
Placebo, nocebo and psychological effects of drugs

Prim. MUDr. Karel Nešpor, CSc. and MUDr. Hana Karbanová

Introduction

As evidenced by the placebo effect, drugs work both psychologically and biologically. Some knowledge that concern placebo effect can be used in administration of pharmacologically effective drugs. This topic will be discussed in the latter section of the article. The issue of placebo effect is important particularly for doctors, nurses and pharmacists.

Placebo: the possible mechanism of action

From a medical perspective, placebo is an inactive substance or procedure that imitates the active substances or procedures. Active placebo is not pharmacologically active but contrary to placebo it has similar side effects as the active substance which increases its plausibility.

Placebo effect is explained by an increased secretion of endorphins (Benedetti, 2007). Naloxone, the opioid receptors antagonist, weakened the analgesic effect of placebo. In the study by Stern et al. (2011), the placebo effect improved the short-term memory and this effect was blocked by naloxone administration. Other receptor systems can also be affected. It is assumed that the placebo effect has neurophysiological basis and that due to it the stimulation of the body's ability to heal occurs (Vinař, 2013).

It would be oversimplifying the situation to understand the placebo efficacy only as a result of the patient's lack of information. Kaptchuk et al. (2010) report a positive placebo effect in patients with irritable bowel syndrome. The experimental group showed less health difficulties and improved quality of life. The interesting thing about this study was that the subjects were informed that the medication they are taking does not contain the active substance. They were told that "the clinical research has shown that such tablets may affect the health through the mind."

The effect of placebo differs significantly at various disorders. Disorders that respond well to placebo include bronchial asthma, sleep disorders, pains, panic disorders, post-traumatic stress disorder and depressions. In contrary, patients with obsessive compulsive disorder do not respond to placebo treatment (Brown, 2006). In placebo effect a number of mechanisms is involved. Some of them are mentioned hereafter.

Psychological mechanisms that are involved in drug and placebo administration (based partly on Brown, 2006)

This treatment is recommended by a recognized medical specialist.

Placebo administration is preceded by diagnostic procedures. It brings a considerable relief to some patients before they are diagnosed.

The effect of healing rituals and symbols of treatment, such as the prescription pad (Swinburn et al., 1998), stethoscope, medical clothing, etc.

The medical specialist acts calmly and confidently. A slight smile can also have positive influence. Medical specialist thus shows nonverbally that the situation is safe and that he has the treatment under control.

Positive emotions such as confidence or hope also act favorably. The explanation is neurophysiological (Petrovic et al., 2002). A situation where patient learns favorable prognosis of his or her disease should serve as an example.

Conditioning effect is also considered. For example: a look at medication can subdue asthma symptoms even before the drug application.

The pharmacotherapy effect is also strengthened when the course of treatment is in accordance with the patient's expectations and beliefs, or when a similar treatment had a good effect in the past.

The effect of placebo is also influenced by the individual characteristics such as suggestibility (De Pascalis et al., 2002) and age. Children and young people are usually more suggestible.

Nocebo as a serious medical problem

If the placebo has predominantly negative effects, it is then called a nocebo effect. In accordance with Beran (2010), it is considered appropriate to thoroughly understand the negative effects of nocebo and pharmacotherapy. Exaggerated belief in the omnipotence of a certain medication can lead the patient to neglect more important elements of treatment, such as lifestyle changes, physical exercises, or psychotherapy. When the medication that patient relied on too much fails, the situation can result in depressive symptomatology and non-cooperation in treatment. In this case, better alternatives have to be found. E.g. alcohol-dependent patients who did not respond to anticraving treatment, responded better to psychotherapy (Berner et al., 2013).

In a broader sense, nocebo effect can be expected even if the medical specialist looks exhausted, rushes too much, expresses uncertainty and fear, or acts depressingly. Unmanaged stress in medical specialists also worsens the decision-making ability and health; it increases the risk of error-making and leads to uncertainty. It is necessary to choose a manageable level of stress, learn relaxation techniques and diaphragmatic breathing etc. This protects the medical specialist and also has a positive effect on the patient (Nešpor, 2009, 2007).

A patient, who is sick and suffers from pain, tends to be more focused on himself and often relates the things that happen around to himself. This also applies to nonverbal communication. Let's say that a doctor looks worried due to the administrative overload or personal problems. From the doctor's facial expression the patient can assume a poor prognosis. The doctor should be able to maintain an adequate level of nonverbal communication even in difficult circumstances.

According to the materials of the World Health Organization, only about 50% of patients with chronic diseases in developed countries comply with treatment recommendations, including a medicamentous treatment. To a

certain extent, inappropriate psychological approach of a medical specialist is also one of the causes (WHO, 2003).

Consequences for clinical practice

Psychological approach can either enhance the pharmacotherapy effect or lead to situation where a lower dosage of medication is sufficient (Doering and Rief, 2012). Some practical possibilities are offered hereunder.

The medical specialist should be aware of the ritual dimension of his work. The medications should be handled with a certain solemnity and respect. The medical specialist is responsible both morally and legally for the administration of medications. Thus, caution, concentration and, certain level of hygiene and carefulness are very advisable. All these aspects also have a positive effect on patients.

The laboratory test itself improved chest pain (Sox, 1981). The doctor should be aware that even tests that did not bring significant information could be effective. For example, the doctor can inform the patient that "This examination excluded the possibility that you suffer from certain disorders. This is good and promising news."

An appeal to authority. The doctor can say that this medication proved to be highly effective in similar difficulties, and is recommended by many leading experts in other countries.

The doctor should appreciate even small advances in treatment, e.g. by pointing to an improvement in the disease compared to the initial state of treatment.

A positive story or example. The doctor can mention that another patient with similar difficulties recovered very soon. A contact with people who manage a certain problem very well has also a similar effect. This happens for example in self-help organizations such as Alcoholics Anonymous or therapeutic clubs.

The patient's trust is also strengthened by attentive listening to the patient and by asking appropriate questions. This may take some time, but the time is spent effectively. Patients to whom the doctor listened attentively complained less often.

The patient should be informed adequately about the prescribed medication. He should also know the possible side effects. This standard part of medical practice can be used as follows: "Such a strong and effective medication can have some side effects. These side effects are rare but you should know about them." Explanation what to expect from the medication should be comprehensive, illustrative and should take into consideration the patient's belief system.

From a psychological perspective, detailed instructions about the drug administration are very important. The medical specialist thus communicates indirectly that he considers this form of treatment significant.

Conclusion and summary

The efficacy of medications can be significantly increased by psychological means. In pharmacological research it is essential to distinguish the psychological and biological effects of a certain substance. On the contrary, in clinical practice, it is important the psychological and biological mechanisms intensify each other.

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Prim. MUDr. Karel Nešpor, CSc.
www.drnespor.eu
www.youtube.com/drnespor
Department of Addiction Treatment – Men Section
Psychiatric Hospital Prague – Bohnice
181 02 Prague 8

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