



ORIGINAL ARTICLE

Alcohol abuse and oncology

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Abstract

Alcohol increases the risk of many oncological diseases. It also complicates the oncological treatment of patients who abuse alcohol. Abstinence from alcohol should therefore be recommended in the primary and secondary prevention of oncological diseases. In oncology, as in other clinical disciplines, a brief intervention can be used for alcohol-related problems. Brief intervention techniques are useful, simple, and take a minimum of time, which is why we discuss them in more detail here.

Excessive stress and alcohol abuse present a problem not only for the patients but also for some oncologists. In the final part of the article we focus on the prevention of excessive stress and alcohol abuse in oncology workers and offer some specific options.

Keywords

Alcohol abuse, oncology

Introduction

The annual alcohol consumption in the Czech Republic has long been around 10 liters of 100% alcohol per capita. This, among other things, increases the risk of oncological diseases. Alcohol abuse is also common in children and adolescents in the Czech Republic.

Most of the harm that alcohol causes in the population comes to people who are not addicted to alcohol, but “only” abuse it. The reason is that there are significantly more people who abuse alcohol in the population than there are the dependent ones. Public awareness of the effects of alcohol varies from country to country. But in general, it is not good. The material of the American Society of Clinical Oncology (LoConte et al., 2018b) recommends implementing the recommendations of the World Health Organization regarding alcohol. These include, in particular, measures at the societal (governmental) level, such as reducing the availability of alcohol for children and adolescents.

Alcohol as a carcinogen

Due to the carcinogenic effect and other risks, the safe dose of alcohol is close to or equals to zero (GBD, 2016). Alcohol abuse increases the risk of tumors in many locations in the body, e.g. esophageal cancer, pharyngeal cancer, liver cancer, breast cancer, pancreatic cancer (Pezzilli, 2018), colorectal cancer (Brennen and Chen, 2018; Tárraga López et al., 2014) and probably melanoma (Gandini et al., 2018). The enormous incidence of rectal carcinoma in the Czech Republic may be related to high beer consumption (Thygesen et al., 2005).

The work of Nelson et al. (2003) significantly simplifies the answer to the question of a safe dose of alcohol. The cited authors found that even daily doses of alcohol not exceeding 20 grams of alcohol (i.e.

about half a liter of beer or 2 dcl of wine) increase the risk of cancer. In the study, they say: “Higher [alcohol] consumption increases risk but there is no safe threshold for alcohol and cancer risk. Reducing alcohol consumption is an important and underemphasized cancer prevention strategy.”

Nelson et al. (2013) estimate that the proportion of alcohol related cancer deaths in the USA amounts to 3.2% – 3.7%. In case of breast cancer in women, this number goes up to 56–66%. The proportion of esophageal cancer deaths in men caused by alcohol is similarly high (53–71%). It should be noted that annual alcohol consumption per capita in the USA is significantly lower than in the Czech Republic.

Added to this is the possibility of interactions with other carcinogens. People who drink alcohol and smoke tobacco have a higher risk of developing tumors than the corresponding sum of the risks for these substances alone. In addition, nicotine delays the feeling of intoxication and inhibition. This sometimes leads to sudden drinking of higher doses of alcohol. The synergistic effect of carcinogens can also be expected in the case of smoking marijuana and drinking alcohol.

Possible mechanisms

The ability to metabolize alcohol is to some extent genetically determined and it can be assumed that genetic influences also affect the susceptibility to alcohol-induced cancer (Druesne-Pecollo et al., 2009).

- Acetaldehyde formed during alcohol metabolism is carcinogenic, binds to DNA and proteins and increases the risk of mutations.



- Alcohol leads to oxidative stress, increases the risk of inflammation, and affects the concentrations of certain hormones.
- Alcohol consumption often causes nutrient deficiencies – e.g. lower concentrations of folic acid have been found.
- The carcinogenicity of alcoholic beverages is also affected by their ingredients, especially by some nitrosamines and increased permeability of the intestinal mucosa (Dostálová, 2018).

Alcohol in cancer

Reducing alcohol consumption or abstinence is considered one of the essential elements of cancer prevention (LoConte et al., 2018b). In people who drank alcohol but then abstained for a long time, a significant reduction in the risk of certain types of tumors was found.

Alcohol in cancer patients

The importance of alcohol abstinence in cancer patients is not as obvious as in the case of primary prevention. What is certain, however, is the fact that alcohol abuse worsens the patient's treatment cooperation. Alcohol also interacts with a number of common medications, including non-steroidal anti-inflammatory drugs.

The American Cancer Society's nutrition and lifestyle recommendations include, in addition to physical activity and predominantly plant-based diet, alcohol reduction or abstinence. These recommendations are also useful in the prevention of other diseases and improve the lives of cancer patients (Lei et al., 2018).

