Medical futility: a commonly used and potentially abused idea in medical ethics

Hospital doctors frequently invoke the idea of medical futility in making decisions regarding end-of-life care. This concept of futility will be reviewed and the differing definitions and how it relates to other important principles in biomedical ethics discussed.

Medical futility is a difficult concept to succinctly define. Broadly speaking, it refers to any medical treatment that is 'unlikely to achieve its desired aim, and thus to justify a medical judgement not to provide life prolonging treatment' (Higgs and Pinching, 1997). Medical practitioners have used this concept in many guises since the beginning of health-care provision. Hippocrates recognized the concept and advised that physicians should 'refuse to treat those who are overmastered by their disease, realising that in such cases medicine is powerless' (Whitmer et al, 2009). Health-care providers are often faced with difficult decisions regarding end-of-life care in the context of an aging population and the increasing availability of new drugs, techniques and technologies that can sustain life. While it may not always be explicitly defined, the concept of futility is often implicit in the decisions that health-care workers make in such cases. This article reviews the literature published on this topic. The difficulty defining the concept will be discussed along with its implications and relationship to the other common principles of biomedical ethics (Beachamp and Childress, 2009).

Defining medical futility

Quantitative and qualitative futility

It is important to attempt to clearly define what is meant by the term medical futility. This is especially important in the increasingly litigious medicolegal environment in which medicine is now practiced. In practice, decisions which rely on the application of medical futility in a particular clinical situation are often subjective and dependent on individual physician discretion. Having a clear working definition will allow these decisions to be more transparent and help patients or surrogate decision makers to make better informed choices regarding end-of-life care.

Various authors have attempted to define futility in differing ways. Schneiderman et al (1990) described the terms quantitative futility and qualitative futility. Quantitative futility pertains to any treatment that has been shown to be useless in the last 100 cases, based on individual physician experience, collaboration with colleagues or published data. Gampel (2006) characterized this concept of futility as being when the statistical chance of success for a treatment are so slim as to 'not justify attempting the treatment'.

Mr Richard J Thompson *is Specialty Registrar in General Surgery, Northern Ireland Medical and Dental Training Agency, Craigavon Area Hospital, Portadown BT63 5QQ*

Qualitative futility refers to a treatment which merely preserves permanent unconsciousness or that fails to end what Schneiderman et al (1990) describe as 'total dependence on intensive medical therapy'. It relies on an implicit judgement of the expected quality of life after a particular treatment. Schneiderman et al (1990) argue that these two aspects of futility should be considered independently when faced with a clinical decision. If the minimum threshold of either cannot be achieved by a particular treatment, a physician is under no obligation to provide it and it may be regarded as futile.

There is no doubt that any attempt to define futility must consider both quantitative and qualitative factors, but there are a number of criticisms of this model. The strict statistical definition of quantitative futility outlined above may be very difficult to apply practically. End-of-life decisions are very often made on a specific individual case-by-case basis with multiple factors influencing the clinical situation. There may be insufficient published evidence (Gampel, 2006) or the physician may have insufficient previous personal experience to be able to apply the statistical threshold for quantitative futility.

The definition given for qualitative futility is implicitly subjective. Rather than focusing on objective facts, this concept of futility inherently involves questions regarding the value of the end results (Gampel, 2006). For instance the terms 'total dependence' and 'intensive medical therapy' used in the definition by Schneiderman et al (1990) are both open to subjective interpretation (Moratti, 2009). In applying this qualitative measure of futility, Schneiderman et al (1990) make some conclusions that may not be justified without further qualification or correlation with several other important principles of biomedical ethics (Beachamp and Childress, 2009). Schneiderman et al (1990) state that a patient 'has no right to be sustained in a state in which he or she has no purpose other than mere vegetative survival'. Some families and patients, however, may argue that the continuation of human life under any circumstance is of intrinsic value (Gampel, 2006) and what they consider to be futile may be greatly influenced by numerous cultural, ethnic and religious views. A potential conflict may therefore arise because of the subjective nature of this definition of futility. Ultimately the conclusions that Schneiderman et al (1990) have made may be correct, but on prima facie reasoning from this definition of qualitative futility alone they are not justified.

Physiological futility

The strict definitions of futility discussed above have been criticized by various authors. Waisel and Truog (1995) used the context of 'do not resuscitate' orders to discuss an alternative concept of futility that they described as physiological futility. They argue that in order to define futility you must first determine the physiological objective of a particular treatment. It introduces the idea of a goal-orientated definition of futility such that a treatment should only be considered futile if it can be shown to be unable to achieve the specific goal at which the treatment is aimed (Mohindra, 2007).

