Abstract summary

BEMER® physical vascular therapy. From the point of view of international researchers and clinicians.
BEMER Physical Vascular Therapy
from the Point of View of International
Researchers and Clinicians

A synopsis of presentations and reports made at conferences and symposiums relating to investigations, case reports, pilot studies and clinical trials for different indications in different fields.

Abstract Summary

Compiled by the Medical Expert Center (MEC) of BEMER Int. AG
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It is through our eyes that we absorb most information from our environment.

In a study, people were asked the fundamental question: “Which would you prefer: impaired vision or restricted mobility?” Most respondents said they would prefer to retain their eyesight.

According to figures from the WHO, there are 314 million people with poor eyesight in the world, including 45 million who are completely blind. In the developed world, less than three in every 1,000 people go blind compared to ten out of every 1,000 in Africa. The two most common causes of blindness (in developed societies) are ophthalmologic complications of diabetes (diabetic retinopathy) and/or shrinkage of the point of clear vision in old age (macula lutea degeneration). The anatomical unit responsible for clear vision is extraordinarily small. Its diameter is around 2 mm while its thickness in the area around the foveola is 185 µ on average, increasing to an average of 250 µ in the 2 mm area.

In many instances, we do not know what the primary cause of macula lutea is, but we are certain that insufficient oxygen supply is the most significant factor. This can be influenced by improving circulation.

I shall present BEMER’s therapeutic effect as a physical agent by way of three case studies.

1. The visual acuity of 66-year old female patient Gy. B is 0.7 in the right eye while, with the left eye, the patient can only read line by line with the reading material directly in front of her. She feels that her eyesight – especially in the left eye – is getting worse every day. Wearing glasses or contact lenses does not improve the situation. Bulb in order, refractive media clear. Fundus: pale papilla with well defined edge. From middle narrower arteries CI full veins, at the point of clear-sightedness, the retina narrowed at both sides. Abnormalities and senile plaques at the level of the pigmented epithelium. Exudation not evident. Through basic mat therapy and daily application of the intensive applicator around the temples, the patient’s visual acuity improved to 0.9 (0.15 in the left eye) after three months. After an OCT (optical coherence tomography) examination, it was clear that the thickness of the retina had not changed. The patient’s functioning improved while one welcome side-effect of the treatment was that she was able to reduce the dose of medication she was taking to improve her circulation. Her condition has not changed in eight months.

2. With glasses, the visual acuity of 79-year old female patient G. is 0.4; in the case of the left eye, she has to follow the line she is reading using her finger. Bulb is in order. A small degree of phacosclerosis is evident in the eye lens at both sides. Fundus: pale papilla on both sides with well defined edge. From middle narrower blood vessels, senile plaques on the right side in the macula and all around as well as distributed on the periphery. On the left side in the area around the macula, irregularly pigmented atrophic marks, underneath some choroidal blood vessels are visible. Healthy looking periphery. The patient’s biggest
complaint is that she finds it more and more difficult to read. Through basic mat therapy and daily application of the intensive applicator around the temples, the patient’s visual acuity improved to 0.6 (or 2 m when reading line by line with the reading material directly in front of her) after six weeks (with glasses). Over this period, the fundus image remained the same. The patient’s functioning improved, she feels she can read with less difficulty than before and she has a better sense of spatial security. A welcome side-effect of the treatment was the disappearance of the patient’s earlier symptoms of constipation.

3. M.B., 50-year old male patient. In the right eye, the patient’s visual acuity is 0.4 (with glasses) compared with an uncertain 1.0 in the left eye. The patient complains that he can only barely see colors with his right eye, that his vision is also deteriorating in the left eye and, when looking with both eyes, that the weak right eye is interfering with his vision. According to the patient, this situation developed over a period of around six months. During the first two weeks of the initial study, visual acuity in the patient’s right eye worsened to 4 m reading line by line with the reading material directly in front of him. Bulb in order, clear refractive media. Fundus: healthy papilla with well-defined edge, phys. blood vessel. On the right side, pigment abnormalities evident in the macula along with shallow neuroretinal detachment. At the left side, shallow, minor detachment can be seen under the foveola. Using basic mat therapy and daily application of the intensive applicator around the temples – three times a week – the patient’s visual acuity improved after three months, returning once more to 0.4 in the right eye (in addition to a resumption of the ability to see colours, which the patient is delighted about), with a figure of 1.0 for the left eye. Fundus: on the right side, the unevenness of pigment remained, while detachment is no longer evident. On the left side, PE irregularities could not be seen using the biomicroscope. As a positive side-effect, the patient’s cardiac arrhythmia ceased to be a problem. The patient’s condition has not deteriorated since March 2009.

In the first two cases, the diagnosis was macula lutea and AREDS 3 in the better eye in addition to AREDS 4 in the weaker eye. In the third case, the diagnosis was diffuse pigment epitheliopathy and central serous chorioretinopathy. Neovascularisation (formation of new blood vessels) was not observed in any of the patients.

Summary: The precise triggering cause of the deterioration of vision described in the three case studies has not been clarified. Functioning (sharpness of vision, ability to see colours, peripheral vision) improved as a result of the circulation-enhancing effect of BEMER therapy.

Abstract on the consensus conference held in Freudenstadt, 2. October 2010

EXPERIENCES WITH THE APPLICATION OF THE BEMER DEVICE IN THE TREATMENT OF DIABETIC MACULAR EDEMA

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During the course of the pilot study (the aim of which was to evaluate the efficacy, safety and tolerance of treatment with the BEMER 3000 device on patients suffering from diabetic macular edema with concomitant diabetic retinopathy), I had the opportunity to observe the electromagnetic effect of the device on the diabetic macular edema of five patients.
Theoretical assumptions for the efficacy of the device

Diabetic retinopathy is characterized by a range of disturbances, of which I believe the following are the most significant in terms of the effectiveness of the device:

Hyperglycemia and oxidative stress

The increase in the concentration of hexose in the blood of diabetics supports the biochemical theory of hyperglycemia being a core factor in the development of diabetic retinopathy. The cell membrane is practically impermeable for sorbitol, which leads to an accumulation of the latter in the patient’s tissue as well as to changes in oncotic pressure. The excessive build-up of advanced glycation end-products (AGE for short) also encourages microvascular changes in the retinal blood vessels. As a direct result of their effect, these products not only alter the rigidity of the blood vessels; they also damage the connective tissue. The oxidative stress that accompanies hyperglycemia is the reason for the imbalance between free radicals and the antioxidant cell protection system. The resulting pseudohypoxia can damage the cell membrane – through protein denaturation and/or as a result of the DNA damage caused by the conversion of glucose into toxic peroxide and oxoaldehyde. The reduction in glucose transporter 1 caused by long-lasting hyperglycemia leads to a reduced supply of glucose to the cells (which appears paradoxical), followed by apoptosis. Together with Ca2+ and other agents, diacylglycerol (DG) forms a protein kinase C (PKC) activation complex. As a result, DG is a precursor for prostaglandin synthesis. For diabetics in particular, the enzyme activity of PKC and DG is significantly higher. It was established that PKC not only has a major impact on blood vessel permeability but also on contractility, blood flow and angiogenesis. It also has an effect on the cell adhesion molecules and on cytosine as transforming growth factor-β. The vascular endothelial growth factor (VEGF) is also activated by PKC in the event of severe hypoxia.

Hemorheological changes

Long-lasting hyperglycemia leads to disturbances in microcirculation through a number of different mechanisms. This is accompanied by capillary hyperpermeability. Hyperglycemia raises blood viscosity and alters the concentration of plasmatic proteins. At the same time, thrombocyte aggregation is increased. Changes in the rigidity and flexibility of erythrocytes lead to microtraumatization of the capillary endothelium, which is accompanied by a simultaneous increase in the amount of Von Willebrand factor released, which has a direct impact on aggregation. Mechanical damage is obviously more striking where there is accelerated blood flow through the capillaries, which is concomitant with hyperglycemia. At the same time however, oxygenation decreases considerably. The reduced oxygen-transport function of the erythrocytes in diabetics also has a negative effect on the development of diabetic retinopathy, while leukocytes also play an important role in the pathogenesis of diabetic retinopathy. Leukocytes are almost as large as the diameter of a capillary. Thanks to their appreciable plasticity, they can pass through the capillaries of a healthy individual. In diabetics however, the adhesion of leukocytes to the endothelium is increased, which may result in the release of proteolytic enzymes. With the increase in blood flow resistance, oxygen radicals are also released at the same time. These changes may also result in capillary occlusion. The glycated Golgi enzyme clearly has an influence on the increased adhesion too.
Hemodynamic changes

At the onset of uncontrolled diabetes, there are changes in the way blood flows through the capillaries. For example, blood flow is significantly increased as a result of the experimentally induced glycemia of approximately 25 mmol/l. A similar, though less significant, phenomenon was also observed in hypoglycemia. Blood flow changes lead directly to a reduction in vascular reactivity. In animal models, it has been proven that these changes too damage the vascular endothelium. Blood elements certainly play a role too in this damage – through mechanical means, as a result of the change in their rigidity. As mentioned already, microtraumatization of the capillary endothelium is expected. Paradoxically, increased blood flow through the capillaries results in a transformation from laminar flow to turbulent flow. When diabetic retinopathy develops, blood flow in the middle periphery of the retina decreases. This is a protective mechanism, by which normal blood flow through the retina is conserved in a functionally more important central area. The perifoveal area (where blood flow drops dramatically) is not damaged until later, when a further reduction in blood flow through the retina occurs and extensive ischemic zones are created.

