



DEACTIVATION OF PACEMAKER: ETHICAL APPROACH OR MANAGERIAL FAILURE?

Marie Macková¹, Igor Kotlán²

Abstract

The decision about the deactivation of a pacemaker must be the result of a multicriteria decision-making process where the legal, ethical and effectiveness aspects must be taken into account and delicately balanced, while also considering the risk of managerial failure. Academic as well as professional discussion is necessary because there is a whole range of question marks on this topic and all the aspects mentioned above. The aim of this paper is to contribute to the debate by presenting the views of Czech physicians about the possibility of deactivation of the pacemaker in patients in terminal states. Based on the results of our research, the following steps are recommended to enable the deactivation of pacemakers in the Czech environment. Before the patient's own indication of pacemaker therapy, treatment should be discussed with the patient in detail, including complications and deactivation options. Czech ethical consultant services should be set up in Czech hospitals. And last but not least, they should take an opinion on this issue as well as the professional society.

Keywords

Deactivation of Pacemaker, Social Care, Ethical Management, Management in Social Sector

I. Introduction

The deactivation of a pacemaker is one of the most difficult health care and social services managerial decisions, as it is controversial from at least legal, ethical and effectiveness points of view (in general, see Sacristan, 2016). Health care and social services are provided mainly by non-profit organizations. Due to socio-demographic development, social services – and residential social care services above all – are gaining in importance, and thus the institutions providing social care have to follow the rules of the market

¹ University of Social and Administrative Affairs, V. Nezvala 1, 736 01 Havřířov, Czech Republic.
E-mail: mackova@vsss.cz.

² University of Social and Administrative Affairs, V. Nezvala 1, 736 01 Havřířov, Czech Republic.
E-mail: igor.kotlan@vseo.cz.

economy and try to maximize the effectiveness of the use of disposable sources in order to be competitive (Molek, 2011).

Although the aims of non-profit organizations are not seen in terms of maximization of profit, but maximization of public interest, in the sense of New Public Management (see e.g. Diefenbach, 2009, or Hornungová, 2014), they must implement appropriate managerial methods in order to achieve those aims, i.e. methods of process management, risk management, quick decision-making, etc. This approach is subject to extensive criticism based on the existence of a discrepancy between the demands placed on increasing the efficiency of providing social services and the essence of the profession based on relationships and empathy (Broadhurst, Hall, Wastell, et al. 2010, Taylor, 2006, Nikolić, 2016). On the other hand, the use of business managerial methods also has important advocates who claim that it is emerging in the helping professions in response to heightened demands for public accountability and organizational performance, and that it actually results in higher effectivity in providing social care (Gowdy, Rapp, Poertner, 1993, Briggs, McBeath, 2009).

From the legal point of view, at least two constitutional principles must be considered that are enshrined in the constitutional order of all modern democratic countries: the right to life and the right to preserve human dignity. These may be in conflict in cases of the artificial maintenance in life, for instance in a situation where the stimulation of heart rhythm via pacemaker prolongs the process of dying and the deactivation of the pacemaker in a terminally ill patient may be seen as a kind of passive euthanasia (as discussed in, e.g. Kramer, Kesselheim, Brock, Dan, et al., 2010, or Kramer, Kesselheim, Salberg, et al., 2011).

The idea of passive euthanasia was attacked and rejected by the European Association of Palliative Care in 2001. However, there is a lot of literature arguing that, although healthcare professionals' nervousness about the concept of passive euthanasia is understandable, there is really no reason to abandon the category, and that although we are obliged to refrain from killing each and every person, we do not have a similar obligation to try to prevent each and every person from dying. In other words, to kill is not the same as to let die and our moral duties – from the ethical point of view mentioned above – differ with regard to the differences between active and passive euthanasia (Garrard, Wilkinson, 2005, McLachlan, 2008). Although there is no consensus among the experts about passive euthanasia, they agree that education regarding the legal and ethical parameters of device deactivation is needed to shed more light on this topic.

If we consider all the arguments above, the decision about the deactivation of a pacemaker must be a result of a multicriteria decision-making process where legal, ethical and effectiveness aspects must be taken into account and delicately balanced, while also considering the risk of managerial failure.

