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Perspective

Medical futility in the era of evidence-based medicine

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One definition of futility is any treatment that merely preserves permanent unconsciousness or fails to end total dependence of a patient on intensive medical care[1]. However, no agreement has ever been reached on what the exact definition of futility is, as it is not only based on temporary values but also evolves into different subtypes, making it harder to define[2]. The difficulty in dealing with futility problem is how doctors evaluate the futile situation, which is further complicated by lack of standards for specific diseases and experience-based prognosis, leading to subjectivity in evaluation for futility.

Since judgment and decision making by physicians play an overwhelmingly dominant role in the estimation of futility, evidence-based medicine (EBM) should be included as a general guideline, incorporating individual experience and the best current evidence[3]. EBM draws heavily from current research findings-especially from large randomized control trials (RCT)[4]. Furthermore, this concept is evolving with the deepening and development of research, being an evolution itself. However, it is worthwhile to point out that EBM only predicts the effectiveness of an intervention by adjusting the earlier conclusion according to the newest results of recent research, but it cannot work in every particular case even in an approximation formula[5].

Cardiopulmonary resuscitation (CPR) in the intensive care unit (ICU) is likely a futile exercise if indiscriminately practiced in patients, especially those who are unlikely to survive to hospital discharge. Despite the widespread use of do-not-resuscitate (DNR) orders, introduced nearly a half century ago, the outcome following CPR has not been substantially improved[6]. Therefore, evidence-based selection of patients who will benefit from CPR is of paramount importance in avoiding medical futility. CPR is predicated on the assumption that CPR will be successful in maintaining the sacred life of a patient; to guard against its indiscriminate and sometimes excessive use, we should garner clinical evidence through clinical trials and development of prediction models and scoring systems such as the Good Outcome Following Attempted Resuscitation (GO-FAR) score to guide physicians in making informed decision on the use of CPR[7]. On the other hand, the DNR order requires patient consent to prevent a medical procedure from being performed; many patients or surrogates may overestimate the effects of CPR[8] and may oppose a DNR order by the physician.

Clinical studies are mainly classified into two categories: studies that confirm that treatment in a specific situation is futile, meaning that the result supports the futility diagnosis, and studies that show potential effectiveness of a treatment, meaning that the result refutes the futility diagnosis[9]. Futility usually focuses on two principles–improving the rate of survival and the quality of prolonged life[9]. Physicians may consider whether further intervention will abide by the two principles, and if not, futility ensues.

However, sufficient and conclusive data from EBM, to some extent, is still lacking. Before conclusive data becomes available from EBM, physicians may have to rely on existing guidelines and professional judgment with consideration of patient autonomy to make an informed share decision in cases where medical futility may occur.

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