Retinal pigment epithelium (RPE)

The retinal pigment endothelium (RPE) plays a major role in the development of diabetic retinopathy. In diabetics, there is an increase in the concentration of sorbitol in the RPE, which leads to primary changes in the osmotic gradient as well as in Na⁺-K⁺-ATP activity. This mechanism explains first and foremost the disturbances in nerve cell metabolism, the ganglion cell layer as well as the granular layer of the retina. Both hypoglycemia and hypoglycaemia lead to a reduction of intraocular pressure in diabetics. This relative hypotonia can cause the structure of the RPE to be altered both morphologically and functionally. Here, we talk of an infolding of the cell membrane on to the Bruch’s membrane of the RPE cells adjoining the lamina choriocapillaris. The functional alteration of the RPE can be one of the causes for the collapse of the inner and outer blood retina barrier. The abnormal transportation by the RPE therefore facilitates some proliferative factors such as slight penetration into the vitreous humour as well as an increase in the proliferative potential of the eye. The perfusion pressure of the retinal blood vessels is defined by the difference between the intravascular and intraocular pressure. The reduction in intraocular tension leads to a relative increase in perfusion pressure, which in turn can also lead however to a progression in venal dilation to the point of subsequent collapse of the autoregulatory mechanisms. The relative increase in perfusion pressure also leads to more noticeable exudation as well as to a weakening of the capillary walls and plays a role in the development of microaneurysms – a frequent sign of diabetic retinopathy. This mechanism would finally provide an explanation as to why brittle pericytes in the retina are more often damaged than those in other organs (with the exception of the heart), where differing perfusion pressures are also present.

Based on these pathogenetic mechanisms, we have assumed a potential effect on diabetic retinopathy and/or on diabetic macular edema.
Method of evaluation and results

In order to evaluate the outcomes of the treatment, highly specialized methods were used, including fluoroangiography, 7-field fundus photography based on the ETDRS (Early Treatment Diabetic Retinopathy Study), optical coherence tomography, contactless tonometry and others.

A total of seven patients were observed during the study. Two patients refused treatment immediately after receiving the device: one younger male patient because he found it difficult to adhere to the treatment regime (travels a lot as part of his work) and an older female patient because she was worried the device could harm her. This means five patients completed the study. Of these, three patients continued with the treatment in a follow-up study. Throughout the course of the study, neither any negative effects from the treatment nor any cataractogenicity were observed. In the case of two patients, a progression of symptoms was observed. However, compliance was poor in these two instances. Grid laser photoacoagulation had to be performed, thereby making the necessity for laser treatment clear. For one of the patients, who demonstrated excellent compliance, there was a clinically significant improvement in their eye symptoms while their biochemical parameters and cognitive intrusion also improved, albeit to an insignificant degree. Amongst other things, the patient attributes this improvement to the more regular treatment regime he followed. In two other patients, accelerated reabsorption of the macular edema was observed after laser treatment with grid photoacoagulation. This can clearly be ascribed to the improved hemodynamics and hemorheology of the blood and blood elements, including the retinal capillaries. In the case of very compliant patients, there was probably a change in the haemodynamic and hemorheological conditions in the eye, with greater probability of this where there was overall application of the device. This is also confirmed by QOL – a deterioration in neuropathic problems. At present, we can only speculate on other effects (ATP etc.) A direct influence on the capillary network cannot, in terms of the position of local application – the bony structure of the eye socket – really be assumed.

Application options

I see short-term, intensive application of the BEMER 3000 device as the focus of the product’s clinical application. The device should be applied before treatment of a clinically significant macular edema, which would, by reducing the edema, make laser treatment easier for patients with focal and diffuse maculopathy. This presupposes regular daily application, i.e. patients who are very compliant. The treatment is suitable for all forms of diabetic retinopathy – from the early stage right up to the moderately advanced stage – but not however for clinically significant macular edema. The third indication would be clinically significant macular edema of the types mentioned above, which do not respond satisfactorily to laser treatment.

Follow-up study

Thanks to the kindness of BEMER, I have the opportunity to observe three patients whose condition has improved after the pilot phase of the study. In the case of two patients whose compliance with the treatment regime is very good, their condition is gradually improving (or the reduction in the edema is stabilizing), with disintegration of the hard epicenters visible from the pictures. According to the subjects themselves, they are tolerating the treatment very well and report a significant reduction in their neu-
ropathic complaints. Most interesting of all is the third patient, who was originally the most compliant. Because of acute back pain, he stopped using the device completely. The clinical findings for the retina deteriorated quite dramatically within a period of four months, although not to the point where laser intervention would have been necessary. The patient was informed on this deterioration and consequently began using the device once again. It remains to be seen if and when his condition will improve. All patients were observed in accordance with the protocol of the preceding study.
DERMATOLOGY

Presentation made at the Budapest conference of 27. March 2011

OUR EXPERIENCES USING BEMER THERAPY IN THE TREATMENT OF CHRONIC WOUNDS AND IN OTHER DERMATOLOGICAL SYMPTOMS

Dr. Ilona Horváth; Dermatologist, BIO-MED Private Consultancy Practice, Gödöllő

BEMER pulsating electromagnetic field therapy, which has a positive effect on the microcirculation-boosting, immune-shaping and self-regulating mechanisms of the body, offers additional therapy options for many skin conditions. Of outstanding significance here is its role in the healing of both acute and chronic wounds.

From an epidemiological point of view, successful treatment of chronic wounds with different aetiology is of huge significance as 2-3 % of the population are affected. In cases where complications arise, these can lead to situations that endanger the life of the patient (thrombosis, sepsis, amputation of limbs). Medical care of these complications puts particular financial strain on both the healthcare system and the patient.

The development of chronic wounds is a complex pathological process. Following on from the different factors that cause the wounds, their treatment is a task that is of relevance for several fields, as well as being extremely difficult and expensive, thereby making it much more than an issue of simple wound treatment.

75 % of chronic lower leg wounds occur as a result of chronic venous circulatory deficiencies. Other aetiological factors include diabetes, vasoconstriction, chronic lymphedema, neuropathy, vasulitis, etc. For many patients, the triggering causes may be present simultaneously. In terms of patient outcome, the correct diagnosis and the corresponding complex appropriate treatment are crucial. If the patient’s condition and the character of the change allow it, venous surgery after the ulcer has healed always brings about the best therapeutic result, as the ulcer always develops in an area which, for one reason or another, is occluded from the circulatory system. For those patients for whom venous surgical reconstruction is unsuitable, improving circulation is, generally speaking, extremely difficult. Effective treatment is usually made more difficult by the patient’s metabolic state (diabetes), reduced mobility (due to age, obesity or any earlier amputations) or his/her inability to cooperate (resistance in relation to wearing a compression bandage in the case of patients with chronic venous insufficiency). This means that the optimal therapeutic goal, i.e. that of conclusive healing of the patient, could not, or cannot, always be achieved by us. However, from the point of view of patient quality of life, every ulcer-free year, every toe saved from amputation, is of major significance.

Regardless of the aetiology, the development of the wound can ultimately be traced to a disruption in blood supply to the affected area and the side-effects of this: inadequate tissue metabolism and immune protection. The various effects of BEMER therapy that have been confirmed through clinical trials (the unique effect on vasomotion, an improvement in microcirculation and tissue oxygenation, the increase in biologically accessible energy, the stimulation of protein synthesis) play a decisively positive role in all stages of wound healing. In our private consultancy practice, we have been using BEMER therapy as a complementary treatment for various dermatological symptoms for the past five years. These are our most common areas of application:
- Behandlung von chronischen Unterschenkelwunden, diabetischen Fersenulzera, Ulzera, die als Folge von Hitzepunkten, Amputationsstumpfen oder Wunden entstanden.

- Unterstützung der Heilung von akuten Traumata sowie Traumata, die auf die Haut und weiche Körperpartien wirken.

- Komplementäre Behandlung post-herpatische Neuralgien.

- Reduzierung von Erythema, Schwellung und Juckreiz bei Patienten, die an Allergien leiden.

Innerhalb der Ambulanzpflege erhalten unsere Patienten, im Mittel, zwei bis drei BEMER-Therapiesitzungen pro Woche, jede für 60 Minuten. Werden die Patienten auf Grund von Mobilitätsproblemen, in schlechterem Allgemeinzustand oder im Alter nicht mehr mobil, werden sie zu Hause von unserem technischen Hilfspersonal versorgt. Wo immer nötig, können wir Patienten sogar mit einem BEMER-Gerät zur häuslichen Verwendung ausstatten.


Präsentation auf der 3. SAMET-Konferenz, Geroldswil, 3. September 2005

EFFECT OF BEMER THERAPY ON WARTS – APPLICATION OBSERVATION

Dr. sc. nat. Alex Meier; eidg. Dipl.-Apotheker FPH, Apotheke (Pharmacy) Dr. A. Meier, Bremgarten


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during the light shower applications, which made him wince. The patient’s warts on the untreated foot remained unchanged during the observation period, with none of them healing.

Result: The wart receded fully without any additional treatment measures. A second wart, located at the edge of the area treated with the beam of light coming from the light shower, also receded.