In the Czech Republic, deactivation of pacemaker is not possible (nevertheless, see the discussion on the institute of previously expressed wishes, e.g. in Peterková, 2013). However, these deactivations occur abroad. The aim of this study is to obtain the views of Czech physicians about the possibility of deactivation of the pacemaker in patients in terminal states as a basis for future academic as well as professional discussion.

II. Deactivation of pacemaker

Permanent cardiac stimulation has had more than fifty years of history. It has become a routine treatment method for symptomatic or haemodynamically significant bradyarrhythmias. Contemporary indications of this treatment have been extended to the area of stimulation of chronic heart failure (Gregoratos et al., 2002). The number of implanted pacemakers increases each year. Approximately 8,000 people are implanted in the Czech Republic per year and more than 100,000 patients with implanted pacemakers live in the Czech Republic (Šnorek, Bulava, 2014). Since the 1960s, pacemaker technology has developed tremendously. Pacemakers are smaller, lighter, much more comfortable for the wearer, and are much more resistant to electromagnetic interference. They consist of a battery and electronic circuits stored in a titanium housing. If the pacemaker does not detect a sufficiently strong electrical signal in the patient's heart, it sends a short low-voltage electrical current to the heart muscle. Over 50% of implanted pacemakers can adjust the frequency of transmitted signals according to the physical activity of the patient. Most pacemakers are implanted under local anaesthetic and placed under the collarbone, between the skin and the chest muscles. Electrodes are introduced into the heart from the pacemaker. Sometimes the pacemaker is implanted in the abdomen and the electrode is placed on the outer wall of the heart. The pacemaker cannot restore cardiac arrest in the patient (Korpas, 2011). A significant number of patients with a pacemaker are polymorbid and have a number of significant symptoms of other illnesses. Doctors, patients, and their relatives may occasionally get into a situation where the stimulation of heart rhythm prolongs the process of dying. Patients who are on a pacemaker-dependent basis cannot be deactivated because this would result in the rapid death of the patient. However, in patients who are not in a case of dependence on cardiac stimulation, deactivation of the device can be considered.

III. Methodology of research

A single sample survey was used to obtain the information. The questionnaire consisted of three parts. In the first part, the respondents were asked about their opinions related to the deactivation of the pacemaker, in the second part they had to comment on the possibilities of the deactivation of the pacemaker in various clinical situations, and in the third part were identified identification data. Prior to the survey, pre-research was carried out, wherein clarity and the clarity of the questions was monitored. The actual data collection took place in February and March 2016. The questionnaire was distributed electronically to doctors in hospices and in faculty hospitals, internal, geriatric and surgical departments. The questionnaire was opened by 358 respondents, started to be filled in by 263 respondents and finished being filled in by 84 respondents. A survey sample was made up of 84 respondents (100.0%) who completed the whole questionnaire. 67.9% of respondents said they had a specialization in one of the following disciplines: internal medicine, geriatrics, cardiology or neurology. 32.1% of respondents said they had a specialization in palliative care. As for the workplace, 28.6% of respondents said they were in hospice or mobile hospice, 46.4% of respondents worked in hospitals and 25.0% respondents were in both

hospital and hospice. Most respondents (42.9%) had been practising for between one and fifteen years.

IV. Results

Of the respondents interviewed, 85.7% had patients with a pacemaker. Most commonly, the result was 0–5 patients with a pacemaker. 66.7% of respondents would agree to the deactivation of the pacemaker, 20.2% would refuse to deactivate the pacemaker for personal or religious reasons, and 13.1% of respondents believe that the deactivation of a pacemaker is unethical.

Although 53.6% of respondents believe that cardiostimulation is not stressful for dying patients, 67.9% of respondents would agree with a prolonged dying with cardiac pacemaker deactivation. The majority of respondents (96.4%) would consider deactivation of the pacemaker if the patient wanted it and 89.3% of respondents would respect the decision to deactivate the pacemaker if the patient had stated it in advance directives. Three quarters of respondents said they did not feel resistance from the patient and his family when discussing deactivation of the pacemaker. Discussion of cardiac pacemaker deactivation would result in 50.0% of respondents leading to end-stage patients who would be at risk of prolonged dying.

