

THE ISSUE OF DIAGNOSTIC PROCEDURES AND TREATMENT INTERVENTIONS OVERUSE IN HEALTHCARE

Ján BIELIK

Faculty of Healthcare, Alexander Dubcek University of Trenčín, Študentská 2, 911 50 Trenčín, Slovak Republic

Corresponding author e-mail address: jan.bielik@tuni.sk

Abstract

Background: Medicine and healthcare are characterized by increasingly more advanced technology that allow for more accurate diagnosis and better treatment. The issue is that this trend is faster than the increase of financial resources to healthcare systems.

Methods: Literature found by researching specific (re)sources were used to find out the current situation in Slovakia and worldwide.

Results: Formalized, RESP. institutionalized activities and initiatives for professional determination of the state of overuse, overdiagnosis and overtreatment already exist around the world. In Slovakia, individual interests in said issue is more commonly observed. Despite that, the studies about using laboratory examination of thyroid diseases assessed the estimate saving potential about 10-12% a year, which can mean approximately 900 000 € a year.

Conclusions: Slovakia should follow the worldwide trend and create a method of acquiring reliable results about the possibilities of saving by rational indication in diagnosis and treatment of chosen diseases and without harming the patient. The premise is the cooperation of Ministry of healthcare, health insurance companies and scientific medical companies.

Keywords: Overuse. Overdiagnosis. Overtreatment.

1 Introduction

The issue of overuse is currently not a relative trend, but given the need to find balance between financial resources and increasing healthcare costs also very pressing.

Scientific beginnings of this phenomenon can be dated from 1976 when doctor Wennberg dealt with it while analyzing data for Medicare. He described „overuse of supply sensitive services“ in the context of 4 unjustified regional variations of usage of healthcare, without effect on the result of the state of health: a) the underuse of effective care, b) variations in outcomes attributable to the quality of care, c) the misuse of preference-sensitive treatments, d) overuse of supply-sensitive services [1].

In Slovakia this mentioned principle of variations was reflected in its own way into current assessment of specialized healthcare assessment by health insurance companies. General Health Insurance Company evaluates three parameters in endocrinology: medical services (examinations), drugs, and joint laboratory examinations. Summarized evaluation of these three parameters was reflected in so called efficiency coefficient. If the physician went over the limit of given range, for example, had more medical services than the Slovak average per patient, his coefficient was lowered and projected in lower financial valuation.

Overutilization is currently defined by bioethical E. J. Emanuel and healthcare economist V. R. Fuchs in 2008 as an unnecessary healthcare given in a larger range or volume and with costs higher than appropriate [2]. In Slovakia, the concept of „technologism“ appeared in 1989. It was used in relation to the introduction of modern diagnosis – abdominal ultrasound into practice, with the elements of overutilisation appearing, then also followed by overdiagnosis and eventually overtreatment with the risks of fatal consequences in surgical treatment of otherwise asymptomatic cholecystitis [3].

When the disease is diagnosed correctly, but is as of itself irrelevant, we talk about *overdiagnosis*. Specifically about the cases where treatment is unavailable, unnecessary or even undesirable. The disease causes no more symptoms to occur or det in the future. Overdiagnosis is often a side effect of screening programs, especially in diagnosing an early stage of the disease [4].

Overtreatment is commonly seen as too much of treatment. It means that we are treating the correctly diagnosed disease, but in that situation it is unnecessary to treat the disease in such degree or at all, for example the above mentioned asymptomatic cholecystitis or some forms of prostate cancer etc. [5].

The topic of overuse or unnecessary healthcare is gaining on importance in global perspective. *Preventing overdiagnosis* is an international association dedicated to the issue of overdiagnoses on scientific level. The members are renowned institutions and organizations, e. g. British Medical Journal, Consumer Reports, Bond University's Centre for Research in Evidence- Based Practice, University of Oxford's Centre for Evidence Based Medicine, and Dartmouth Institute for Health Policy and Clinical Practice. The most recent conference of this association was held in 2017 in Quebec, Canada, and had more than 400 participants [6].

Overdiagnosis and overtreatment in healthcare was fundamental topic also on *Cochrane Colloquium* in Seoul, South Korea in October 2016. 1500 participants took part in the event. The vision about its focus is presented by the lectures given : A. Barratt – The issue of overutilization: its scope and mechanics in healthcare, R. F. Redberg

– The evidence of overdiagnosis and overutilization: perspective for academic periodicals, J. Doust – Systematic evaluation and evidence based medicine in privation of overdiagnosis [7].

2 The issue of overutilization in Slovakia

The issue of overutilisation, overdiagnosis and overtreatment is not currently discussed coherently in Slovakia. There is sporadic activities, lectures and articles, but they don't have the form of a platform or institutionalized activity. A certain relation to the topic can be found in official sources more in the form of indirect statements.