Conclusion: That fact that it was only the warts on the treated foot that receded makes it unlikely that the healing was spontaneous in nature. Application of the BEMER 3000 light shower seems to be effective for warts and represents a comfortable, complication-free treatment approach. The treatments should be applied at short intervals in order to ensure that healing is not excessively protracted.

Presentation at the 3rd SAMET conference, Geroldswil, 3. September 2005

INFLUENCE OF COMBINED BEMER 3000 MAGNETIC FIELD THERAPY WITH HUMAN LIGHT SHOWER ON THE BEDSORES OF IMMOBILE PATIENTS

Bc. Kutálová Petra; Head of the Rehabilitation Section at ÚSP Hrabyně, Czech Republic, MUDr. Vladimír Pilaček; Director of the ÚSP Hrabyně, Czech Republic

The Center for the Social Care of the Disabled in Hrabyne is one of the largest and most well-known facilities of its kind in the Czech Republic. It was back in 1973 that the first physically handicapped residents moved in, becoming the first to live in the facility. The Center provides holistic support and care to adults with severe disabilities, both congenital and acquired, including post-traumatic paraplegia, tetraplegia, multiple sclerosis, cerebrovascular insult (CVI), progressive muscular dystrophy and others. 170 people are cared for at the center. The state of their health can no longer be altered through therapy but can be helped to some extent through rehabilitation. Most of the facility’s patients are immobile and therefore at high risk of developing bedsores. Over the years, we tried with varying degrees of success to address this problem using tried and tested therapies.

The duration of bedsores treatment is influenced by various different factors:

1. The location of the bedsores – those in the lower back and in the area around the ischial tuberosity can have the most serious consequences (in the case of incontinent patients, there is also the risk of infection from excrement);

2. The severity of the bedsores – the longest healing period is required for bedsores of severity levels 3 and 4 (necrosis, ulcers with weeping edges and the destruction of all tissue layers);

3. Prevention of the development of bedsores – it is absolutely imperative to regularly reposition the patients. Hygiene is also important and the patient’s nutrition plays a crucial role.

In February 2005, we began using BEMER 3000 magnetic field therapy, i.e. mat, intensive applicator and light shower, in addition to the above-mentioned treatment methods.
Even during the first weeks of treatment, we observed a clear improvement when the BEMER 3000 device was used in combination with the intensive applicator and the light shower.

**As an example, we can mention:** a female paraplegic patient with a bedsore of severity level 3 and a diameter of around 10 cm in the area around her ischial tuberosity, which had been treated for two years without success. Three weeks after beginning therapy with the BEMER 3000 device, a regression of the wound edges was visible. By July 2005, the bedsore had healed by around 60%.

In the case of bedsores of severity levels 1 and 2 and similar skin problems, improvements were evident after just two to three days, with the sore having healed completely after one week.

We think that the six months in which we have been using the BEMER 3000 device is too short a period to discover all its beneficial effects. At the same time however, these six months have been long enough for us to determine that the BEMER 3000 device can have a significant positive effect on the previously problematic long-term therapy used to treat the bedsores. We have also improved quality of care in other areas too, e.g. in the use of the intensive applicator to treat pain in the shoulder region. In the muscle attachments in the neck area, considerable reductions in pain were determined, sometimes even after the first applications.

In recent times, we have noticed increased interest in the application of the BEMER 3000 in combination with the light shower for our residents with health problems, e.g. muscle contractures, scar infiltrations in patients suffering from arthrosis, etc. For this reason, we have decided to purchase the BEMER 3000 device and are convinced that we will discover all its application possibilities in the near future.
OTOLARYNGOLOGY

Presentation made at the Budapest conference of 26. March 2011

OUR EXPERIENCES WITH BIOELECTROMAGNETIC ENERGY REGULATION TREATMENT (BEMER) ON PATIENTS WITH SUBJECTIVE TINNITUS

Dr. Imre Szilágyi; Dr. István Bugyi, Szentes Hospital, ENT & Urology Matrix Department
(Head Assistant Medical Director for ENT, Dr. Imre Szilágyi)

Summary: The author makes it known which method of treatment for subjective tinnitus he employs. The method in question is bioelectrical magnetic energy regulation – BEMER therapy for short – which applies the beneficial physiological effects of the pulsating electromagnetic field to the human body. The treatment has a positive effect on the nervous system and improves microcirculation in the various organs of the body.

The cases included in our study were treated as in-patients in the hospital. The BEMER therapy was applied by way of the creation of a control group, in the shape of a randomized, double-blind clinical trial. The patients were divided up accordingly into two groups. The patients in one of the groups received 200 mg of pentoxifylline daily as an infusion and 2 x 1,200 mg of piracetam p.o. in addition to receiving BEMER treatment. The patients in the other group received the same treatment; however, in the BEMER phase of treatment, the device was in a non-effective state, i.e. the treatment was merely simulated. The treatments were scheduled in such a way that each patient who received real therapy was followed by a patient receiving the placebo treatment. The trials and their evaluation were carried out by two different people. The author performed a statistical analysis of the healing results from each group. The calculations proved that the decrease in complaints in the group who had received BEMER treatment was significantly higher than in those patients from the control group.

Presentation made at the Budapest conference of 26. March 2011

EXPERIENCES OF AN AUDIOLOGIST WITH BEMER THERAPY

Dr. Anita Gáborján, Ph.D; Semmelweis University, Budapest; ENT and Head and Throat Surgery Clinic

The audiologist’s job includes explaining the reasons for loss of hearing and tinnitus and planning what treatment to use.

In the presentation, individual cases of acute and chronic hearing loss and/or cases of illness brought about by tinnitus are presented. Where detailed investigation confirmed a functional disorder originating in the inner ear circulatory system, bioelectromagnetic field therapy was then applied in addition to treatment with drugs.

Based on the clear sound and hearing threshold examination and an assessment of tinnitus using a subjective scale, we ascertained an improvement in a large percentage of patients after the application of BEMER therapy.
MAGNETIC FIELD THERAPY WITH THE BEMER 3000 PRO SIGNAL IN HUNGARIAN ENT DEPARTMENTS

Habil József Géza Kiss, DPhys, PhD, CSc; Director of the Audiology Department at the University of Szeged, Hungary

Magnetic field therapy using the BEMER 3000 signal was tested for a new range of indications for specific cases of tinnitus, balance disorders and loss of hearing. The results of the study, carried out in the ENT (ear, nose and throat) departments of Hungarian hospitals, are summarized below.

67 patients with an average age of 61 years participated in the study. The youngest patient was 34 years old, the eldest 86 years. Two-thirds of the patients were women, one-third men. For all participating patients, a complete clinical investigation was performed in accordance with the relevant guidelines. Magnetic field therapy was given after treatment with drugs, the latter of which proved, in many instances, to be inadequate, or, in some cases, was rejected by patients because of the possible side-effects. The BEMER pulse, an internationally patented electromagnetic field, improves circulation (especially in the capillaries), activates the metabolism, stimulates cell regeneration, energizes cells, improves oxygen supply and blood circulation characteristics as well as relaxing the body’s musculature. Tinnitus, neurosensory hearing loss and balance disturbances are often due to poor circulation, diseases of the cervical vertebrae, muscle cramps and even nervousness. For this reason, good results may be expected following treatment of such conditions with the BEMER method.

Patients received ten 28-minute treatments. Each session consisted of an 8-minute prolonged treatment on a mat (program P1), followed by a 20-minute prolonged treatment with an intensive applicator (program P4) applied over the neck, occipital and retroauricular regions.

In our study, an improvement, i.e. an abatement in symptoms, was reported in 65% of cases. In 35% of cases, the patients’ symptoms did not improve. In no instance was any deterioration in the condition observed. During treatment, most patients reported a tingling sensation, drowsiness and a feeling of relaxation. Some felt energised. A large percentage of patients noticed an improvement in joint trouble, sleep disturbances and vascular trouble as well as reporting increased activity overall.
CANCERS

Presentation made at the consensus conference held in Freudenstadt on 2. October 2010

THE EFFECT OF THE PULSATING ELECTROMAGNETIC FIELD (BEMER 3000) ON THE
GROWTH OF THE T-CELL LYMPHOMA EL 4 IN A TRADITIONAL C57BL/6 AND
NU/NU-CD-1 TRIAL MOUSE

Prof. Dr. Blanka Říhová, Director of the Microbiology Institute at the Academy of Sciences of the Czech Republic

The widespread concern about whether or not electrical and magnetic fields (EMF) can have an effect on human health has been raised and publicized in epidemiological studies since the 1980s.

Our earlier work showed that pulsating electromagnetic fields (EMF, BEMER 3000) slowed down tumor growth in experimental "oncomice", namely the growth of the EL 4 T-cell lymphoma (H-2b, Thy 1.2) in homogeneous strain C57Bl/6, i.e. mice with normal immune systems, and/or in immunodeficient nu/nu-CD-1 mice. The aim of the study was to compare the effects of EMF on mice exposed to the BEMER 3000 magnetic field four, or 21, days before subcutaneous transplantation of the experimental cancer cell series (1 x 105 T-cell lymphoma cells), followed by exposure every four hours for 30 minutes.

The EMF's intensity was rated either 1, 3, 6 or 10, i.e. 3.5 μT, 10 μT, 21 μT oder 35 μT. The animals were checked visually every day while the size of the tumor was measured every second day. The normal and the immunodeficient (bald) mice were compared in order to determine the role of congenital (natural or species-characteristic) or adapted (specific) immunity in how EMF affects tumor growth.