The respondents' opinions on cardiac pacemaker deactivation in various clinical situations are captured in Table 1.

Table 1: Opinions regarding pacemaker deactivation in several clinical scenarios

Clinical case	Yes	No	Don't know
Man with severe chronic obstructive pulmonary disease who reports poor quality of life	21.4% (18)	60.7% (51)	17.9% (15)
Man with advanced dementia who is agitated by doctor's appointments and medical tests	25.0% (21)	57.1% (48)	17.9% (15)
Woman with stage 4 ovarian cancer who requests palliative care	35.7% (30)	46.4% (39)	17.9% (15)
Man with end-stage renal failure who refuses dialysis	42.9% (36)	50.0% (42)	7.1% (6)
Woman with a massive stroke whose family has requested ventilator withdrawal	50.0% (42)	35.7% (30)	14.3% (12)
Patient with end-stage heart failure	46.4% (39)	35.7% (30)	17.9% (15)

Note: Absolute number of respondents in brackets

V. Discussion

The issue of cardiac pacemaker deactivation in terminal patients is not routinely discussed. In the literature, we are more likely to discuss the possible deactivation of cardioverters in patients with terminal illness. Six clinical situations were taken from studies by Kelley et al. (2009) and Marinskis et al. (2010). As expected, the results generated contradictory views. Especially in the sixth clinical situation, respondents split into two groups with

opposing views. Interestingly, in the fifth clinical situation, when the family asks for disconnection from the ventilator, half of the respondents would agree to the deactivation of the pacemaker. This result supports the current trend in health care facilities, where the emphasis is placed on the opinion of family members. In our view, however, this trend has no justification and ignores the patient's right to autonomy. Conversely, in the first two clinical situations, when the patient alone disagrees or does not accept the treatment offered, at least the respondents would agree with the deactivation of the pacemaker.

Abroad, views on the possible deactivation of pacemakers were found by Morrison et al. (2010). Using a questionnaire, 112 respondents were contacted and questioned on their experience with the deactivation of pacemakers and cardioverters. They found that requests to deactivate pacemakers were more frequent. The reason is the rejection of prolonged death. Requests to deactivate cardioverters are motivated by the refusal to resuscitate. Mueller et al. (2008) investigated how often and when cardiac pacemakers and cardioverters are deactivated. In their case, they approached 787 respondents and found that the deactivation of pacemakers and cardioverters was common in terminal patients. However, situations in which it is necessary to resolve the deactivation of the pacemaker is not common. Morrison et al. (2010), who conducted their research among hospice and palliative care physicians, said physician requests for the deactivation of pacemakers happened about once a year. Most doctors lack protocols they could follow in such a situation.

Deactivation of pacemakers in the Czech legal order is illegal for two reasons. First, patients are not informed of the consequences of deactivation because they are not discussed (Herman et al., 2013). Second, deactivation is seen as a process that results in an active cause of death.

VI. Conclusion

With an increasing number of patients with pacemakers, the possibility increases that patients will request the deactivation of pacemakers, while deactivation is also one of the most controversial managerial decisions, leading to conflicts of legal, ethical and effectiveness aspects in light of the issue of passive euthanasia. This is especially so in situations where patients have the possibility to use the institute of previously expressed wishes. The following steps are recommended to enable the deactivation of pacemakers in the Czech environment. Before the patient's own indication of pacemaker therapy, treatment should be discussed with the patient in detail, including complications and deactivation options. Czech ethical consultant services should be set up in Czech hospitals. And last but not least, they should take an opinion on this issue as well as the professional society.

Acknowledgments

This paper was financially supported by EACO within the project "Efficiency vs. Ethical Management in Social Services", No. EACO/RP09/2016.

