Commentary

Cardiopulmonary resuscitation: charting a course for the future

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Introduction

Imagine you have a choice. Tomorrow, you can either be dead, or you can choose a 1% chance of survival. For most of us, it’s an easy decision; the odds of survival aren’t good, but they are better than certain death. Now imagine that you are trying to persuade a patient not to receive cardiopulmonary resuscitation (CPR). ‘It almost certainly would not work, would only prolong the dying process,’ you explain. But CPR could work: there is perhaps a 1% chance of surviving to see another day. Why would patients choose not to receive it? However, despite most people’s clear preference for continued life, the collective experience of clinicians is that CPR should not always be performed, and in many groups of patients, should only rarely be attempted. Individual physicians are required to respect this experience, while at the same time maintaining a high-quality doctor-patient relationship and providing realistic choices to seriously ill patients.

The current climate

The preference not to provide CPR in many circumstances exists for good reasons. I remember clearly my first night working in the emergency department as a second year medical student. A very frail man suffering from cardiac cachexia and severe COPD arrived soaked in sweat and labouring to breathe. He became unconscious as he entered the final stages of dying. ‘Do you want us to resuscitate him?’ the family was hurriedly asked in a back room, away from his suffering. ‘Yes,’ they replied. I remember his eyes as he looked about uncomprehendingly after he was intubated and regained consciousness. He died a few days later in the intensive care unit (ICU). Life sustaining technology is seductive. What was happening had seemed completely wrong, but this perception lessened when I took hold of the ambi-bag and breathed life back in his sodden lungs.

Although patients may not know, and physicians may prefer not to discuss it, a decision about CPR is often automatically made at the time of admission to hospital, and that decision is to resuscitate. This widespread administrative policy sends a very clear message to patients, their family members, to physicians and to society at large: ‘This treatment is something you are entitled to.’ Consequently, arguments by physicians that a patient should not be resuscitated are invariably defensive, centered around patient rights, and characterized by a requirement to maintain some hope.

The attraction of doing nothing

For practicing clinicians, decision-making is seldom without risk. In Ontario, Canada, in 1998, a physician was reprimanded for professional misconduct, and sent for communication skills training for unilaterally writing ‘no code’ and ‘for comfort care’ orders for a dying patient, and then failing...
to communicate this to the family members. The patient was elderly, frail, and bedridden, and suffered from multiple spinal compression fractures. Before death she chose not to eat, drink, or take medications, surely a situation in which death could be the only outcome, and yet the physician was given the harshest penalty available to the discipline committee for ordering care many would construe as compassionate.

Given the current environment and the potential to regret any explicit decision about CPR, it is hardly surprising that avoidance of decision-making is the approach preferred by the majority of registrars and many consultants, even in geriatrics, where the issue is not only highly relevant but specifically taught. Encouragingly, however, some consultants routinely establish code status on 80% of patients. Further study on the practice habits of this group could be very fruitful.

**CPR: efficacy and morbidity**

The efficacy and cost-effectiveness of CPR is a central issue for those caring for patients admitted to the general medical and geriatric wards. Such patients are often frail, and are very likely to die unobserved. In a Canadian study highly relevant to ward-based practice, arrest characteristics of patients admitted to a non-critical care bed were determined: witnessed vs. unwitnessed, cardiac vs. respiratory. No patients found dead survived, and patients whose arrest rhythm was pulseless electrical activity or asystole were 21 (95% CI 6.2–71) times less likely to survive. If patients are to have any realistic chance of surviving (or even better, avoiding CPR), monitoring or continuous observation are required. This step greatly increases the likelihood of the patient being found suffering from (and surviving) a respiratory, rather than a cardiac, arrest. Recognition of these determinants of survival has given rise to the recommendation of a Limited Aggressive Therapy Order (LATO), which clarifies the conditions under which CPR would be attempted.