- a) *Overutilization in relation to the Manifesto of the Government*: According to Manifest of the Government for Healthcare 2016-2020 in the field of healthcare policy “the government has as interest in creating such a system of providing healthcare that will be based on the principle of efficiency and purposefulness”. That means that public resources have to be divided so that they reflect the real costs on given medical services with strong emphasis on effective and purposeful handling of such financial resources [8].
- b) *Overutilization in relation to 2017 budget*: Overutilization in relation to budget means, that overutilization use up public resources, of which there is a permanent shortage. E. g., the payables after the payment due were 650 million € as of 31 December 2016 [9].
- c) *Overutilization in relation to financial state of VŠZP, a.s.*: The reality of remittance from VŠZP, a.s. is marked, among other things, by record financial loss of 112 million €, which was a loss made in 2016. According to the insurance company, the loss was caused by historical healthcare cost increasing since 2015. The recovery plan is carried out, among other things, by CT and MRI examination saving, as well as drugs saving [10].
- d) *Overutilization in relation to the planned measures of Ministry of Healthcare*: One of the appendices Interim report – Revision of the costs of healthcare were the Planned projects of the Ministry of Healthcare of Slovak republic. One of them was a Drug policy project, which is to be focused on:
 1. Reassessment of efficiency of categorizing of new innovative drugs into categorization (to December 2016).
 2. Comparison of drug usage in Slovakia, Czech Republic and other countries by drug type, providers, cost efficiency, geographical regions and measure proposition for lowering drug usage and costs of drugs (e.g. financial limits, positive motivation, generic positive motivation, generics prescription) while concurrently emphasizing ensuring enough effective drugs (to March 2017).
 3. Lowering drug usage while ensuring the accessibility and quality of provided healthcare (to March 2020) [11].

3 Overuse, overdiagnosis and overtreatment vs the quality of healthcare

According to the Institute of Medicine National RoundTable on Health Care Quality (USA) 21% of all ATB prescriptions (children and adults) were ineffective. Every unnecessary ATB use heightens the risk of side effects and also resistance to ATB. According to another data available, up to 32% neck carotid endarterectomies were inappropriately indicated. Other inappropriately indicated examinations that we can mention were coronary angiography (17%), gastrofibroscopy (17%), hysterectomy (16%), cardiac pace-maker (20%), and ventricular tympanostomy (23%) [12].

Overutilization is often seen in oncology, too. For example, prostate adenocarcinoma is probably the one at the highest risk of overdiagnosis and overtreatment, since every 60 year old man runs at 50% risk of developing occult carcinoma. However these are often low risk. When it comes to lung cancer, it's estimated that cca 2 to 25% of lung cancer cases are overdiagnosed. It estimated that up to 30% of invasive breast cancer can be extremely low risk given their molecular profile. The incidence of non-melanoma skin carcinoma has increased by 50% during the past decade, while they very rarely lead to death. Yet these patients receive aggressive treatment [5].

4 Overuse, overdiagnosis and overtreatment and recommendations

On that base, a consensus of the working group dealing with overdiagnosis and overtreatment for National Oncological Institute in USA emerged with following recommendations:

1. Realize that overdiagnosis is present and quite common as well.
2. Support finding a new terminology with replacing the term cancer, if possible, with the term IDLEs – indolent lesions of epithelial origin (IDLE).
3. Create observation registers for IDLEs and diseases with low or uncertain risk of progress into cancer.
4. Mitigate overdiagnosis by trial strategies that will lower the potential of non-important lesions
5. Support new concepts of cancer progress and cancer prevention assessment.

Overutilization in endocrinology in Slovakia, rather in its field – thyroendocrinology, was addressed by team of authors back in 2012 (Bielik, Jančaříková, Ježíková//Endocrine Education Forum, 1.-2. June 2012). The basis for their work was the assumption of overutilization of laboratory examinations in thyroendocrinology and following unnecessary costs. The hypothesis was confirmed by the number of examinations and costs analysis, while with the confirmation a sum of unnecessary cost can be estimated to reach 10-12% of total costs of laboratory examinations. The estimated sum for saving was 600 000 € in 2012.

Professional recommendation about rational indication of certain laboratory examinations in thyroidal diagnosis [13].

In USA, recommendations for primary healthcare were published to help lowering the number of unnecessary examinations that have no real effect for either the patient or the healthcare system.

1. Do not use MRI or CT for lumbalgia for the first 6 weeks if there aren't signs of blood flow disorder, inflammation or neuropathy.
2. Do not screen for diseases using extensive biochemical analysis or urine analysis in adult asymptomatic individuals. The exception is lipid screening and screening for DM II in asymptomatic patients with hypertension.
3. Do not make ECG or other cardiac screening in asymptomatic low-risk patients annually. Significant risks are false positives, followed by invasive examinations, inferior treatment, and misdiagnosis.
4. Only order generic statins when initiating hypolipidemic treatment. It is important to note that all statins are effective at the correct dosage, in terms of reducing mortality, cardiac and cerebral episodes, changing them to the original atorvastatin or rosuvastatin should be effective.
5. Do not use densitometry as an osteoporosis screening in women under 65 and men under 70 unless risk factors are present. The cost effectiveness of densitometry has only been demonstrated in elderly patients [14].

5 Conclusion

Overutilization bring various aspects, namely clinical, economic, legal and ethical. In *clinical* setting, it's crucial to realize that every unnecessary diagnosis, albeit correct, carries the risk of maladministration and the risk of undesirable effects. The *economic* consequence is the unnecessary use of limited resources (estimated from 10% to 20%). In *legal* standpoint, it should be noted that, although the legal implications are still being applied mostly in cases of "underutilization", the application of the consequences of "overuse" is likely to increase (undesirable effects). In the case of overuse, we also note *ethical* aspects, namely possible psychological damage (e.g. consciousness of oncology diagnosis), imbalance between the application of ethical principles - do no harm, and maximize benefit to individuals with regard to the benefit of the community.

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