The imaging of both the normal and immunodeficient experimental animals in the EMF brings about a reduction in growth of the EL4 tumor and, as a result, increased longevity.

A partial reduction in tumor size was achieved in mice exposed to levels 1, 3 and 10 with the best results being observed at level 6.

The difference between the test group exposed to the EMF at four days before the cancer cell series was transplanted and the group exposed to it 21 days in advance of transplantation was not significant. In comparison, the effect of the electromagnetic field was more pronounced in the immunodeficient mice than in the normal ones.

Furthermore, this study provides evidence of the anti-proliferative effects induced by the pulsating EMF (BEMER 3000) on tumor cells and does not support the hypothesis that self-exposure in the EMF could be a risk factor for developing tumors.

For the future, we are planning a combined therapy consisting of electromagnetic field treatment and chemotherapy, using a new generation of a targeted macromolecular prodrug polymer.
INTERNAL MEDICINE

DIABETOLOGY

Presentation made at the Budapest conference of 26. March 2011

THE POSSIBILITIES FOR BEMER 3000 TREATMENT IN LONG-TERM DIABETES COMPLICATIONS

Dr. Margit Miléder; Ferenc Csolnoky Hospital, Komitat Veszprem, Center for Internal Medicine, Diabetes and Metabolic Disorders

Nowadays, prevention and treatment of specific long-term complications is a fundamental issue in the field of diabetology.

Despite early diagnosis and sophisticated treatment of diabetes patients and the ever-more exacting targets set, the aims of the St. Vincent’s Declaration have not been met. Today in Hungary, 15% of diabetes patients (90,000 people) can expect to develop a leg ulcer at least once in their lifetime. This also means that a greater rate of amputations can be anticipated. Medical treatment uses up around 80% of the resources available for this entire group of patients.

Beyond conventional approaches, more and more alternative treatment methods are now available. Clinical trials based on GCP (good clinical practice) principles have been carried out in different areas using the electromagnetic field characteristic of the BEMER 3000. Improvements in microcirculation and in immune responses as well as an acceleration in wound healing and an improvement in general surgical and orthopedic symptoms was shown. In the specialized area of research that is the long-term complications of diabetes, these areas of investigation are of particular significance in the prevention and treatment of diabetic leg. Our study is a retrospective gathering of data regarding the way in which BEMER 3000 treatment influences carbohydrate metabolism, ankle-arm index values and calibrated tuning fork values (pain sensitivity according to the VAS scale) as well as the speed at which the wound heals.

Patients/methods: A retrospective data evaluation based on the information available on 35 T2 diabetes patients (HbAlc, B/K index, calibrated tuning fork, VAS and/or photographic and MR documentation) was performed.

The patients availed of the BEMER 3000 treatment because of long-term diabetes complications (diabetic leg ulcer, neuropathic pains, rapid deterioration in eyesight, feelings of dizziness, tinnitus, aseptic femoral head necrosis) that were not responding appropriately to treatment with drugs. The treatment was given 15 to 20 times, each session lasting 30 - 45 minutes. The B/K index, the tuning fork test and the filling out of the VAS questionnaire took place at the beginning of the treatment and at the last treatment, while in the case of the HbAlc values, the final value before treatment and a value taken within three months of treatment were analyzed. Results: mean HbAlc value before treatment = 7.71 (SD 1.567), control mean HbAlc value = 7.325 (SD 1.238). Although the change of -0.917 (p = 0.053) did not reach the significance level, the trend is identifiable. Initial mean value for the B/K index: Jo 0.88, min. 0.53,
max. 1.13 (SD 0.264); B0 0.94, min. 0.62, max. 1.1 (SD 0.169). Value for the B/K index after treatment: Jo 1.02, min. 0.57, max. 1.86 (SD 0.287) (p = 0.037). B0 1.04 min. 0.72, max. 1.75 (SD 0.272) (p = 0.048).

Initial mean value for the calibrated tuning fork test Jo 5.1, after 5.83 (p = 0.209) B0 before 4.95, after 5.83 (p = 0.231). Mean VAS value dropped from 66 mm to 30 mm.

Discussion of findings: The vasomotion after effect of the BEMER 3000 treatment resulted in a significant improvement in the B/K index. The connection between the improvement in arterial vasomotion and the change in the ABI value indicating the functioning of the small and medium-sized arteries requires further investigation. The results of the HbAlc and tuning fork test show a positive trend. The 50% reduction in the average VAS value shows the clear abatement in the level of pain felt by the patients and the associated improvement in their quality of life. In terms of the healing of diabetic ulcers and stump wounds, we achieved noteworthy results and did not have to refer any patients for further surgery during the trial period.

Conclusion: As a complementary therapy option, BEMER 3000 treatment can play an effective role in the prevention of diabetes complications when treating microangiopathic complications.

ENDOCRINOLOGY

Presentation made at the Budapest conference of 26. March 2011

APPLICATION OF BEMER THERAPY IN ENDOCRINE AND METABOLIC DISORDERS
Dr. Imre Balogh, PhD; Dentofit 2000 Bt, Technical Director, Debrecen, Tócó Healing Center

Over the course of the more than ten years in which BEMER treatment (special low-energy electromagnetic field) has been used, it has become more and more apparent that, in addition to treating complaints relating to the locomotor system, BEMER therapy can also claim its rightful place in everyday work in other areas of medicine. The microcirculation system is involved sooner or later in the development and then maintenance of most illnesses “circulus vitiosus”, with the positive effects of BEMER therapy on microcirculation having already been proven during the trials. At present however, the mode of action exerted on immunological and hormonal functioning as well as on local autocrine-paracrine regulation is not well understood. During the course of our private-practice study, we successfully used BEMER therapy on many occasions to treat selected cases of endocrinological and metabolic medical conditions. Treatment with the pulsating electromagnetic field was generally used as an adjuvant in addition to the corresponding endocrine therapy. Even with BEMER monotherapy, there were instances where the recommended treatment could not be given (because of side-effects, concomitant illnesses) as well as because the patient rejected the recommended conventional therapy.

With a few exceptions, I will deal in this presentation with the most common health problems that affect the general population. Along with properly controlled endocrine treatment, the significant alleviation of persistent tiredness could, in the cases of hypothyroidism and hypoadrenia, be
quantified with the aid of the Rand questionnaire. Along with the BEMER treatment administered in the case of autoimmune thyroiditis, a reduction in the aTPO titre (indicating the degree of activity of the illness) was also seen. During the study of post-partum thyroiditis (PPT) in women who have given birth, both the recurrence after recent delivery so typical of the illness, as well as the transition to often permanent hypothyroidism, seem to be prevented after BEMER treatment. In mild cases of endocrine orbitopathy (EOP) not requiring treatment with steroids, BEMER therapy showed itself to be suitable for reducing inflammation (the theory is that the TNF-α blocking mode of action as well as the therapy’s effects on microcirculation come into play). During the course of the BEMER treatments, the possibility of alternative influencing of the insulin resistance that also plays such a crucial role in the pathogenesis of type 2 diabetes mellitus as well as of polycystic ovary syndrome (PCOS) came up too. In the area of erectile dysfunction (impotence), BEMER may bring a significant therapeutic breakthrough in patients who before could not be treated, or not be treated effectively, with conservative treatment regimes. The investigation showed that the introduction of BEMER therapy was successful in preventing osteoporosis in patients at high risk from the disease. In patients already suffering from the condition, BEMER therapy ensures an alleviation of pain in the locomotor system.

VASCULAR DISEASES

Presentation made at the Budapest conference of 26. March 2011

AN INVESTIGATION INTO THE EFFICACY OF BIOELECTROMAGNETIC REGULATION THERAPY AND OF PENTOXIFYLLINE INFUSION THERAPY FOR PERIPHERAL ARTERIAL OCCLUSIVE DISEASE

Dr. Sándor Iván Bernát PhD; HM. State Health Center, Internal Medicine – Angiology

Background: It is acknowledged that pentoxifylline therapy and bioelectromagnetic regulation physiotherapy have a beneficial effect on microcirculation. After bioelectromagnetic regulation therapy, the spontaneous vasomotion of the expanded capillaries, the number of expanded capillaries and the local pO2 all increase. Pentoxifylline increases the plasticity of the erythrocytes and leukocytes while thrombocyte aggregation decreases. Our study was aimed primarily at investigating whether or not the beneficial effect of the alternating magnetic field on the microcirculation of patients suffering from peripheral arterial occlusive disease can be verified, whether or not circulation in the leg improves as a result, and whether or not the patients’ maximum pain-free walking distance can be increased.

Patients/methods: We recruited 30 patients suffering from peripheral arterial occlusive disease (Fontaine stage IIa and IIb) for the study. The criteria for inclusion were: typical symptoms (claudicatio intermittens), pathological changes based on the physical examination, ankle-arm index < 0.9 and that, upon examination with the bidirectional Doppler device, arterial circulatory deficit is indicated. We excluded patients with diseases of the locomotor system, those with severe heart or lung diseases and those suffering from decompensation of the circulatory and respiratory system. The first step (at the selection stage) involved...
determining each patient’s maximum pain-free walking distance with the aid of a treadmill (speed = 3.6 km/h, gradient = 0%). One week later (at the placebo stage), we measured these values once more. The patients were each given the bioelectromagnetic regulation therapy eight times (2 x 8 minutes per session). After treatment, we again measured the patients’ maximum pain-free walking distance. Following this, each patient received eight pentoxifylline treatments (2 x 250 mg pentoxifylline dissolved in 2 x 250 mg infusions daily), after which we once again measured their pain-free and their maximum walking distance.