Absolute survival statistics aside, why should patients choose to forego CPR? The most logical reason is to avoid prolongation of the final stages of the dying process, an outcome commonly feared and unwanted. Of 100 patients who suffered an unwitnessed respiratory or cardiac arrest, 20 were initially resuscitated. One survived to discharge, and this survivor suffered an unwitnessed respiratory arrest 5 min after being seen alive. However, explicit consideration of relative risk is overlooked both in the current literature and at the bedside.

More research is needed to determine not only the effectiveness, but also the cost-effectiveness of policies that require CPR to be performed upon patients found dead. CPR is part of a package of care that requires admission to the intensive care unit and a trial of life-sustaining treatments. No-one would argue for routinely offering liver transplantation in a group of patients whose survival was estimated at 1%. Livers suitable for transplant are rare, but so are intensive care beds, where patients frequently go to die. In the worst-case scenario, disagreement about stopping treatment can result in very distressing conflict between members of the health-care team and family members. One alternative to the current policy of full code by default would be to require an explicit order on general medicine or geriatrics wards for CPR to be undertaken (or to be continued beyond a very short period of time) on a patient who is found dead. An algorithm for stopping CPR has been developed and validated.

**Opportunities for the future**

Despite these problems in assessing appropriateness of CPR, the current situation is far from intolerable. Physicians are seldom sued or disciplined for providing or failing to provide CPR, (the case of the physician from Ontario that I mentioned earlier is exceptional) and the vast majority of patients die without suffering a pointless attempt at CPR during the final stages of their dying process. However, improvements in addressing goals of care and treatment options for seriously ill patients area could result in a ‘win-win-win’ situation: patients and their family members would receive more individualized care, physicians and other health-care workers would experience improved job satisfaction, and the health-care system would deliver care more congruent with the needs of dying patients. I have categorized opportunities for improvement in this area under the broad headings of philosophical, linguistic and structural. These three elements are dependent upon the three ‘C’s of effective clinical practice: compassion, communication, and competence.

**Philosophical changes**

Physicians need to integrate decisions about CPR into a broader context. A patient who needs their code status to be decided is usually at some risk of dying in the near future. Consequently, assessment of code status should trigger a more global approach to end-of-life care issues. It has been proposed that if one would not be surprised if a patient died within
the next 6 months, palliative and comfort-care goals should be identified and pursued. When medical residents asked themselves this question, many recognized the need for integrating palliative care. Code status may be established early on, but ‘comfort care’ orders can be written only days or even hours before death. Recently I reviewed the chart of an elderly patient, bedridden with pressure sores suffering from severe aortic stenosis. The plan to rehabilitate the patient lacked consideration of the only potentially effective treatment (aortic valve replacement) and the compassionate awareness that these days in hospital were very likely to be the patient’s last. This gap in care is sadly, very common.

One way to effectively integrate end-of-life care into discussions about CPR is to routinely assess patients’ hopes and fears for the future, and invite them to discuss their goals of care at admission. In a small study, this was both effective and accepted. Honestly talking with patients about end-of-life care is consistent with the preferences of many patients, and is appropriate at many points, since disease severity does not predict the desire of patients to have end-of-life discussions. Asking patients whether they would like to talk about their treatment goals or not (as suggested by Harkness in this issue) is a useful approach to avoid burdening severely ill patients who may already be suffering from diminished capacity. Integrating palliative and curative goals is essential if patients are to receive end-of-life care for the majority of their terminal hospital admission. After goals are established, the technology that could support them can be determined.

**Linguistic pitfalls**

Current language confuses the debate about ‘do not resuscitate’ (DNR) orders. For example, ‘Do patients have the right to demand treatment?’ is a very different question from ‘Do patients have an unqualified right to receive treatment upon demand?’ The answer to the first is clearly ‘yes’, the second clearly ‘no’. Myint et al. observed that guidelines required patients to be involved in shared decision-making, but that fewer than half of respondents found such guidelines to be useful. In fact, physicians can communicate but not ‘share’ the expert decision that CPR is not indicated for a particular patient. Seeking ‘consent’ for withholding CPR implies efficacy, since it makes no sense to seek consent to withhold ineffective treatment. Individualized decision-making is an integral aspect of clinical medicine.

