Successful new treatment for phantom pain reduction of amputated

The amputation of a limb is generally followed by a sensation that the de afferent body part is still present. The phantom pain aftereffect occurs in 50-80% of the patients who have undergone this type of surgery, and the most frequently reported types of pain include burning, tingling, and cramping. Phantom pain generally resolves without treatment, except in cases in which chronic phantom pain develops. Although various treatments have been presented for chronic phantom pain, there is little proof supporting the benefits of pharmacological treatments, surgery or interventional techniques, electrical nerve stimulation, psychological therapies, etc. However, Hungarian researchers (BioLabor EMOST Research Group) managed to reduce the chronic phantom limb pain by Electromagnetic-Own-Signal-Treatment (EMOST) method under clinical circumstances. The EMOST method may present a breakthrough in the treatment of patients who undergo a major amputation due to vasoconstriction or diabetes or for amputated military veterans in the world.

There is increasing evidence that both peripheral and central neural mechanisms are involved in phantom pain, but the pathophysiological mechanisms of phantom pain remain unknown. According to Hungarian researchers (Dr. Erdőfi-Szabó, Dr. Bókkon, Dr. Till), the nerve impulse conduction could rewrite the body-memory if the nervous system would be able to rewrite the actual pain and feeling patterns by new neutral nerve stimuli. However, in the absence of limb is hardly possible rewrite actual pain and feeling patterns via local/peripheral stimulation. The Hungarian research group has managed to develop a new Own Signal Treatment (EMOST) that induces a self-rechecking of nervous system and can overwrite patterns of phantom pain sensation by neutral stimuli.

In 2010, the EMOST method was examined under clinical conditions in the National Institute for Medical Rehabilitation (OORI). During and after the patients had completed the six EMOST treatments, they did not receive any additional treatments related to the reduction or elimination of phantom limb pain. The reduction of phantom limb pain by EMOST was statistically significant as compared to the controls. After the patients had completed the six EMOST treatments, five of 10 treated patients reported about 50 percent reduction of their pain frequency and intensity. In two of 10 treated patients phantom pain frequency and intensity are decreased with 25 percent, and three of 10 treated patients experienced almost elimination of their phantom pain.

However, the EMOST treatments not only significantly reduced phantom pain of amputated, but also revealed additional benefits at most of the patients after EMOST expositions, such as improvement of their sleep and mood quality. These results were published in international scientific journals as Electromagnetic Biology and Medicine, European Biophysics Journal and Nature Precedings and were presented as a new successful method for the professional audience in congresses as International Epidemiology Congress and European Biophysics Congress.

To assess the long-term effect of EMOST on phantom pain reduction, treated amputated patients were visited after one year of clinical trials. In the cases of treated amputated patients there were no other re-amputations (that unfortunately are very common and frightful in amputated patients with diabetes and vasoconstriction due to interrupt of normal venous and arterial networks) compared to control group. In the last 2 years the OORI amputation department continuously used the EMOST treatments to amputated patients. Their experiences indicate that the EMOST treatments improved wound healing with about 50% after amputations, reduced the frequency of complications and re-amputations as well as improved sleep and mood quality (i.e. reduced stress levels), reported Dr. Attila Till's chief physician at department of amputation.


LTC Gadson, US ARMY

Since, currently, there is no known effective method to reduce chronic phantom pain; the EMOST can offer new opportunities in the future for the rehabilitation of amputees worldwide.

EMOST application related to possible causes of amputation:

- Cardiovascular diseases
- Consequences of diabetes
- Transport (and other) accidents
- Injuries in natural disasters
- Injuries under military missions
- Tactical civilian injuries

Scientific publications about EMOST:

Source: Dr. Erdőfi-Szabó Attila