References

- Briggs, H. E., McBeath, B. (2009). Evidence-Based Management: Origins, Challenges, and Implications for Social Service Administration. *Administration in Social Work*, 33(3), 242–261.
- Broadhurst, K., Hall, C., Wastell, D. et al. (2010). Risk, Instrumentalism and the Humane Project in Social Work: Identifying the Informal Logics of Risk Management in Children's Statutory Services. *British Journal of Social Work*, 40(4), 1064–1064.
- Diefenbach, T. (2009). New public management in public sector organisations – the dark sides of managerialistic 'enlightenment'. *Public Administration*, 87(4), 892–909.
- Garrard, E., Wilkinson, S. (2005). Passive euthanasia. *Journal of Medical Ethics*, 31(2), 64–68.
- Gowdy, E. A., Rapp, C. A., Poertner, J. (1993). Management is performance – Strategies for client-centered practice in social-service organizations. *Administration in Social Work*, 17(1), 3–22.
- Gregoratos, G. et al. (2002). ACC/AHA/NASPE 2002 guideline update for implantation of cardiac pacemakers and antiarrhythmia devices: summary article: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines.
- Herman, D., Stros, P., Curila, K., Kebza, V., Osmančík, P. (2013). Deactivation of implantable cardioverter-defibrillators: Results of patient surveys. *Europace*, 15(7), 963–969.
- Hornungová, J. (2014). Development of Concepts and Models of Performance Evaluation from the 19th Century. *DANUBE: Law, Economics and Social Issues Review*, 5(2), 143–154.
- Kelley, A. S., Reid, M. C., Miller, D. H., Fins, J. J., Lachs, M. S. (2009). Implantable cardioverter-defibrillator deactivation at the end of life: A physician survey. *American Heart Journal*, 157, 702–7.
- Korpas, D. (2011). *Kardiostimulační technika*. Praha: Mladá Fronta.
- Kramer, D. B., Kesselheim, A. S., Brock, D. W. et al. (2010). Ethical and legal views of physicians regarding deactivation of cardiac implantable electrical devices: A quantitative assessment. *Heart Rhythm*, 7(11), 1537–1542.
- Kramer, D. B., Kesselheim, A. S., Salberg, L. et al. (2011). Ethical and Legal Views Regarding Deactivation of Cardiac Implantable Electrical Devices in Patients with Hypertrophic Cardiomyopathy. *American Journal of Cardiology*, 107(7), 1071–1075.
- Marinskis, G., van Erven, L. (2010). Deactivation of implanted cardioverterdefibrillators at the end of life: Results of the EHRA survey. *Europace*, 12, 1176–1177.
- McLachlan, H. V. (2008). The ethics of killing and letting die: active and passive euthanasia. *Journal of Medical Ethics*, 34(8).
- Molek, J. (2011). *Řízení organizací sociálních služeb – vybrané problémy*. Praha: Výzkumný ústav práce a sociálních věcí.
- Morrison, L. J., Calvin, A. O., Nora, H., Porter Jr., S. C. (2010). Managing cardiac devices near the end of life: A survey of hospice and palliative care providers. *American Journal of Hospice and Palliative Medicine*, 27(8), 545–551.

- Mueller, P. S., Jenkins, S. M., Bramstedt, K. A., Hayes, D. L. (2008). Deactivating implanted cardiac devices in terminally ill patients: Practices and attitudes. *Pacing and Clinical Electrophysiology*, 31(5), 560–568.
- Nikolić, B. (2016). Slovenian Complementary Health Insurance Reform – Dichotomy between the Internal Market and the Social Dimension. *DANUBE: Law, Economics and Social Issues Review*, 6(4), 205–216.
- Peterková, H. (2013). Previously Expressed Wishes in the Czech Republic – A Missed Chance of the Czech Legislator. *Medicine and Law*, 32, 429–440.
- Sacristan, E. B. (2016). Efficient and ethical management in the implementation of public services related to social rights. *Journal of Constitutional Research*, 3(1), 125–143.
- Šnorek, M., Bulava, A. (2014). Kompatibilní kardiostimulátory a implantabilní kardiovertery defibrilátory. *Vnitřní lékařství*, 60(2), 123–127.
- Taylor, B. J. (2006). Risk management paradigms in health and social services for professional decision making on the long-term care of older people. *British Journal of Social Work*, 36(8), 1411–1429.