

HOW FAR IS ENOUGH IN THE INTENSIVE CARE UNIT?

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Intensive care units (ICU) are often cited as prisons of technology, where patients with futile outcomes are kept alive needlessly and at great expense, sustained in a limbo of dying. Modern intensive care practice has the capability to sustain patients with multiple organ failures for extended periods of time, and in the case of neurological failure, eg vegetative states, for a substantial period of time. As a result, physicians are accused of insensitivity as they continue to maintain life at all costs to the potential detriment of the patient's dignity even as they die. Futile treatment is thus a waste of expensive resources and the act of ultimate torture. The challenge in the modern ICU is learning how to deal with the ethical issues that dictate the withholding and withdrawal of organ support⁽¹⁾. The responsibility of deciding and counselling family members about such matters weigh heavily, on the intensivist. But it is a responsibility that cannot be avoided if our oath is to be honoured and the precious trust that the public has placed in our hands is to be upheld. We *have* to care.

Attempts to limit or withdraw therapy in the intensive care unit have been fueled recently by the rising health-care costs, and the public's understanding of the limitations of modern medicine to cure, plus the emphasis on the patient's dignity and quality of life. Sustaining life at all costs as the objective is slowly being changed to maintenance of the "personhood". It is thus interesting to note that nearly two-thirds of the ICU deaths at University of Pittsburgh, which has the largest collection of ICU beds in one centre in the world, resulted from the withholding or withdrawal of life-support (author, personal communication). Another study from San Francisco involving 2 hospitals showed that nearly 90% of their ICU deaths resulted from withholding or withdrawal of life-support⁽²⁾. This represented a big change from 5 years ago when the two hospitals had figures of 27% and 76%. This pattern of active withdrawal as the most common mode of death in the ICU has also been reported for the paediatric population⁽³⁾. These practices are in stark contrast to the current scenario for Singapore, where withholding or withdrawal of care are rare occurrences. The reason for this difference is important to identify as we become cognizant of the limitations of modern medicine.

Is there a difference between withholding and withdrawal of care? The Bioethics Task Force of the American Thoracic Society (ATS) has claimed that there is no ethical difference between the two⁽⁴⁾, although a survey of medical students, house-staff and faculty members of University of Miami

showed that a majority felt that withdrawing treatment was different from withholding⁽⁵⁾. Nearly half the critical care practitioners surveyed at the Society of Critical Care meeting in 1988 held the opinion that withholding and withdrawal were the same⁽⁶⁾. A survey conducted among nurses and pharmacists at the National University Hospital, Singapore had previously demonstrated that 73% made a distinction between withholding and withdrawal of life-support, with 10% undecided (author, personal communication). This therefore implies that in Singapore at least with our limited data, one should distinguish withholding from withdrawal of life-support. Whether further education could reduce this perceived difference remains to be seen.

Physiological correction alone as the sole goal of physicians ignores the patient as a person, and relegates doctors to mechanics, neglecting the motivation that underscores the act of doctoring, viz. the desire to do good for the patient. Most people are not afraid of death. Instead it is the process of prolonged dying and its attendant suffering that is dreaded and feared.

Healthcare reforms have made us examine the cost of various therapies, including the care that is provided in the ICU. ICU beds are the most expensive to maintain with the highest nurse-to-patient ratio, and this is reflected in the estimated \$50 billion a year (1% of the American gross national product) that is spent on the American ICU care⁽⁷⁾. These services, however, have become routine for certain postoperative patients, and also for a variety of critically ill patients. However, other groups of patients may not benefit from the expensive ICU care as they already have end-stage disease and are in the terminal throes of death. The difficulty lies in trying to decide who should be admitted to ICU and when further ICU care is futile⁽⁸⁾. These decisions have to be based on some ethical position⁽⁹⁾. Our ethical position can be defined as one of several approaches: pure autonomy, benefits versus burden, or pure utilitarianism. This idea of rationing health care resources raises fundamental conflicts challenging the long-held assumption of the physician's role in serving the patient exclusively, and instead portrays them as key agents in resource allocation⁽¹⁰⁾. Also, should escalation of healthcare costs be an important factor in influencing our decision to utilise such therapies at all?

Perhaps symptomatic of this problem of the technological approach to medicine is the rallying cry that, "My doctor doesn't listen to me." Modern medicine emphasises the science of medicine in the pursuit of excellence. Hospitals have become research institutions, as the *god of science* was applied to all that ails mankind. Selecting medical students based solely on academic ability alone without consideration of their desire to care, ignores the humanistic aspects of medicine. The human face of medicine has been masked by the technological "gizmos" that accompany any patient-physician contact. The ability to listen, comfort, console,

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empathise, and cry with patients and their relatives is not part of the medical student's curriculum. These are not deemed "billable" activities, compared to endoscopic procedures or surgical intervention. As physicians, we have depersonalised our encounters with patients, hiding behind technology. The question of how far therapy should continue in ICU is determined purely by physiological derangements, and frequently neglects the patient's dignity and wishes. This is further exemplified by referring to them as diagnoses, laboratory values, or X-ray images. As physicians, we need to re-discover our humanity.

When considering whether to terminate treatment, several questions need to be considered⁽¹¹⁾. The first is a medical question which demands the specialised knowledge of a physician. This entails an accurate diagnosis to be made as this will determine the prognosis to a large extent.