**Results:** At the end of the placebo stage, the pain-free walking distance had increased by an average of 8.7 % while the maximum walking distance had increased by 11.6 %. This placebo effect is ignored later. After the bioelectromagnetic regulation therapy, the pain-free and the maximum walking distances had increased by 57.4 % (p = 0.005) and 36.6 % (p = 0.042) respectively. The subsequent pentoxifylline-containing infusion therapy increased the pain-free and maximum walking distances by a further 15.5 % and 20.5 % respectively. The combined therapy (bioelectromagnetic regulation and rheological therapy) allowed the values measured to rise by 81.9 % and 84.0 %. Compared with before the therapy was administered, the patients’ ability to walk improved to a significant degree (p = 0.000373 and p = 0.00741). In 43 % of patients, the bioelectromagnetic regulation therapy had good results while the combined treatment gave good to excellent results in 70 % of patients. Discussion of findings: Bioelectromagnetic regulation contributes to improving circulation in the limb primarily through its beneficial effect on the microcirculatory blood vessels (precapillary, capillary and postcapillary vessels) whereas the pentoxifylline infusion treatment helps more to alter the hemorheological parameters (erythrocytes, thrombocytes). The combined treatments complement each other well and gave good to excellent results in 70 % of patients.

**Keywords:** Magnetic therapy, pentoxifylline, peripheral arterial occlusive disease

**Presentation made at the Budapest conference of 26. March 2011**

**EFFECTIVE COMPLEMENTARY TREATMENT OF CIRCULATORY DISORDERS OF THE LOWER LIMBS – BEMER THERAPY – OUR EXPERIENCES OVER THE PAST FIVE YEARS**

Dr. István Rozsos, PhD; Théta Health and Aesthetics Center, Pécs, Tettyle u. 40

The circulatory diseases of the limbs – whether vein or diabetes-related or with a mixed aetiology – ultimately mean inadequate supply of nutrients and elimination of toxins.

As a result of the inadequate supply of nutrients and oxygen – and after the body’s compensation mechanisms have been exhausted – cells begin to die off at a greater rate and regeneration comes to a halt. Because of this process, the tissue damage becomes visible even to the eye – damage that is still reversible in both the short and long term depending on the body’s capacity for repair. However, if the process is prolonged, an irreversible state is reached. The circulatory diseases have their own general technical therapeutic algorithms. Angiologists try to restore the disturbed balance using medications/infusions, surgeons by way of operations / clearing blood vessels or fitting artificial, vessels while radiologists use invasive intraluminal techniques to achieve the same aim. Of course, these techniques, when combined
in the right ratio, can bring about the best outcome. However, we should not forget the role played by the harmful lifestyle habits of patients and their disregard for medical advice, as these will thwart any attempt at improvement. Nor should we forget the “parasites” of unfortunate situations, who perform such great feats with untried methods and miracle machines that, in many cases, they do more harm than good.

But now there is finally a reliable bulwark joining this cavalcade of therapies – a secure team player, i.e. the BEMER treatment system – whose vision involved transforming the device currently used from being a simple magnetic treatment unit into a device that can provide solutions to the many challenges that the sick body presents. In our practice, we use the device as part of our conservative therapeutic approach for cases where surgical intervention is not necessary. Every trainer is expected to produce a winning team – it is therefore expected that the team is put together in the best way possible. And so it’s not hard to appreciate that we can’t just leave one of our team members sitting on the bench. He is, after all, a team player and should not be sent into battle all on his own! In our presentation, we present the history of several limb rescues that had been considered impossible – stressing that this is the only treatment option where the targeted improvement in local circulation can block the steel effect of other treatments that affect the whole body, something which can lead to a quick deterioration of the condition in most damaged areas. In our practice, we always combine the treatment with fluid therapy and oxygen treatment – in addition to traditional pharmacotherapies and local wound care methods. Apart from the success stories, it must, from the point of view of the absence of side-effects and, from other perspectives apart from knowledge of risk-free treatment methods, be emphasized that success can be achieved if the indication is right and if the correct program is chosen. In those cases where we administer the BEMER treatment to the patient as a sort of “complementary nutrition”, the effectiveness of the targeted treatments already achieved is lost. Lastly – to illustrate the above problems: You can drive a nail into the wall using a screwdriver. But it’s awkward and the result may even be doubtful, because even though the screwdriver is a brilliant tool, it wasn’t invented for that particular purpose.

INFECTIOUS DISEASES

Presentation made at the Budapest conference of 26. March 2011

THE EFFECTS OF THE PULSATING BEMER ELECTROMAGNETIC FIELD ON THE STRUCTURE OF THE BIOPOLYMER PRODUCED BY MUCOID PSEUDOMONAS AERUGINOSA AND ON THE ANTIBIOTIC SENSITIVITY OF THE BACTERIA

Hajnalka Füvesi, Mária Tóth, Terézia Liptai, Dr. Péter Kesserű
Zoltán Bay Foundation for Applied Research, Institute of Biotechnology

The beneficial effect of the BEMER therapy system on the human body has been confirmed by extensive trials carried out by clinicians and researchers over the past ten years. To date however, data relating to whether or not the electromagnetic field induced by the BEMER signal is capable of exercising an
in vitro influence on microbiological systems has not been accessible. During our study, we sought to answer the question of whether or not the biopolymer structure produced by the mucoid Pseudomonas aeruginosa bacteria can be broken up by the weak physical effect of the BEMER magnetic field. Would the electromagnetic field of extremely minimal intensity be able to alter the viability and biopolymer-producing capacity of the bacteria cells, and would the sensitivity of the bacteria towards antibiotics be changed as a result of the effect of the magnetic treatment?

In the case of patients suffering from cystic fibrosis (CF), the bacteria settled in the viscous lung fluid pose a very serious problem as their activity leads to the development of the initial inflammatory foci, which can even result in the patient’s death. It is regrettable that no fully effective therapy is yet available to eliminate the bacteria that colonize the viscous lung fluid. The situation is exacerbated further by the settlement of bacteria which themselves are capable of synthesizing viscous exopolysaccharides (biopolymers), such as the mucoid Pseudomonas aeruginosa cells for example. The mucus produced by the bacteria has a severe negatively impact on the success of the targeted antibiotic treatment. The primary aim of both the alternative and conventional therapies that are being continually developed is therefore to break up the structure of the viscous lung fluid mixed in with the mucus. By reducing viscosity while improving flow characteristics (to facilitate easier clearance), the goal is to reach the bacteria more effectively with antibiotics. Nowadays, medicinal preparations suitable for the development of the complex solution described above are available (pulmozyme containing recombinant deoxyribonuclease). However, the use of magnetic field therapy as an alternative treatment option is, for the time being, still at the research stage.

The biopolymers produced by the Pseudomonas aeruginosa cells (behaving as viscous-elastic fluid) were able to reduce the plastic viscosity of the 50 µT and 100 µT electromagnetic fields emitted by the BEMER 3000 Signal Plus device in 55.5% and 58.3% of cases respectively, applying direct irradiation for eight minutes. When we increased the irradiation distance for the 100 µT field strength to 5 cm, the efficacy of the biopolymer’s destructive effect increased to 65%. The solution viscosity-reducing, biopolymer structure-weakening effect of the electromagnetic field could even be achieved with 100% success when we treated the already almost jelly-like, thick polymers with a continually increasing (60-100 µT) magnetic field for 20 minutes.

Even though the results clearly prove that the particularly low BEMER magnetic field exercised an obvious destructive effect on the structure of the biopolymers, it was not, on its own, able to influence the viability of the cells responsible for synthesis of the biopolymers. After a while, this all meant a reorganization of the structured fabric of the biopolymers. When we applied ciprofloxacin at a dosage exceeding the MI ciprofloxacin concentration characteristic for the mucoid Pseudomonas aeruginosa bacteria in question (10-2 µg/ml) in addition to the magnetic field therapy (60-100 µT, 20 minutes, irradiation distance of 5 cm), repeated structural improvement after break-up was not observed in any of the biopolymers treated (100% polymer destruction after 24 hours). 89% of the systems that received the complex treatment had become Newton fluid completely lacking in structure 96 hours after irradiation. When we used ciprofloxacin (10-2 µg/ml) on its own, we were able to ascertain lower plastic viscosity after 24 hours in 67% of the systems.
examined. In little more than half (67 %) of the other samples, the effect was irreversible, which led to complete breakdown of the structure and to the development of Newton fluid. The effect of ciprofloxacin was also clearly evident in the drastically reduced number of living structure cells (CFU before treatment +10, CFU 96 hours after treatment -10).

In further in vitro experiments, we showed that the weak BEMER electromagnetic field is not capable of altering the sensitivity of the Pseudomonas aeruginosa bacteria towards ciprofloxacin antibiotics. However, the biopolymer experiments showed that, by breaking up the biopolymer structure, the electromagnetic field applied plays a significant supporting role in the antibiotic reaching the target cells.

Based on the results presented here, we can say that, along with suitable medical supervision, the pulsating BEMER electromagnetic field can, in future, represent a useful complementary treatment for those suffering from cystic fibrosis. Before that however, further in vivo clinical trials are needed to verify the results of the in vitro experiment results.