A tactful and sensitive approach is appropriate for cancer patients. It is not appropriate to emphasize too much that drinking alcohol may have contributed to the development of their illness. Feelings of guilt could be evoked. Suffice it to say, for example, that alcohol abstinence will facilitate treatment.

Briefly about the diagnosis of problems caused by alcohol

The following diagnostic categories are the most important for oncologists.

Risky Alcohol Use: This diagnostic category is not found in ICD-10 and therefore does not have a numerical code. We are using it if there is no health damage as a result of the use of the psychoactive substance, but such damage is likely to occur in the case of continued use.

Harmful Use: To make this diagnosis, damage caused by a psychoactive substance must be present, but is not yet an addiction.

Dependence Syndrome: There are six signs of dependence; if someone meets three or more of them, according to ICD-10 he or she is addicted. The listed signs of dependence are formally equivalent. In reality, however, the 2nd sign is most important, i.e. impaired self-control in relation to the psychoactive substance. The presence of this sign is usually accompanied by the 5th sign

(neglecting other interests) and the 6th sign (continuing despite adverse consequences), which is sufficient to diagnose dependence. If the patient repeatedly comes to the checkup under the obvious influence of alcohol, it may be a sign of impaired self-control in relation to alcohol and alcohol dependence.

Brief intervention for alcohol problems

The number of people who drink alcohol risky or harmfully is estimated at approximately 900.000 people in the Czech Republic.

Brief intervention may be fully sufficient, especially for risky and harmful use. It is also applicable to advanced addiction, but its effectiveness will be lower in this case. Therefore, it is appropriate to combine it with other procedures, such as the recommendation of specialized treatment. There is convincing evidence of the effectiveness of a brief intervention in the literature (e.g. Fleming and Manwell, 1999) and its systematic use is also recommended by the World Health Organization.

Some procedures used in a short intervention

From the options below, the doctor will choose what is appropriate and realistic in the given situation.

Recommendation of complete abstinence. Even such a simple intervention can be highly effective in certain circumstances.

Brief intervention and diagnosis. As a part of the diagnostic process, motivation can be strengthened. Due to the questions related to dependence, the patient then becomes more aware of the problems and will be more willing to abstain.

Feedback. This is closely related to the assessment of the physical condition. The doctor can say e.g.: "Elevated liver function tests may be related to alcohol. Abstain from it one month and then come back for a checkup!"

Strengthening of motivation. This is most often achieved through appropriate questions about alcohol-related problems in different areas of life. It is a gentle and effective therapeutic modality.

Handing over self-help materials. A number of self-help guides for people with addictive disorders and their relatives are freely available at www.drnespor.eu.

Working with the family. Coworkers, relatives, and friends can motivate a patient with an addictive illness to change, but they can also have the opposite effect. It is advisable to strengthen the positive influence of the surroundings and eliminate – or at least weaken – the negative influences as much as possible.

Using telephone assistance and the Internet. There is a dense network of crisis hotlines in the Czech Republic. In addition, there are virtual groups of Alcoholics Anonymous on Skype and the Internet. All of this can be particularly useful when, for example, an individual with an addictive problem is outside his or her place of residence or for some other reason cannot attend such a meeting in person.

Checkups and monitoring. Long-term contact with a patient is also important even for a patient who refuses treatment and continues to abuse alcohol. Due to life circumstances, a sudden change of mind can easily occur.



Recommending participation in a self-help organization (e.g. Alcoholics Anonymous). It takes the doctor a minimum of time to pass the Internet address to the Czech Alcoholics Anonymous organization. The patient's cooperation with such an organization is often long-term, which increases its effect.

Active transfer to simultaneous specialized treatment. This means that the doctor provides the patient with contact to a specialized facility, arranges the first visit there, or the patient is accompanied to this visit by, for example, someone from the family.

Alcohol and professional stress in oncology

An above-average risk of alcohol abuse exists in a number of medical disciplines. Emergency medicine, anesthesiology and psychiatry are considered particularly risky. Oncology probably also belongs to the above-average risk fields. According to meta-analysis by Medisauskaitė and Kamau (2017), 32% of British oncologists suffer from burnout, 27% have mental health problems such as depression and sleep disorders, and 30% drink alcohol in a problematic way. Similar conclusions were reached by the French authors Blanchard et al. (2010).

The above-average level of stress affects not only doctors but also nurses. Excessive stress and three-shift work schedule are risk factors for the development of a number of problems, including alcohol dependence. Preventive programs for oncology workers most often include the training of communication skills and relaxation techniques (e.g. Bragard et al., 2006). Experience from foreign programs shows that this works even if alcohol is not explicitly mentioned in prevention. Zadeh et al. (2012) included in their preventive program for nurses, in addition to communication and other skills, also the practice of relaxation and pain mitigation by non-pharmacological procedures. Both are useful not only for patients but also for the nurses themselves. Good experience with a similar program were also found by Kravits et al. (2010). Özbaş and Tel (2016) also report good experience with psychodrama in this indication.

