

Evidence-based medicine: applied science?

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In an editorial entitled “Evidence B(i)ased Medicine”, one of us wrote that “Physicians need to ask the right questions and to use a vast array of tools to find answers for an individual patient, including experience with similar cases and compassion as well as ethical aspects, which go beyond the quality of controlled clinical trials” (*Clin Oral Investig* 4: 131–132). Here, it was argued that “Science is a necessary but not sufficient basis for our daily activities, and experience is necessary but reliable only to a limited extent.”

We rely on evidence-based medicine to provide a conscious, explicit, and rational usage of the best evidence available for decisions on individual patients, and recent consensus conferences have used assigned levels of evidence to develop grades of recommendations. These are then often accepted as jurisdiction guidelines in Europe and, from a medicolegal standpoint, as ‘standards of care’ in the US.

Of course, these conclusions are based on the best available evidence, which does not necessarily translate into the best application for an individual patient. For example, in inflammatory bowel disease or other chronic conditions, the best available evidence is often short-term and, typically, does not apply to the long-term management of patients. Indeed, in a consensus document on the diagnosis and management of Crohn’s disease from the European Crohn’s and Colitis Organization (*Gut* 55 [Suppl 1]: 1–58), there were 234 guideline statements, of which only 18% were assigned a level of evidence of 1 and only 11% were assigned a recommendation grade of A (the highest grades, according to the definitions used by the Oxford Centre for Evidence-Based

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Medicine). Nearly 90% of recommendations for the diagnosis and management of Crohn’s disease, therefore, were not based on level 1 or grade A evidence. Furthermore, most of the level 1 evidence is from short-term controlled clinical trials (e.g. treatment of mild or moderate ileitis over 4–16 weeks) without considering management of the chronic condition. We won’t even get into the issue of whether assignments of evidence levels, or recommendation grades, were uniformly applied. The conclusion is that we are, too frequently, left without a long-term rational approach to disease management when only evidence-based recommendations are considered.

Evidence-based science does not, at present, provide a sufficient basis for the day-to-day management of individual patients, and the existing evidence is too limited in its focus to address the broad algorithms necessary to treat a spectrum of disease phenotypes. In order to produce a correct answer, an appropriate question has to be asked. Too often, clinical trials, usually sponsored by industry to gain approval for marketing of drugs, do not address the larger questions necessary to make appropriate recommendations for disease management.

“The search for the best available evidence for decision making in an individual patient is a simple necessity for every responsible physician” (*Clin Oral Investig* 4: 131–132) and the evidence-based approach is a valuable tool, when applied to the ‘right question’. The limitations in the scope and focus of available, high-quality clinical trials provide fertile ground for further clinical investigation, but aspects such as experience, compassion and ethics must factor into the equation.

J Schölmerich is an Advisory Board member, and SB Hanauer is Editor-in-Chief of Nature Clinical Practice Gastroenterology & Hepatology.

Competing interests

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