Gaps and opportunities in the practice of medicine: the need for improved systems of care

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The medical profession is increasingly confronted with the disconcerting fact that despite the impressive scientific advances in clinical knowledge and improved outcomes that have been achieved, substantial opportunities for improvement remain. For example, a growing body of evidence points to the need for new approaches to ensure that each patient is treated according to the best scientific knowledge that is available in order to optimize outcomes.

In this issue, Hengstenberg and colleagues[1], using data from the Ausberg cohort of the World Health Organization’s MONICA myocardial infarction registry, add to the literature revealing gaps in the performance of health care delivery. These investigators evaluated cardiovascular risk factors in siblings of patients who had had a myocardial infarction before 60 years of age. These patients are of particular interest because they presumably have a high risk of cardiovascular disease and thus much to gain from risk factor modification. Subjects in the study were examined for the primary preventive care they received in order to assess its consistency with practice objectives defined by guidelines written by combined task forces of the European Society of Cardiology, European Atherosclerosis Society, and the European Society of Hypertension (ESC/EAS/ESH).

The investigators found a high prevalence of cardiovascular risk factors in the siblings. Among those with hypertension, most were receiving anti-hypertensive medication, but relatively few attained recommended blood pressure target levels. Less than half of the siblings with indications for lipid-lowering therapy were treated, and target cholesterol levels established by the guidelines were reached by less than 10% of treated patients. In addition, patients’ likelihood of achieving target levels for blood pressure and cholesterol were not related to their underlying risk of cardiovascular disease. Thus, siblings with the most to gain from risk reduction were no more likely to be treated in accordance with guideline recommendations than their lower-risk counterparts.

The study highlights the marked difference between the randomized, controlled trial and the ‘real world’ of clinical practice. While several such trials have provided evidence for risk factor modification directed at hypertension and cholesterol, they necessarily highlight patient care in the best set of circumstances — a defined cohort, established treatment protocols, and a patient population motivated towards treatment (as reflected by their voluntary enrolment). In actual practice, the promise of trials is rarely realized. As Hengstenberg and colleagues indicate, patients’ risk factors are often unrecognized or, when treated, are commonly insufficiently managed to enable patients to reach recommended target levels.

Gaps in treatment are certainly not confined to practice patterns in a small region of Germany. These results are consistent with many recent studies, illuminating opportunities for improvement in preventive cardiovascular practices. For example, an Italian study published in 1997 showed that relatively few hypertensive patients receiving therapy achieved levels of 140/90 mmHg or lower[2]. A recently published study of hypertensive men in the United States reported that 40% of patients had a blood pressure of 160/90 mmHg or higher and few changes in therapy despite an average of six hypertension-related visits per year[3]. Another article from the United States demonstrated that commonly the choice of antihypertensive medications does not follow the recommendations of national guidelines[4]. Similar opportunities for improvement in care have been documented in the detection and treatment of hypercholesterolaemia. Frolkis and colleagues reported that physicians at a university-affiliated hospital appropriately treated less than half of the patients who should have received lipid-lowering therapy according to the National Cholesterol Education Program guidelines[5]. The EUROASPIRE Study Group also found treatment gaps in Europe[6]. These gaps in practice are regrettably not limited to preventive practices. Other studies have
identified significant opportunities for improvement in the treatment of acute myocardial infarction \cite{7}, heart failure \cite{8}, and other cardiovascular conditions \cite{9}. The consistency of these findings provides a clear indication that knowledge gained from research is inconsistently translated into clinical practice. At the cusp of a great new wave of diagnostic and therapeutic tools in cardiology, we are recognizing the need to determine how to optimally disseminate best practice based on established knowledge.

Any practising physician knows that adherence to guidelines is not possible or even desirable for all patients. Not all patients can reach blood pressure targets despite our best efforts. Targets are, in some regards, arbitrary goals, and patients who are very close to these levels may not necessarily need to have another medication added just to reach a target. However, the preponderance of evidence suggests that the vast majority of gaps in treatment are not small, and that opportunities for improvement are substantial. The magnitude of the benefit that could be realized by improving compliance with therapeutic goals is impressive. Capewell and colleagues have estimated that increasing compliance with recommendations for guideline-based treatment of myocardial infarction and heart failure, and secondary prevention for patients with coronary artery disease, would prevent or postpone 4080 deaths annually in Scotland and 30 000 deaths annually in the U.K. alone \cite{10}. The potential population gains in survival rival, and in many cases exceed, the impact of highly touted new innovative therapeutics. At a time when our focus is increasingly directed at new treatments, these data suggest improvements can be made by adequately applying the clinical knowledge we already possess.

The first step in addressing missed treatment opportunities is ensuring that adequate information is available. How many practices know which of their patients are being treated in compliance with recommended standards? How many practices can regularly identify such patients and ensure that reasons for lack of compliance are adequately acknowledged and documented? How many practices measure or have a method of tracking the care provided to their patients? And finally, how many practices have a strategy to improve their performance and ensure that each patient has the opportunity to receive treatment that is aligned with the guidelines?

The necessary response to the recognition of these problems must be action to improve systems of care. Merely publishing studies that highlight inadequacies in care will not improve performance. Exhorting health care professionals to remember to apply secondary prevention practices may provide a temporary improvement, but sustained improvement requires a formalized system response — such as standing orders, formal treatment protocols, or other treatment oversight — that makes it easy for best practice to be disseminated to all patients. The goal is not to constrain physicians, but to assist them.

The applied research provided by Hengstenberg and colleagues directs our attention to both an important opportunity and concern. Reports about quality of care and patient safety are eroding confidence in the medical profession. Who will step forward to address these concerns? Leaders should come from within the ranks of physicians and other health care professionals. We should respond to the growing evidence of inadequacies in care by developing positive changes in the delivery of health care that improve patient care. Though such efforts will take time and effort to implement, our responsibility as advocates for our patients necessitates that we act now.

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