This definition of physiological futility aims to address the potential problems associated with the imposed value judgements and imprecise definitions of quantitative and qualitative futility and the limitation that any treatment goal must aim to improve a 'patient's prognosis, comfort, well-being or general state of health' (Schneiderman et al, 1990). This is a much broader understanding of the concept and recognizes that not all treatments are necessarily aimed at prolonging life. It has been explored and expanded upon by various authors (Brody, 1998; Trotter, 1999). There may be other worthwhile goals that a treatment may achieve that would mean it should not be considered futile with respect to that goal, while it may have been regarded as futile on a more limited definition.

This idea has been further explored by Mohammed and Peter (2009) who discussed other potential benefits of cardiopulmonary resuscitation and intensive care treatment for terminally ill patients. They argue that using a broader understanding of treatment goals means that other factors such as the wider social value of treatments may be as important in evaluating futility as the biomedical criteria normally used to determine treatment efficacy. They argue for instance that allowing families to witness the gradual decline of a patient in an intensive care setting with a step-wise, orchestrated withdrawal of treatment has an important ritualistic type role, above and beyond the clinical role. This may allow the family, and the patient if he/she is conscious, to come to terms with the dying process and to see for themselves that further treatment is becoming more futile.

Wreen (2004) outlined a number of other potential categories of treatment goals, in addition to the obvious biological goals of most treatments, that may also be worthy of consideration. These are aesthetic (e.g. cosmetic surgery), axiological or hedonic (e.g. analgesia for relief of pain), personal (e.g. birth control) and psychological (e.g. antidepressants) goals. Spiritual goals may also be important to certain patients and families, particularly in the context of end-of-life decisions.

Imminent demise and lethal condition futility

Brody and Halevy (1995) also discussed two other understandings of futility: imminent demise and lethal condition futility. These two similar ideas are essentially an extension of the previously discussed idea of quantitative futility. Imminent demise futility refers to conditions where it is deemed that the patient is going to die within a short period of time regardless of any intervention. Lethal condition futility refers to patients who have an underlying disease that is not compatible with long-term survival. Both of these understandings are open to the same criticisms of quantitative futility and rely heavily on the health-care worker having a good understanding of the statistical probabilities involved and making a subjective judgement about what constitutes 'long-term survival' or 'imminent'.

Futility and the other principles of biomedical ethics

The problems with applying the definitions of futility often arise from a conflict between the health-care worker and the patient or the family's understanding of the issues. Beachamp and Childress (2009) have defined four key principles of biomedical ethics: non-maleficence, beneficence, respect for autonomy and justice. These principles and how they specifically relate to the problems associated with the concept of medical futility are discussed below.

Non-maleficence and beneficence

The principle of non-maleficence is associated with the maxim 'primum no nocere', and states that health-care professionals have a duty not to inflict harm on others (Beachamp and Childress, 2009). With respect to the concept of medical futility this principle has a direct bearing as it relates to withdrawing or withholding potential life-sustaining treatments that have been deemed futile.

Beneficence is the related principle of biomedical ethics that states that health-care professionals have a moral obligation to act for the benefit of others (Beachamp and Childress, 2009). Non-maleficence and benificence are closely related yet the second concept appears to expand the moral obligation even further than the first. Non-maleficence first states that we should avoid harming patients. Beneficence goes even further and obliges that our actions are positively beneficial to patients. In the context of medical futility there are a number of problems that arise in relation to these important principles. It has been suggested that determining if a treatment is futile is basically to ask whether it meets the requirements of the principle of beneficence (Clark, 2001), however, in the context of futility there can be difficulties in even first defining beneficence.

Day (2009) indicates that the problems with determining a treatment to be futile often arise when there is a conflict between either the medical team and the patient or the patient's surrogate decision maker. These conflicts often come from a differing opinion regarding what constitutes benefit, burden or quality of life. Patients and families can also have a wide range of other goals as has previously been discussed (Wreen, 2004). These may not be the primary goal of the treatment, but if benefit is derived with respect to that goal then the test of beneficence has surely been met. Beneficence would dictate that we must act to do good for the patient, but what or who determines what constitutes 'good'? Day (2009) also suggests that there may be several conflicting goods with respect to a particular treatment, such as cure of disease, relief of symptoms and support of function. The difficulty is in determining which of these conflicting goods ought to be pursued. Similar difficulties may arise with respect to the principle of non-maleficence in defining what constitutes 'harm'. Some patients and families may argue that human life is sacrosanct and must be preserved and sustained at all cost and therefore withdrawing or even withholding any such treatment would for these people constitute a moral harm.

