrate the three components in clinical decision-making.

Supporting rationale for this change includes the evolution of how clinical practice guidelines are developed. Evaluations of clinical practice guidelines have indicated that nearly half of guideline recommendations are opinion or consensus based [2]. As well, many of these recommendations do not stand the test of time as guidelines are revised. An evaluation of American College of Cardiology (ACC)/ American Heart Association (AHA) clinical practice guidelines demonstrated that 26 percent of recommendations based on opinion were downgraded, reversed, or omitted in subsequent revisions of guidelines [3]. Even 9.5 percent of recommendations that were based on multiple randomized controlled trials were also downgraded, reversed, or omitted.

Using the seventh and eighth reports of the Joint National Committee (JNC) on Prevention, detection, evaluation, and treatment of high blood pressure in adults as an example, with a decade in between publications, recommendations on blood pressure targets in the elderly have changed based on evolving opinion and evidence [4,5]. The JNC-7 recommends a target blood pressure of less than 140/90 mmHg for adults, whereas the JNC-8 guidelines recommend a target of less than 150/90 in patients 60 years of age or older. This change is based largely on the publication of the Hypertension in the Very Elderly Trial (HYVET), which randomized patients aged 80 or older to a target blood pressure of less than 150/80 mmHg [6]. In the intervention group, mean blood pressure achieved was 144/78 mmHg after 1.8 years follow-up, and this was associated with a statistically significant reduction in all-cause mortality.

Using the revised model of evidence-based medicine, after an evaluation of where the guideline recommendations arise from and the results of the primary literature, it is important to also consider the clinical presentation of the patient and the patient's preference. In the case presented above, the patient's current blood pressure is at a satisfactory target based on the latest clinical practice guidelines and supporting evidence. Upon patient assessment, the patient is not experience any adverse effects from ramipril and does not demonstrate any objective sign of orthostatic hypotension. The patient communicates with the pharmacist that she would prefer to stay on her current medication regimen rather than switch.

In summary, applying clinical expertise to integrate three objective components of evidence-based medicine, rather than introducing the subjectivity of clinical expertise as a decision-making factor as one of the three components, resulted in a different assessment and management outcome that meet both the patient's and the clinician's goal.

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***Corresponding author:** Hoan Linh Banh, Associate Professor, University of Alberta, Faculty of Medicine and Dentistry/Department of Family Medicine, 6-10 University Terrace, Edmonton, AB, T6G 2T4, Canada, Tel: 780-248-1835; Fax: 780-488-2396; E-mail: hoan@ualberta.ca

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