Many authors recommend the use of humor and laughter in prevention in oncology workers (e.g. Grassman, 1993; Simon, 1989). This is not surprising, because laughter is one of the natural ways to relax.

Some natural ways to relax

- Laughter and smile. A smile accompanies most healthy emotions such as kindness and facilitates communication.
- Calm diaphragmatic breathing is typical for a feeling of safety and peace, and therefore, with its help it is possible to relax.
- Sleep. Sleep deprivation has been shown to impair emotional state and the ability to make good decisions.
- Favorable environment and good relationships.

- Spontaneous relaxation after adequate physical activity. It is important to mention that telomeres are the terminal parts of chromosomes. They form something like an envelope of genetic information and protect from tumors and aging. Therefore, it is preferable to have telomeres with a sufficient length. An easy way to prolong telomeres and life is to exercise with medium intensity for a longer period of time (Tucker, 2017), i.e. longer walks. In addition, physical activity alleviates anxiety and depression.

We deal with the prevention of occupational stress and alcohol abuse in healthcare professionals in more detail in Nešpor, 2018. We can also refer to other publications (e.g. Dostálová, 2016). In the following text, we will briefly mention five areas of prevention.

Five areas of prevention of stress and addictive problems in doctors.

Reducing the effects of risky external stimuli: Doctors or nurses find it difficult to avoid work-related stress. But they do not have to pay excessive attention to stressful media content after working hours. It has also proved useful to draw a clear line between work responsibilities and privacy. Alcohol, tobacco, other addictive substances, and gambling increase the level of stress, but the individual is less aware of it. This leads to the illusion that these substances or activities (gambling) are useful. The fact that the doctors protect themselves from information overload and handle the necessary skills will also reduce the level of stress.

Ways to weaken the effects of internal stimuli that cause stress and increase risks: These include hunger, dehydration, sleep deprivation, fatigue, lack of exercise, strong risk emotions and long sitting. Even these factors cannot be completely eliminated, but their effects can be reduced, e.g. short breaks prove to be useful during long sedentary work. Irregular eating is often justified by a crowded work schedule and leads to hypoglycemia, the symptoms of which (e.g. anxiety, increased fatigue, sweating etc.) cause insecurity and may lead to the manifestation of latent diseases.

Ways to improve mindfulness: Good mindfulness makes it easier to recognize stressful stimuli and limit their effects (Gilmartin et al., 2017). There is a simple technique associated with mindfulness, in which we observe thoughts and do not react to them. This is sometimes referred to as "surfing". It means to glide on the surface of thoughts without "getting wet". The practitioner maintains the detachment, foresight, and attitude of the observer. This procedure is similar to some traditional meditation techniques¹. Good mindfulness allows people to recognize soothing environments, situations or activities and make better use of them.

Working with motivation: It is possible to recall past negative experiences with overwork and realize the benefits of a reasonable lifestyle. Work stress is better tolerated when we look forward to something, e.g. relaxation, exercise, or a walk. Resistance to stress also increases meaningfulness, the feeling that an individual can

¹ E.g. the recording „Meditation of inner silence“ is free on www.drnespor.eu.



influence one's life, and the ability to accept obstacles as a challenge (Kobasa, 1979).

Relaxation in a broader sense: This includes relaxation and meditation techniques (e.g. Nešpor, 1988, many of the techniques are freely available at www.drnespor.eu), physical activity, understanding by other people, stable relationships, diaphragmatic breathing, music, laughter, non-work related compensatory activities. The advantage of yoga or qigong is that they integrate relaxation and physical activity into one whole. Various forms of spiritual life are also useful. It can be assumed that spirituality is even more important in the prevention of stress and addictive diseases in oncologists and their patients than in other medical fields (Peteet JR, Balboni, 2013; Xing et al., 2018).

Laughter and humor in cancer patients

Laughter is one of the natural ways to relax. It is useful not only for oncologists, but also for their patients. This topic is beyond the scope of this article, but I will offer examples nevertheless:

- One organization for women after hysterectomy was called "Hyster Sisters".
- A woman after breast surgery for cancer at a meeting of a self-help organization described with humor how the dog took her spare breast.
- Organized laughter has also found application in patients undergoing radiotherapy (Kim et al., 2015).
- 64% of cancer patients with a prognosis of less than half a year of life perceived humor as a valuable aid in managing their situation (Joshua et al., 2005).

I would like to thank to the oncologist MUDr. Olga Dostálová, CSc. for valuable comments.

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Received: 20. 7. 2020

Accepted after review: 10.10. 2020

Published on-line: 20.10. 2020

Author: MUDr. Karel Nešpor, CSc.

CITATION:

Nešpor, K. (2020). Alcohol abuse and oncology. *Cognitive Remediation Journal* [online], 9(4), 28-32 [put a date of citation]. Available on WWW: https://cognitive-remediation-journal.com/artkey/crj-202004-0002_alcohol-abuse-and-oncology.php. ISSN 1805-7225.