Unthinkingly involving patients in decision-making can result in vigorous efforts to help them make the ‘right’ decision. It has even been suggested that the whole process of informed consent exists to steer patients to available options, rather than to genuinely support choice. Ideally, once an offer of CPR is made or implied, it should be provided without dissent, but I suspect the majority of demands for CPR arise after a failed attempt to ‘share’ the decision to withhold it.

As an alternative to informed consent, physicians may seek assent for withholding CPR by informing the patient (and family) that at this point that CPR or admission to the intensive care unit would only prolong the dying process. Central to this position is distinguishing intentions from desires. To label life-sustaining treatment as ‘inappropriate’ or ‘futile’ is unhelpful and confusing. Determinations of non-efficacy must be recognized as ‘bad news’ rather than shared decision-making. That the patient cannot be saved by medical technology should be conveyed carefully, and with the focus upon emotions rather than the technology. After emotional support has been provided and a care plan established, family members could be informed that a DNR order will be written.

A simple approach to whether a determination of non-efficacy is defensible (but not infallible) is to consider whether one’s colleagues and peers would agree. If the answer is clearly ‘yes,’ then one could present CPR as an ineffective option. Disagreements between physicians and patients or their proxy decision-makers about efficacy can be addressed, if not resolved, by obtaining second opinions and referring to relevant prognostic studies.

**Structural changes and other improvements**

It is very encouraging that many trainees make suggestions for the future. Clearly, current medical practice has become in some ways antiquated, and needs to evolve. I often review charts and find family histories for patients in their 70s and 80s, as if the fact their parents died of coronary artery disease were relevant to their care. This and other irrelevant or easily available information is routinely gathered, while the assessment of goals of care, impact of illness, and treatment preferences is deferred or not done at all. Given the plethora of treatment options and technologies available, it is easy for medical treatment to be done to, rather than for, patients.
The routine assessment of resuscitation preferences and goals of care at or around the time of admission is both possible and appealing. Such a change is entirely within the domain of the medical profession, and would be consistent with current legal and ethical requirements. It could also function as a targeted educational intervention, since hospitalization precedes death for the vast majority of patients.

 Routinely inviting patients to talk about CPR, could also address the common practice of discussing CPR with proxies rather than patients, as described by Myint. Two reasons come to mind for this practice. First, physicians may defer discussion until decision-making capacity is lost, because this change often signals the final stages of the dying process. Second, some seriously ill patients may have an unvoiced preference not to discuss such treatments, and that this preference may be unconsciously respected. However, despite these reasons, a clearly stated patient preference not to discuss end-of-life care or CPR would support this practice.

 Skills would need to be developed to ensure that CPR discussions did not simply fulfill administrative criteria, as occurred after the Patient Self Determination Act was introduced in the US 1991. This act requires that patients be told of their right to refuse treatments and direct their care. Implementing it, even in concert with the landmark SUPPORT study, a massive study intended to improve end-of-life care, resulted in no significant changes in clinical practice or DNR decisions.

A course for the future: back to the past?

If we are to improve end-of-life care and enhance meaningful patient involvement, it is essential that physicians return to patients, not technology, as a central focus of care. Genuine compassion-driven curiosity offers much to both patient and doctor. ‘What do you think? How do you feel about what is happening to you? What do you hope we can do for you? Have you thought about the possibility that you could die from this illness?’ As Osler observed, ‘it is more important to know what kind of patient has a disease than what kind of disease a patient has.’

Mortality looms and humility in the face of death is an integral aspect of medical practice. A retrospective look at Erasmus Darwin, the pre-eminent British physician of the 1700s, speaks directly to the need to acknowledge and anticipate that for all patients, with or without CPR, at some point death will become inevitable. ‘Darwin had no magic potion for his patients, he said nearly all nostrums were useless and only opium could be relied upon . . . he won his patients through his sympathy, powers of observation and ability to diagnose and predict the course of a disease.’ Physicians who must determine goals of care and share their decisions with patients and their family members would do well to remember his example.

References

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