Evidence based-medicine (EBM) is a concept that has come into widespread use in the medical world in the last decade. Sackett, the guru of EBM movement, defines it as the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The philosophy of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research. By individual expertise we mean the proficiency and judgment that individual clinicians acquire through clinical experience and clinical practice. Good clinicians use both individual clinical expertise and the best available external evidence, for neither alone is enough.

How does EBM compare with the traditional wisdom of medicine? There are several differences. First, EBM argues that all medical action of diagnosis, prognosis and therapy should rely on solid quantitative evidence, based on the best of clinical epidemiological research. Second, it wants us to be cautious about actions that are only based on experience or extrapolation from basic science. According to EBM, intuition and unsystematic clinical experience as well as pathophysiologic rationale are insufficient ground for clinical decision making. Third, it challenges the paternalistic and authoritarian nature of medical practice. It focuses on patient autonomy, informed consent and shared decision. EBM expects that patients will be informed about their illness and the options for treatment, and be fully involved in decisions about their health care. It strongly supports the first principle of medical ethics autonomy.

Ethics and EBM share common goals. In fact, ethics is at the heart of evidence based health care. Both emphasise the importance of patient’s autonomy, and respect their values and expectations. From an ethical perspective, the strongest arguments in support of evidence based-medicine are that it allows the best evaluated methods of health care (and useless or harmful methods) to be identified and enables patients and doctors to make better informed decisions. A medicine text aptly sums the scenario: “In failing to apply the best and most current evidence, the physician places the patient at unnecessary risk. However, a knowledge or rapid access to the best available evidence is not sufficient for optimal care. The physician must know whether the evidence is relevant to the patient in question and, when it is, the consequences of applying it in particular situation. The skills and judgment required to apply sound evidence interpretation is an increasing challenge. Indeed one might define a good doctor as one who uses the ever growing body of rigorously obtained evidence (the science of medicine) in a sensible, compassionate manner (the art of medicine).”

Traditional wisdom may be harmful

Several diagnostic tests and interventions are based on traditional wisdom, recommendations from experts and department specific protocols. Many interventions are considered standard without ever having been subject to rigorous evaluation. Rigorous analysis of such practices shows that far from benefiting the patients, they actually harm the patients. Let me illustrate this by three examples.

Electronic fetal monitoring (EFM) is used in the management of labour and delivery in nearly three of four pregnancies in the developed world. Although concerns have been raised about both efficacy and safety of EFM, the technology seems to have mesmerized the obstetricians. A recent Cochrane review concluded that apart from reduction of neonatal seizures, the use of EFM offered no benefits. In fact it increased the rates of (unnecessary) cesarean sections and operative vaginal delivery.

Human albumin solution, used in the emergency treatment of shock, burns, and severe hypoproteinaemia, is another example. Though expensive, albumin continues to be used in intensive care units because most clinicians believe that it can restore homeostasis and save life. A systematic review of 31 trials conducted to determine whether albumin administration reduces the risk of death in critically ill patients with hypovolemia, burns or hypoalbuminaemia shattered this myth and concluded that patients who receive albumin are more likely to die compared to those who do not.

Fasting before general anaesthesia aims to reduce the volume and acidity of stomach contents during surgery, thus reducing the risk of regurgitation of gastric contents. Recent guidelines recommend that the standard fasting policy ‘nil by mouth from midnight’ may be replaced by...
an approach that permits fluid intake up to two hours before surgery. Indeed, prolonged fasting before operation might be detrimental to the patient.

These conclusions clearly tell us that physiological rationale alone is an inadequate guide for therapeutic decisions. If we continue to base our practice on surrogate markers and physiological endpoints, we are likely to harm our patients in more ways than one: we make unscientific use of technology, and offer expensive and unproven interventions to our patients, which much to our dismay provide no benefits. Systematic reviews can help us implement new proven practices that help or abandon established ones that are harmful, and thus can help us use scarce resources in healthcare meaningfully. An ethical clinician subscribes to the philosophy and practices of EBM.