The question may be asked as to who is best placed to make decisions regarding benefits and harm with respect to treatments. In normal clinical situations the health-care professional ordinarily has the knowledge and experience required to make these decisions and offers treatment that he/she deems to be clinically appropriate according to the norms of accepted clinical practice and standards. It has been argued that discussions pertaining to end-of-life decisions and futility are uniquely different from other clinical decisions in several particular ways (Gampel, 2006). First, in futility cases, the treatment in question is usually the only treatment being considered, such that denying this treatment is to determine that the patient will die. Second, it may also be argued that a physician has no more expertise in making decisions relevant to futility than anyone else, since the options and consequences are reasonably easy to understand. Finally, Gampel (2006) argues that futility cases often involve over-riding values that are more of a religious or philosophical nature than a clinical nature. For these three reasons the author concludes that 'the question of futility is not one for which healthcare professionals should be the ultimate judge'. Furthermore, it has been shown by Zier et al (2009), in a survey of 50 surrogate decision makers for patients who were critically ill, that the majority (64%) doubted the accuracy of the physician's ability to make decisions regarding futility.

Respect for autonomy

Autonomy is the capacity to make deliberated or reasoned decisions for oneself and to act on the basis of such decisions (Higgs and Pinching, 1997). This is another fundamental principle of biomedical ethics, but it does not necessarily take precedence over the other key principles. Beachamp and Childress (2009) argue that a properly constructed view of respect for autonomy should view it as one principle in a framework of other principles of equal value. It should not be excessively individualistic (and thereby neglect the impact of individual choices on others and society), excessively focused on reason (and thereby neglect emotions) or be unduly legalistic (and thereby downplay social practices and responsibilities). Balancing this principle of respect for individual patient autonomy with the other principles such as non-maleficence and beneficence is one of the main issues in contemporary bioethics (Neibrój, 2006).

In the context of this discussion, the difficulties with respect for autonomy arise when a patient requests a treatment that the health-care worker may consider to be futile. There then arises a conflict of autonomy, that of the patient and that of the health-care worker. In first attempting to address this conflict, it must be realized that there may be many factors contributing to such conflicts. Patients or families may demand futile treatments for many reasons, including a misunderstanding of the issues, denial of the gravity of the situation (Gampel, 2006) and social or religious reasons (Neibrój, 2006; Starrs, 2006). Schneiderman et al (1990) argue that while patients have a positive right to refuse any treatment, they do not have the right to demand any treatment. This can be illustrated by the simple reductio of a patient demanding antibiotic treatment for a viral infection (Wreen, 2004). The physician is under no obligation to provide this clearly futile treatment.

Gampel (2006) illustrates how health-care workers also make decisions, in the context of their own professional autonomy, which are influenced by a variety of factors including their own moral preconceptions and obligation to maintain their own moral integrity. There are also accepted standards of care and levels of professional self governance which strongly influence clinical decisions such that in cases of futility there may be treatments that the wider medical profession regard as contrary to these accepted standards and as such may be deemed futile. Gampel (2006) reasons, however, that this argument in support of medical professionals not providing what they deem futile treatment out of support for their professional autonomy cannot trump the patient's autonomy. This view is supported by the reasons previously outlined which mean that health-care workers are in no better a position to make decisions regarding futility than anyone else. Wreen (2004) also argues that physician discretion cannot be used to support unilateral decisions regarding medical futility. Wreen criticized previous arguments from Brody and

Halevy (1995) that advocated physicians making such unilateral judgements about medical futility as they considered it a purely technical matter that the physician is uniquely qualified to make. This has been shown to be fallacious for the reasons outlined above (Gampel, 2006). Wreen concludes that for physicians to 'arrogate such decisions to themselves just because of their medical expertise, is itself a violation of professional integrity'.

Justice

The principle of justice in biomedical ethics refers to the fair, equitable and appropriate distribution of health-care resources in the population (Beachamp and Childress, 2009). In the context of medical futility, some people may use this principle of distributive justice to argue that society cannot afford to provide treatments which have no benefit to the patient (Whitmer et al, 2009). Others have argued that this is a question of health-care rationing which is a separate issue and should not be used as a factor in determining if a treatment is futile (Tan et al, 2003). Day (2009) also indicates that questions regarding equitable use of resources often arise in the critical care setting and that health-care providers often privately struggle with concerns over this issue. This is undoubtedly a difficult issue and one that warrants further discussion and debate in the biomedical ethics community but is beyond the scope of this article.