Making a diagnosis is fundamental in the practice of medicine. Without a diagnosis, the brain death criteria cannot be applied. Without a diagnosis, the death certificate cannot be signed without referral to the coroner for autopsy. Withdrawal of life-support should appropriately be considered for a patient in coma due to massive intracerebral haemorrhage, but is totally inappropriate for a coma state induced by alcohol overdose. It is therefore incumbent upon the physician to be as certain about the diagnosis as possible before advising the withdrawal of life-support.

What is the chance of the organ dysfunction or failure recovering? Take for example, the neurological prognosis in comatose survivors after cardiac arrest. With the advent of cardiopulmonary resuscitation, many patients, especially after myocardial infarction with "hearts too young to die", have been saved. However, certain patients may have a re-establishment of their circulation but remain comatose post-arrest. What predicts a poor outcome, and how long must one support these patients before their outcome can be determined? Numerous predictors have been examined: they include the Glasgow Coma Score^(12,13); combined Glasgow-Pittsburgh score^(13,14); APACHE II scores⁽¹²⁾; spinal fluid enzymes, lactate, and pyruvate^(14,15); various aspects of the neurological examination^(13,16); and evoked potential measurements⁽¹⁷⁾. In a multi-centre study, patients who were still unresponsive to pain on the third day remained permanently comatose or severely disabled even at 12 months post-arrest⁽¹³⁾.

Large studies⁽¹⁸⁻²¹⁾ have examined severity of illness in critically ill patients, and have tried to validate outcome as measured by mortality. It is important to realise that outcome studies are statistical analyses on large populations, and for the individual patient, a probability of 0.4 for death does not mean certain death or recovery. Therefore, using severity of illness scores like APACHE II⁽¹⁸⁾ or III⁽¹⁹⁾ to predict outcomes in order to decide on the withdrawal of life-sustaining support becomes a self-fulfilling prophesy. This means that severity of illness scores should not be used as sole indicators for decision making. Furthermore, analysis comparing only two possible outcomes (life or death), is too simplified, and neglects the concept of quality of life. The patient may not wish to live, if that meant a vegetative state, necessitating constant intensive care. It is therefore vital to assess the quality of life following severe illness separate from mortality data⁽²²⁾. A new model (SUPPORT Prognostic model) has been developed to predict the functional status 2 months after hospitalisation for serious illness⁽²³⁾. This may be a more useful adjunct for decisions that rely on quality of life decisions when deciding on withholding or withdrawal of

care.

Other medical issues include decisions on what type of treatment should be withheld or withdrawn. Should it be mechanical ventilation, pressor support, antibiotics, dialysis, cardiopulmonary resuscitation, intravenous fluids or nutritional support? Are these interventions futile in prolonging life or futile in terms of overall benefit to the patient?⁽⁸⁾.

The second question relates to patient factors. Is the patient competent (intact decision-making capacity)? What were the patient's wishes (advance directives, living will, previously expressed desires) with regards to type of treatment or life's goals? Having advance directives appear to be very important as they heavily influenced the mode of ICU deaths as demonstrated in the San Francisco study⁽²⁾. The contention that the Singaporean public has a more paternalistic patient-doctor relationship compared to the West and is thus less likely to make their own decisions about withholding or withdrawal of life-support is unstudied. Judging from letters written to the newspapers and direct patient contact, I would hazard a personal opinion that the Singaporean public is willing to discuss these issues and wants to do so given the right climate.

The third question are contextual factors. Are there any designated surrogate decision-makers (durable power of attorney, guardians, next-of-kin)? Are all family members in agreement, and are all the healthcare providers in agreement? Should ethics committee, hospital administration, or hospital counsel be involved? Are there any legal issues, or conflicts of interest (organ donation, financial, rationing of resources)? Institutional ethics committees have been advocated as a good way to resolve complex ethical issues, and at the Veteran's Administration Hospital in Oakland, Pittsburgh it is mandatory to obtain an ethic's consult before withdrawal of care can be instituted. This is seen as a method of protecting the hospital from future potential litigation if disagreement arises. Current debate revolves around the possibility of providing a shield of immunity from litigation for such committees' decision⁽²⁴⁾.

In summary, trying to decide how far is enough for life-sustaining therapy in the intensive care involves numerous issues. It calls for physicians to be at the cutting edge of technology and medical knowledge. Much research is needed to improve prognostication. Better resuscitation is needed to improve outcome (hence cardiopulmonary *cerebral* resuscitation). Physicians need to remember that their actions should be *good* for their patients⁽²⁵⁾, as determined by the patient and not restricted to the correction of physiological derangements. Issues of life-sustaining treatment should be discussed when the patient is competent, and they should be allowed to express their own desires - being alive is not a sufficient objective by itself, instead personhood and quality of life issues should be addressed⁽²⁶⁾. The difference in withholding or withdrawal of life-support should be discussed. Rationing, especially purely based on age criteria alone⁽²⁷⁾, and financial considerations should not form the basis for the continuation of care. A strong ethical and humanist emphasis in physician education is needed, as is the role of an intensivist to provide leadership in this critical area⁽²⁸⁾. Physicians have to take the lead in addressing these issues now and determine the basis and mechanisms for the limitation of care in ICU. This is not a problem of the West. If not, they will inevitably have their decision and autonomy stripped away by administrators and accountants whose main concern will purely be cost and reimbursement.

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