PACEMAKERS

Presentation made at the consensus conference held in Freudenstadt on 2 October 2010
THE SAFETY OF IMPLANTED PACEMAKERS AND DEFIBRILLATORS WHEN APPLYING BEMER TREATMENT
Dr. univ. Michael S. Lampadius (Dipl.-Ing.)

A major feature of pacemakers and defibrillators is that they monitor the patient’s heart rhythm. Via an electrode located within the heart, the intracardiac ECG is picked up, enabling the implant to decide, after analyzing the heart signal, which form of therapy should be used. This means that, if the intracardiac signal is disturbed, the incorrect treatment (or perhaps no treatment at all) may be administered.

In principle, all implants controlled through electrical signals can be affected by external electromagnetic fields. Pulsed fields, such as alternating fields applied to stimulate muscles or nerves, are especially problematic as they may be misinterpreted as a heart signal by the implant. With the BEMER impulse, the implant behaves differently. Its surging signal has a dynamic frequency characteristic, which always remains below a reasonable identification threshold for the implants. This means that any impact on pacemakers and defibrillators by the BEMER therapy can be ruled out.

The author is an expert on pacemakers and chairman of the standards committee with responsibility for the safety of active implants in Germany.
ONCOLOGY

Abstract for the consensus conference held in Freudenstadt on 2. October 2010

PULSATING MAGNETIC FIELDS FOR CYTOSTATICALLY INDUCED POLYNEUROPATHY

Dr. med. M. Gabrys; Sonnenberg Clinic, Bad Sooden-Allendorf

Approximately 200,000 BEMER therapy treatments have been carried out to date at the Sonnenberg Clinic in Bad Sooden-Allendorf.

In 2004, we investigated the influence of BEMER therapy on 44 patients with tumors suffering from peripheral polyneuropathy as a side-effect of cytostatic therapy.

We used chemotherapeutic drugs containing taxane or cisplatin on female patients with mammary carcinoma and gynaecological tumors, as well as a vinca alkaloid on patients suffering with malignant lymphomas.

The symptoms experienced by the polyneuropathy patients were heterogeneous. After four weeks of treatment, three groups emerged in terms of outcome.

40.9% of the patients said that their symptoms had improved by more than 50% (high responders) while 47.7% showed an improvement of between 30 and 49% (responders). 11.4% of patients reported an improvement of less than 30% in their symptoms (non-responders). The overall response rate was 88.8%.

We are at present carrying out a randomized, blind trial, which is examining the data from the pilot study in terms of the “Distribution of the Responders in the Group Examined” by the addition of a placebo group. The placebo group is using a device that is identical in construction to that used by the other group but which has been rendered ineffective by an alteration to its electronics system.

Previous conclusion: BEMER therapy seems to be an effective, side effect-free way of treating cytostatically induced polyneuropathic symptoms. The therapy is well accepted by patients.
NEUROLOGY

POLYNEUROPATHIES

Presentation made at the Budapest conference of 27 March 2011

ALLEVIATING PAIN USING BEMER THERAPY IN NEUROLOGY

Dr. Éva Csécesei – Neurologist, Psychiatrist, Chief Medical Director for the health service in the inner city area of Lipótváros, Budapest

Pain is one of the most common complaints which patients present to their doctor. In addition to the alleviation of acute pain and the reduction of pain after operations, one of the biggest challenges in the area of pain therapy is the alleviation and elimination of chronic pain.

Of all pain types, neuropathic pain brought about as a result of primary damage to the nervous system causes patients the most needless suffering. We processed six years of data relating to the use of BEMER therapy in our neurology practice situated in inner-city Budapest and sorted our experiences of pain treatment in accordance with the protocol of 165 patients established by us. As well as our experiences of BEMER treatment on 43 different patients suffering from peripheral neuropathic pain (painful polyneuropathy, post-herpes neuralgia, trigeminal neuralgia), we also reported on the results of the therapy on 24 patients with pain of the central nervous system (migraine, SM, post-stroke pain) and on the improvement and healing of 82 of our treated patients suffering from lower back pain of various aetiology. The picture is completed by some cases of pain associated with rare conditions and/or various traumas to the central nervous system. Pain is a composite phenomenon. The depression, emotional lability and assumption of the role of an ill person that often accompany chronic pain disorder make planning of the complex treatment necessary. BEMER pain therapy, complementary pharmacotherapy and psychotherapy can together reduce and/or eliminate feelings of pain for patients.

Presentation made at the Budapest conference of 27 March 2011

THE OUTSTANDING POSITIVE EFFECT OF BEMER TREATMENT ON A PATIENT WITH A CRANIAL INJURY (CASE PRESENTATION)

Dr. Sándor Sandra, PhD; Honorary University Lecturer

After being involved in a car accident, the computer scientist at the center of our case study entered into a long phase of suffering. Upon examining the patient, it was evident that his face was lacking in expression, his psychomotility was delayed, his posture stiff, his movements ungraceful, his gait appeared slow, non-proactive and unmotivated and incapable of inducing movement of its own accord. Furthermore, the patient’s movements appeared as though induced by command automatism. He could only begin walking by placing a hand on his back and could not spontaneously initiate sitting down, even when prompted to
do so; the patient could only stand up or sit down in reaction to a physical stimulus. His communication was limited, his facial expression poor. He did not make eye contact. He did answer questions but did not make spontaneous verbal communication. He was even unable to make the most basic of greetings, the nod. Due to the influence of BEMER therapy, these typical negative symptoms experienced by the patient disappeared.

NEUROSURGERY

Presentation made at the Budapest conference of 27. March 2011

MAKING USE OF BEMER THERAPY FOR NEUROSURGICAL CONDITIONS

Dr. Zoltán Németi, Specialist in Neurosurgery, BEMER Expert Adviser (Kenezy Hospital, Department of Emergency Surgery, Hand Surgery and Neurosurgery)

Introduction: The majority of central nervous system conditions essentially do not require any surgical intervention. Those cases that are neurosurgical may, depending on the nature of the problem, require an operation, with the timing of the intervention varying considerably too. For example, 70-80 % of disc herniations are either not operated on at all or can be postponed for years, whereas traumatic cranial hemorrhages, for example, always have to be operated on immediately. Right up to the present day, non-surgical treatment approaches – either before, after or instead of surgery – play a justifiable part in complex rehabilitation processes.

Patients and methods: During the course of my work, I mostly encountered patients to whom I could not recommend neurosurgery, or cases where there were no suitable effective medications or treatments before or after surgery, and where the extent of residual symptoms and complaints made resumption of normal lifestyle by the patients impossible. It was against this backdrop that I began using BEMER magnetic field therapy – to my satisfaction and that of my patients.

Over three years, more than 200 patients (232 to be precise) received BEMER therapy. 50 % suffered from neck and lumbar spine disease; 10 % of these previously underwent surgery or were operated on later because of the lack of success achieved with more conservative treatment options. A significant proportion was made up of those patients injured in accidents (14 %) and those suffering from other nervous system complications (12 %). Some patients had completely lost their faith in conventional medical treatment as it did not result in any improvement to their condition. Moreover, they saw their chances of recovery as very slim. I tell them with great pride that, even in cases such as theirs, we have seen improvements in patients’ quality of life thanks to BEMER. These cases will be presented during the presentation. We will also present cases where no tangible success was achieved (8 %). Results: Professional medical examination and the appropriate care continued to be given in all cases. The recommended magnetic therapy was administered independently or as part of the wider, more complex treatment regimen. Apart from monitoring objective symptoms, the extent of change in the patients’ symptoms and complaints was based on my own opinion and those
of the patients and documented based on the visual analog scale, i.e. using VAS values, which measures the extent of initial pains and symptoms and the improvement achieved on a scale of one to ten.

For practical purposes, we established four groups with varying degrees of success. At the beginning of treatment, the VAS value was higher than seven in all cases. The proportion of complaint-free or cured patients reached 40%. A further 36% of patients reported only minimal residual complaints of any significance affecting them for the rest of their life. 16% of patients reported that their symptoms improved by at least 50%, which, amongst other things, means a reduced need for medication, better treatability for their condition, greater stamina and less occupational impairment for our patients. In ten cases (8%), we did not achieve any improvement. These were mostly cases of sacroiliac arthrosis, spondylolisthesis or cases in which the lumbar spine had been operated on several times, where, because of the genuine mechanical damage done, not even the effect of magnetic field therapy could be expected to bring about any improvement. We experienced an interesting effect in two cases. After myocarditis experienced in response to the effect of the treatment, tachycardia emerged. In one other patient, an itchy skin rash appeared over their entire body, which meant that the otherwise effective treatment had to be discontinued.

Conclusion: Upon learning about the treatment options offered by BEMER, I integrated this therapy into my work as a doctor. Now, I consider use of the therapy for every patient, thereby ensuring more and more patients can find relief from their conditions and more effective healing after injuries without having to resort to surgery.