Conclusions

Medical futility is an extremely difficult concept to define. The problems associated with the definitions of quantitative, qualitative and physiological futility have been discussed. Perhaps a better way to determine if a treatment is futile is first to look at the specific goal at which the particular treatment is aimed and use this as the frame of reference for determining if it is futile. This also provides scope for the consideration of a broader range of potential goals that may also be important in issues pertaining to end-of-life decisions including personal, cultural and spiritual goals. Furthermore, the importance of and inherent difficulties with making decisions regarding futility in light of the other key principles of biomedical ethics have been discussed.

Such decisions should not be the task of physicians alone as they are not ones which health-care professionals have any specific expertise in making. It is good clinical practice that such decisions are made in a wider multidisciplinary context rather than by an individual physician as well as involving the patient and the family as appropriate. This is a move away from the traditional paternalistic approach to such decision-making. In determining policies and procedures regarding futility, health-care providers must consider all of these factors alongside the issue of justice, while trying to keep such discussions distinct from the rationing of resources, which is an ethically separate issue. What is apparent is that there is no ethically defensible scope for health-care workers to make a unilateral decision regarding such treatments. It is vital, as in all aspects of clinical practice, to maintain good communication with the patient and the family in order to deal with any conflicts that may arise in these circumstances. This is particularly important in such cases where the only alternative to the treatment being considered is that the patient will die. **BJHM**

Conflict of interest: This review was undertaken as part of a MSc in Advanced Surgical Practice with Cardiff University.

Beachamp TL, Childress JF (2009) *Principles of Biomedical Ethics.* 6th edn. Oxford University Press, Oxford

Brody H (1998) Bringing clarity to the futility debate: don't use the wrong cases. *Cam Q Healthc Ethics* **7**(3): 269–73

Brody B, Halevy A (1995) Is futility a futile concept? *J Med Philos* **20**(2): 123–44

Clark PA (2001) Building a policy in paediatrics for medical futility. *Paediatr Nurs* **27**(2): 180–4

Day L (2009) Medical futility, personal goods, and social responsibility. *Am J Crit Care* **18**(3): 279–82

Gampel E (2006) Does professional autonomy protect medical futility judgments? *Bioethics* **20**(2): 92–104

Higgs R, Pinching AJ (1997) *The new dictionary of medical ethics.* BMJ Publishing Group, London

Mohammed S, Peter E (2009) Rituals, death and the moral practice of medical futility. *Nurs Ethics* **16**(3): 292–302

Mohindra RK (2007) Medical futility: a conceptual model. *J Med Ethics* **33**(2): 71–5

Moratti S (2009) The development of "medical futility": towards a procedural approach based on the role of the medical profession. *J Med Ethics* **35**(6): 369–72

Neibrój LT (2006) The influence of religious beliefs on healthcare: between medical futility and refusal of treatment. *J Physiol Pharmacol* **57**(Suppl 4): 241–9

Schneiderman LJ, Jecker NS, Jonsen AR (1990) Medical futility: its meaning and ethical implications. *Ann Int Med* **112**(12): 949–54

Starrs JM (2006) The medical futility debate: treatment at any cost? *J Gerontol Nurs* **32**(5): 13–16

Tan SY, Chun B, Kim E (2003) Creating a medical futility policy. *Health Prog* **84**(4): 14–20

Trotter G (1999) Response to "Bringing clarity to the futility debate: don't use the wrong cases" by Howard Brody and "Commentary: Bringing clarity to the futility debate: are the cases wrong?" by L.J. Schneiderman (CQ Vol 7, No 3). *Cam Q Healthc Ethics* **8**(4): 527–37

Waisel DB, Truog RD (1995) The cardiopulmonary resuscitation-not-indicated order: futility revisited. *Ann Int Med* **122**(4): 304–8

Whitmer M, Hurst S, Prins M, Shepard K, McVey D (2009) Medical futility: a paradigm as old as Hippocrates. *Dimens Crit Care Nurs* **28**(2): 67–71

Wreen M (2004) Medical futility and physician discretion. *J Med Ethics* **30**(3): 275–8

Zier LS, Burrack JH, Micco G, Chipman AK, Frank JA, White DB (2009) Surrogate decision makers' responses to physicians' predictions of medical futility. *Chest* **136**(1): 110–17

KEY POINTS

- A definition of medical futility should be framed in the context of a specific treatment goal.
- Treatment goals beyond those of traditional physiological goals should be considered.
- Decisions regarding end-of-life care and futility must be made with consideration for other important principles of biomedical ethics.
- Patients, families and the wider multidisciplinary team should be involved in decisions regarding medical futility.