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Eminence-Based Medicine: The King is Dead

Although possibly difficult to reconcile, many of us nephrologists were trained in our discipline by what some would refer to as “eminence-based medicine.” Our supervising physicians were emperors of the courts of medical knowledge and progress, often trained in basic science and with evident knowledge of the Bonferroni correction to preclude cumulative type 1 errors or alpha inflation.¹ These kings could, when they deigned to, humble and stupefy us with their brilliance, solely steeped in the faith of the mechanistic world of biological plausibility, renal transport mechanisms, and pure, unconfounded, unadulterated experimentation. Because “they said so,” they were correct and our own hypotheses were cast aside, albeit as type 2 errors! Often and years later, we have come to realize that the evidence for their decrees were simply their best estimates based on either small, uncontrolled, observational studies, sometimes “N” equaling “1,” or simply a dearth of information. No lie was intended, just an eliding of the facts whenever they existed.

All of this was supposed to have changed after the genesis of evidence-based medicine and the dawn of critical appraisal methods to determine the weight and goodness-of-fit of studies. However, we have been more than slow to change. In fact, nephrologists represent a group that almost defies the results of evidence-based medicine. Blame has been cast on our discipline for its relative lack of randomized controlled trials. Moreover, even when properly executed, the results of such trials are often ignored. The appearance of guidelines, based on evidence where feasible, and informed opinion when not, has been demonized as weapons of insurers, payers, and the government. Guideline committees that have toiled assiduously over thousands of pages of disparate and inhomogeneously constructed literature have consequently been treated like Dr. Stockmann in Ibsen’s “An Enemy of the People.”²

Why is the discipline of nephrology so far behind in its adaptation to an evidence-based practice? One reason is that there are relatively few large, randomized controlled trials compared with per se the discipline cardiology,

which began its embrace of evidence more than 2 decades ahead of nephrology. As a corollary, such trials are highly expensive, and single endpoint measurements rather than composite ones are difficult to attain in the realm of the kidney. Truly, the complex nature of CKD patients, particularly those suffering with ESRD, represents a degree of confounding that is absent from many other internal medicine specialties, but such an excuse can only be used so many times. A second reason is that nephrology has been so immersed in basic science that there was little or no incentive to pursue funding of appropriate clinical trials or practicing evidence-based medicine. A third is that nephrologists have too long depended on observational studies. A fourth reason is that the bulk of larger studies have been subject to bias, namely, pharmaceutical studies that depend on multiple small sites for data accrual where training in qualified data acquisition is heterogeneous. Multiple other reasons exist and do not require repetition or retrenchment.

However, randomized controlled trials cannot always be conducted, possibly for technical or ethical reasons, and one must then use established hierarchical rules of engagement to determine quality of evidence. This hierarchy exists and represents a roadmap toward a better conclusion to a question that may not have definitive answer. In such circumstances, well-conducted case-control studies may provide meaningful estimates of exposure and establish risk levels. Also, observational studies may be informative when confounding and bias are reduced—these cannot be completely eliminated. Overall, when there is doubt, the reduction of uncertainty begins with thoughtful weighing of evidence. We should not dismiss that there are other considerations to contemplate in today’s “modern medicine,” including the atavistic-sounding patient-centric approach and the use

of comparative effectiveness research to guide therapy. The founders of evidence-based medicine, as physicians, comprehended this from the start and appreciated that an evidence foundation is just one component of an evidence-based, patient-centered, decision-making process. There was no intent to eradicate the art of medicine, but to amplify it.

Comparative effectiveness research involves 7 steps: Identification of new and emerging clinical interventions; review and synthesis of current medical research; identification of gaps between existing medical research and the needs of clinical practice; promotion and generation of new scientific evidence and analytic tools; training and development of clinical researchers; translation and dissemination of research findings to diverse stakeholders; and reaching out to stakeholders via a citizens' forum.³ Notably, comparative effectiveness research does not preclude evidence-based medicine, but it does not solely subscribe to it either. Goldenberg appeals, in part, to this concept and reminds us to remain circumspect with her challenge: "The appeal to the authority of evidence that characterizes evidence-based practices does not *increase* objectivity but rather *obscures* the subjective elements that inescapably enter all forms of human inquiry. The seeming common sense of EBM only occurs because of its assumed removal from the social context of medical practice. In the current age where the institutional power of medicine is suspect, a model that represents biomedicine as politically disinterested or merely scientific should give pause."⁴ Nevertheless, adherence to an evidence base can promote change and the remarkable achievement of core benchmarks in nephrology CKD clinics, despite the ultimate question: "What are the benchmarks?"⁵

Therefore, we must educate and enrich our charges, our colleagues, and most importantly, ourselves, in evidence-based medicine, not eminence-based medicine. Such education will only provide for patients in a more meaningful way, prevent waste, and reduce the overall cost of health care. This form of education does not supersede or better

others such as the basic sciences, but like them, it is necessary and not sufficient. Evidence-based medicine teaching must be plied early on and considered a fundamental competency in the same manner that the physical examination was and still is. A true embracing of this proposal is challenging and requires a fundamental shift in medical education. As a case in point, the Canadian medical school system zealously adopted and implemented this attitude years ago. Future teachers must be taught today, and curricula must be recast and exacted for successful learning of evidence-based medicine principles, as espoused and advocated for by the Guest Editors, Molony and Samuels, of this first-of-its-kind issue of *Advances in Chronic Kidney Disease*. The topics in this issue should be considered pretext, not text, as the concepts contained herein represent the first filter and lens through which we more precisely partition and focus our clinical decision making. This paradigm shift requires further acknowledgment by medical societies and promotion because, despite this rallying cry, momentum for this effort requires not only mass but velocity. Authority once had its privileges but is no longer ensconced as the touchstone of clinical medicine. The king is dead, and now we must act, liberated from the tyranny of instinct and nonsystematic applications of our own knowledge.

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Editor

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