MULTIPLE SCLEROSIS

Presentation made at the Budapest conference of 27. March 2011

THE EFFECT OF BEMER THERAPY ON THE POWER OF THE LEG-STRETCHING MUSCLES IN PATIENTS SUFFERING FROM MULTIPLE SCLEROSIS

Dr. Péter Duray

In cases of multiple sclerosis, it has always been shown by the world of medical science that magnetic field therapies are the most effective physiotherapy options for the condition. Throughout the course of this study, we measured the effect of BEMER therapy on extensor muscle strength in the lower limbs. At stage 0, irrespective of age, gender, SM type and illness phase, we carried out a physical examination, an EDSS invalidity test specific for multiple sclerosis, an FIM (functional independence measure) test for assessing disability, a Multicont II computer dynamometry examination to measure muscle strength and a video recording to show the patient’s movement coordination. We looked at muscle strength in the lower limbs isometrically by measuring the maximum voluntary torque. We subsequently administered BEMER therapy for six weeks and then repeated the afore-mentioned measurements and examinations. During these six weeks, we did not change anything in terms of pharmacotherapy, lifestyle or frequency
of remedial gymnastics. We compared the results with the patients’ initial condition and their own opinions. The changes in muscle strength measured in the lower limbs led to us to conclude that BEMER therapy did have a beneficial effect for the patients.

Presentation made at the consensus conference held in Freudenstadt on 2. October 2010

THE EFFECT OF BEMER THERAPY ON THE SEVERITY OF FATIGUE IN PATIENTS SUFFERING FROM MULTIPLE SCLEROSIS

Dr. med. J. Piatkowski; Specialist in Neurology and Psychiatry; Academic Teaching Practice at TU (Technical University) Dresden

Fatigue is a syndrome associated with many neurological conditions. In this study, fatigue syndrome in patients with multiple sclerosis was investigated.

21 patients with confirmed multiple sclerosis and fatigue syndrome were treated with a real device and 20 patients with an ineffective blind device. The patients were examined using a battery of tests at the beginning of treatment, after six weeks and after 12 weeks. The investigation was carried out in a double-blind manner. The unblinding and the statistical analysis of the results took place at the TU Dresden Neurology Clinic.

It was shown that those patients treated with the genuine device recorded significant improvements in their target parameters of MFIS and FFS. The same trend was revealed in the crossover design.

In the Dresden Fatigue Study, we were therefore able to show that impulse therapy using the BEMER signal resulted in a significant improvement in the fatigue symptoms of those suffering from multiple sclerosis.

STROKE

Presentation made at the Budapest conference of 27. March 2011

TREATING STROKE AND MOTOR NEURONE DISEASE USING BEMER THERAPY

Dr. Terézia Szemerszki, Neurologist

Even in developed countries, brain catastrophe is the third-leading cause of death and is responsible for a significant majority of disabilities. In 90 % of cases, damage to the cerebral matter is triggered by vasospasm, with hemorrhages being responsible for the other 10 %. When this happens, the entire brain region exhibiting signs of neurological deficit does not die immediately and the functioning of the penumbra or “sleeping” parts of the brain may still be saved if the right methods are employed. The effectiveness of conventional medical therapy can be significantly improved using BEMER treatment. Given optimal nerve cell metabolism and a reduction in the temporary diffuse or localized edema brought about
by the illness, BEMER therapy can, if used during the acute phase, help reduce the secondary damage caused by intracranial pressure.

As a neurologist and someone who performs carotid ultrasound examinations, I come across many acute and chronically ill patients. Four years ago, I became familiar with BEMER therapy and, since then, have been using it confidently and successfully to treat my patients. I would like to present some case studies to those interested.

A. D.: This 15-year old boy was intubated by the emergency services after a night out and supplied with a peripheral venous catheter in his right arm by the traumatology team after collapsing down at home and entering into a state of shock. It could neither be confirmed nor ruled out that the boy had taken drugs. He had no external injuries and his pupils were small. The patient’s left limbs were limp and lame while the limbs on the right side moved only sluggishly in response to pain stimulation. The urgently performed cranial CT showed neither brain edema nor any other abnormality and so the patient was admitted by the neurology/toxicology teams. By evening time, brain stem symptoms (intermittent vertical nystagmus) was determined. The control cranial CT carried out the next day showed extended malacia in the brain stem (bridges) and malacia 10 mm in size in the patient’s cerebellum. The carotid did not display any UH abnormality. In addition to the abnormality mentioned above, the cranial MR and MR angiography both confirmed the occlusion of a segment of 8 mm in front of the basilar origin. On the patient’s third day in hospital, his mother came to see us, requesting BEMER therapy for her son, which we began the following day using the BEMER 3000 Plus. The treatment was administered three times a day (levels 3, 10 and P1 on the mat and P4 using the cushion placed under the patient’s head). To begin with, the patient became more alert, opening his eyes both spontaneously and when prompted. Then, he began to voluntarily move: first his right hand, followed by his left leg. The breathing and feeding tubes were removed towards the end of the fourth week. The patient’s ability to swallow gradually improved while communication improved too, despite the presence of motor aphasia.

On the sixth day of BEMER treatment, the control cranial MR showed an improvement in basilar filling.

Gy. S. C.: This 46-year old man was admitted to the neurology department after suffering for one week with headaches, vomiting and impaired vision, which were not alleviated by pain medication. Upon admission, the patient did not display any focal signs. The urgent cranial CT did not show up any abnormalities but the blood content of the cerebrospinal fluid taken with the lumbar puncture did show subarachnoid bleeding while the cranial MR and MR angiography indicated two small aneurysms of the anterior communicating artery. During neurosurgery, a remedy was supplied using the endovascular method. Afterwards, in addition to occipital binding, the patient became increasingly disoriented with only sluggish movement of the limbs in response to pain stimulation. The cranial CT did not detect any bleeding but the anterior cerebral artery on both sides did indicate localized circulatory disturbance. An MRSA infection made his condition deteriorate further, and bedsores developed too. Although his condition improved as a result of rehabilitative treatment, upon leaving for home, he could not move his legs and was doubly incontinent. Seven months after the onset of his illness, we began treating the patient with BEMER Classic (programs 3 and P1 on the mat in the first week, from week two programs 3 and P1 on the mat, from the third week...
programs 4 and P1 on the mat and, because of shoulder pain, program P3 with the cushion). In the second week of treatment, he was doubly continent during the day. In the third week, he was able to bend his legs well while, in week four, he was able to lift his legs right from the hip.

Amyotrophic lateral sclerosis is a rare progressive illness where the central movement cells die off. Based on current scientific knowledge, the disease is incurable. The symptoms are the wastage and weakening of muscles, first in typical areas and then throughout the entire body, unwanted muscle spasms and, later, problems swallowing and breathing.

L. Z.: A 55-year-old patient who has been treated for schizophrenia and parkinsonism since his youth. Approximately one year ago, his mother noticed that he was holding pens and spoons in an unusual manner. Because of his underlying illness, she did not attach any significance to this. However, for some months, he was increasingly asking for help in buttoning his shirt and tying his shoelaces.

Observation status: Limp muscles throughout the patient’s body. Muscle wastage between the first and second fingers on each hand and in the shoulder girdles. Subtle, yet frequent, muscle spasms in the muscles of the shoulder girdle. Ability to press and form a circle with the hand is becoming more and more diminished.

His laboratory findings did not indicate any abnormalities. No MR abnormalities in the skull or cervical spine. ENG investigation confirmed motor neurone disease. We began ambulatory treatment with the BEMER Professional device three to four times per week (mat P1 and 1). After two weeks of treatment, the patient’s mother reported that his night-time urination problem had ceased. After two months of treatment, the patient’s ability to grasp things with his right hand improved, his appetite improved and his anxiety subsided – even though visual examination did not show any change in terms of muscle mass or wastage.

Presentation made at the BEMER conference held in Budapest, 2007

RECENT OPTIONS FOR TREATING DELAYED LANGUAGE DEVELOPMENT
Dr. med. Szabolcs M. Horváth CSc; Senior Consultant, St. Rókus Hospital, Neurology Department, Dr. med. Csaba Pogány, Consultant

It is well known that the incidence of communication and movement disorders associated with damage to the central nervous system is regrettably high in the “Komitat” (county) of Pest in Hungary.

Pathological material and method: Communication development depends on the functioning and corresponding activity of several organ systems. Bearing in mind so-called risk factors and pathological distribution, the first step entailed filtering out hearing damage of varying degrees of severity, as well as diseases of the internal organs. Over five months, we examined 48 children, of which we deemed 27 suitable for targeted BEMER magnetic therapy. The outcome of the treatment was determined by
a clinical and electrophysiological analysis. Objectivity was ensured by the measuring instruments used as well as by the organizational and functional (diagnostic and therapeutic) separateness of the specialist staff employed.

**Result:** BEMER treatment resulted in a significant clinical improvement in 66.6% of patients examined. The positive change was only mild in 14.8% of cases and not measurable at all in 19.2%. The measurable value of precise electrophysiological improvement was a more modest 25%. The reasons for this may be the short treatment period and the brief amount of time between the two examinations.

BEMER magnetic therapy is a very promising treatment for helping children with communication problems brought on as a result of nerve damage and its widespread use can be recommended to professionals and concerned families alike.
ORTHOPEDICS

Presentation made at the 2nd BEMER World Conference held in Bad Windsheim, 2001

TREATING DIFFERENT ORTHOPEDIC CONDITIONS USING THE BEMER 3000 SYSTEM

Dr. med. Hans Härtling, Specialist in Orthopedics

When the BEMER device came on to the market at the end of 1998, I developed a questionnaire with which I hoped to be able to document, in particular, the impact of the treatment on the occurrence of pain. In the process, three types of pain were established: pain at rest, pain on pressure, and pain on exertion/movement. Associated with the reduction in pain was, of course, also an improvement in functioning. Local joint changes, such as swelling and effusion, as well as concomitant therapy, were taken into account. Where possible, the previously administered therapy was not changed, so patients continued with their medication. At the beginning and end of the therapy, the patients graded how bad their pain was to begin with and what successes had been achieved with the electromagnetic field treatment. In practical terms, this meant that the patients were surveyed on their condition as closely as possible to every three or four days, with the possible results ranging from 0 to 100%.