Towards evidence based preoperative assessment

Ethical and professional integrity requires that clinical practice should be guided by well researched and validated standards of care. By doing so, over, under-, and mistreatment can be minimized. An area where evidence based medicine could play a crucial role in shaping rational and ethical practice is preoperative assessment. The aims of the preoperative assessment are to reduce the risks associated with surgery and anaesthesia, to make the cost effective use of preoperative care, to restore the patient to the desired level of function and to obtain the patient’s informed consent for the anaesthetic procedure.7 Most patients admitted for elective surgery undergo a battery of preoperative tests, many of which they may not need. Such tests have been part of preoperative clinical practice for many years. Professional associations have repeatedly stressed that, “there is no scientific evidence to support the widespread use of chest radiography or ECG in asymptomatic patients”8 “the blanket routine preoperative investigations are inefficient, expensive and unnecessary”6 “no investigations are required prior to minor surgery in otherwise healthy patients”8 and “a focused history and physical examination can help identify potential medical and anaesthetic problems more efficiently and help anaesthetist use tests rationally”.6 Yet, most healthy people undergoing simple surgery are made to take these tests. Preoperative coagulation profile (that includes such insensitive and non-specific tests as bleeding and clotting time), chest radiography, ECG, and renal function tests can safely be omitted before simple surgery.10 Contrary to popular perception, abnormal findings, unexplained by history and physical examination, seldom influence subsequent anesthetic and surgical management, and may harm the patient in several ways; they make patients anxious, prolong the waiting time for operation, and increase the cost of preoperative assessment. When such tests are done on asymptomatic people, there is a higher likelihood of false positive results, which may potentially outweigh the benefits of screening. False positive tests are known to generate further tests the cascade of chaotic confusion!7

Published research indicates that close to two thirds of the preoperative testing is unnecessary, if a proper history and physical examination are done.11 Selective ordering of tests, according to the patient’s needs, is safer and better for the patient and the health care system. By ordering a routine battery of tests, clinicians violate the second and third principle of medical ethics do good, and do not harm.

Patients need art and science

The challenge for anesthesiologist is to provide ethical and evidence based counseling that respects and acknowledges the patient’s values in the process of preoperative assessment. The anaesthetist’s preoperative visit to the patient creates trust, inspires confidence and establishes a bond between them. The preoperative visit is the time to discuss the choice of anaesthetic method in the light of the patient’s preferences, his or her clinical state, the operation itself and the anaesthetist’s preferences and special skills.10

Fear and anxiety before operation is worldwide. A text book of medicine vividly paints the scenario of a busy hospital, “the modern hospital constitutes an intimidating environment for most patients. Lying in a bed, surrounded by air jets, buttons and lights; invaded by tubes and wires; beset by the numerous members of the healthcare team, nurses, physicians, technologists, medical students, house officers, and many others; transported to special laboratories and imaging facilities replete with blinking lights, strange sounds; and unfamiliar personnel it is little wonder that patients may lose their sense of reality. In fact, the physician is often only tenuous link between the patient and the real world and the strong personal relationship with the physician helps to sustain the patient in such a stressful situation”.2

Patients may have several doubts and questions explicit and unvoiced- about anaesthetic care and operation which need to be identified, and addressed, before their informed consent for operation is obtained. For example, patients might want to know how will they get to theatre, what will be experienced in the anaesthetic room or in the recovery room; how shall they be put to sleep, what time the operation is scheduled; how shall they wake up and how postoperative nausea, vomiting and pain will be
managed. If the anaesthesiologist is in training, the patient will want to know that the consultant has assessed that the trainee is competent enough to administer anaesthesia and that the consultant will be around, “just in case”. There should be as few surprises as possible, for surprises in the peri-operative period are alarming.6

EBM acknowledges that evidence alone is never sufficient to make a clinical decision; values are as important in clinical decision making process. As Guyatt and Rennie so succinctly put it, “Knowing the tools of evidence based practice is necessary but not sufficient for delivering the highest quality of patient care. In addition to clinical experience, the clinician requires compassion, sensitive listening skills, and broad based perspectives from the humanities and social science. These attributes allow understanding of patient’s illnesses in the context of their experience, personalities, and culture. A continuing challenge for EBM will be to better integrate the new science of clinical medicine with the time honoured craft of caring for the sick.”12

References
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