Different diagnostic groups were analyzed.

I labelled the first large group “Various conditions”, not the most fortunate of descriptions but it does include a range of illnesses which, because of their small prevalence in my sample, I did not wish to separate into individual categories. These illnesses included, for example, arthroses (excluding gonarthroses), arthritides, conditions affecting small joints, arthroses like polyarthroses, Heberden arthroses, Bouchard arthroses, all kinds of tendon myositis, bursitis, calcaneal spurs, etc.

The second large group was made up of patients suffering from gonarthroses. Here, I examined 80 patients. The largest group, and the one that had the greatest success rate, was made up of patients with pseudoradicular or radicular pain syndromes, i.e.: cervical syndromes, cervicobrachialgia, cephalgia, lumbalgia and/or lumbosciatica.

The best results were found in cases of trauma. Here, we had an improvement rate or a freedom from symptoms rate of 80%, which means BEMER therapy can no longer be dismissed for use in trauma departments or accident and emergency units. The remaining groups were those with shoulder problems as well as those suffering from epicondylitis (which was the smallest of the groups). In the case of the former, the results were satisfactory. The worst results were observed for epicondylitis.

When assessing levels of pain, the following is important: All patients reporting an improvement of more than 70% were classed as symptom-free; those reporting an improvement of between 30 and 70% were considered to have improved to a satisfactory extent while an improvement of less than 30% was deemed unchanged, as this range lies within the placebo control area.

To sum up, we can say that, during a treatment phase of around two to three weeks – the average period for which patients were treated by me – the best results, apart from traumas, were achieved in patients
suffering from radicular and pseudoradicular ailments. In the “Various conditions” group, the best results were seen in patients with tendinopathies and/or bursitis, followed by those suffering from arthroses.

Follow-up examination: The shortest follow-up examination interval was four months, the longest 18 months, after the final treatment. Even after a treatment-free period of one and a half years, the results were very pleasing. In general, we can determine that patients who did not respond well to the electromagnetic field therapy during treatment did not show any improvement subsequently either.

Presentation made at the 7th BEMER Annual Conference held in Lossburg on 1. October 2005

THE APPLICATION OF PULSED ELECTROMAGNETIC FIELDS OF VERY LOW FREQUENCY (BEMER TYPE) IN ORTHOPEDIC PROTEOMICS

Prof. Dr. Markus Walther; Center for Sports Medicine and Foot Surgery at the Schön Hospital, Munich

The aim of this study was to gather information relating to biomolecular processes and their possible use in therapeutic applications, especially in the area of orthopedics. The study researched electromagnetically induced differences in gene expression. In the study, methods from proliferation studies (in vitro, incubator with controlled temperature) were used, using the ATP microtitration luminometric examination and differential technologies (Affymetrix) of gene chip analysis. Special pulsed inhomogeneous, weak electromagnetic fields of very low frequency were used, the aim being to influence the biomolecular regulatory processes of human osteoblasts.

The electromagnetic field in question is the BEMER-ELF-PEMS, which was generated with an electronic device, through an oval flat coil with dimensions of 48/42 cm, at an impulse frequency of 30 Hz and an amplitude-time curve (y-x) for an impulse according to y = x3c (sinb), where b = sin (x3), with a mean intensity of magnetic flux density of less than 100 microtesla.

Even during very short stimulation periods totalling 40 minutes (i.e. five stimulations of eight minutes each at intervals of 12 hours), the pace of proliferation of osteoblasts could be increased fivefold. Moreover, this happened in the tubes, which were located within the higher intensities of the magnetic flux in the coil. Compared with non-affected control osteoblasts, significant differences in terms of gene expression were observed in the above-mentioned tubes. These came about as a result of the effect of BEMER-ELF-PEMS and manifested themselves in the form of a clear acceleration and slowing down in protein synthesis.

Of note is the fact that no differences were found in relation to the expression of oncogenes, which are associated with malignant tumors.

These results back up those of other analyses with the polymerase chain reaction (PCR), currently taking place. These studies could, therefore, apart from clarifying molecular principles relating to the wide range of treatment results achieved with BEMER therapy (described elsewhere), lead to further promising advances in future biomolecular applications, including in orthopedics (osteoporosis and bone healing).
PHYSIOLOGY

MICROCIRCULATION

Presentation made at the Budapest conference of 26 March 2011

FUNDAMENTAL RESEARCH ON BEMER TECHNOLOGY

Dr. med. Wolfgang Bohn, Medical Expert Center, Triesen, Liechtenstein

Systematic fundamental research on BEMER technology began in 2004 with an initial orienting study on the changes in microcirculation characteristics that could be achieved by using the weak pulsed electromagnetic fields of the BEMER 3000 system. In the years that followed, discoveries based on this first study and relating to the therapy’s impact on disturbed microcirculation continued to be made. On the one hand, basic knowledge on the actual processes of microcirculation was augmented with the discovery of the functional role of the vasomotion of small arterioles and venules and its local autorhythmic control. On the other hand, the development of more effective signal configurations that emanated from this led in turn to the discoveries on the interplay between this local autorhythmically controlled vasomotion and the centrally (nervous and/or humoral) controlled, slower vasomotion of the larger arterioles and venules. It was not until this discovery regarding the precise differences in terms of control and rhythm in the microcirculation of blood vessels was made that it became possible to design a signal configuration that would respond in a synergistic way to the entire vasomotion system of the blood vessels involved in microcirculation. Through this signal configuration from the year 2010, which is used today in the BEMER systems Classic Set and Pro Set, it is now possible to effect long lasting, therapy-relevant improvement of critical parameters in cases where microcirculation is disturbed.

Data and methods: The clinical investigations were carried out on biometrically defined, largely homogeneous samples from stress and infection-prone healthy subjects (control and verum) in both shorter and longer investigation periods. Non-invasive methods were used to examine the functional state of microcirculation in representative target tissues (intravital microscopy, reflective spectrometry, combined white light spectroscopy and laser Doppler microflow measurement). The characteristics examined were: spontaneous arterial vasomotion, venous oxygen extraction, distribution ratio of the plasma/cell mix in the microvascular networks, the immunological behavioral features of white blood cells, etc.

Results: The measurement results of the investigations carried out showed the statistically sound, therapy-relevant influence of BEMER technology on tissue in terms of its blood supply and the elimination of waste, as well as on cellular immune reactions based on clinically significant stimulated arterial vasomotion, first in small arterioles (2006/2007) and later in both small and large arterioles (2009/2010).

Conclusion: Systems incorporating BEMER technology can bring about effective, therapy-relevant improvements where restricted or pathologically altered organ perfusion has resulted in impaired primary immunological processes.
Presentation made at the Budapest conference of 26. March 2011

MOLECULAR BIOLOGICAL AND FUNCTIONAL PRINCIPLES OF BEMER PHYSICAL VASCULAR THERAPY (MITOCHONDRIAL ATP PRODUCTION, ARTERIAL PERFUSION)

Dr. med. Rainer Klopp; Institute for Microcirculation, Berlin

Aim: Based on the results of clinical trial series, where reference is made, using the example of the BEMER system’s application on rehabilitation patients exposed to stress and infection, as well as patients suffering from diabetic angioneuropathy, new discoveries on the modes of action of the BEMER system both at the functional level (local and superordinate organ perfusion regulation) as well as at the molecular biological level (the results of in vitro investigations) should be discussed.

Data and methods: The clinical investigations were carried out on biometrically defined homogeneous samples from older rehabilitation patients, as well as from patients suffering from diabetic angioneuropathy where amputation is indicated (control and verum) over a longer investigation period. Non-invasive methods being used to investigate the functional state of microcirculation in representative target tissues (intravital microscopy, reflective spectrometry, combined white light spectroscopy and laser Doppler microflow measurement). The characteristics examined were: spontaneous arterial vasomotion, venous oxygen extraction, distribution ratio of the plasma/cell mix in the microvascular networks, the immunological behavioral features of white blood cells, etc. The in vitro investigations (pilot experiment) were performed on defined cell cultures (human tracheal epithelial) using special microscopic and spectrometric procedures (mitochondrial material transportation, cellular ATP supply, analysis of ciliary actions).

Results: The measurement results of the clinical investigations indicate a statistically sound, therapy-relevant influence of BEMER treatment on tissue nutrition and cellular immune reactions based on clinically significant stimulated arterial vasomotion, in both large and small arterioles.

Corresponding with the results of the clinical investigations is the proven influence of the BEMER signal configuration on mitochondrial ATP supply in cell cultures as a precondition (or perhaps consequence) of stimulated vasomotion.

Conclusion: Using the BEMER system, it is possible to effectively stimulate restricted or pathologically altered perfusion regulation, which can lead to impaired organ functioning and reduced resistance to infection, to an extent that is therapeutically relevant. In recent times, basic molecular biological insights have also been attained here.
Presentation made at the 2nd European Conference on Integrative Medicine in Berlin, 20 November 2009

COMPLEMENTARY THERAPEUTIC EFFECTS OF A DEFINED ELECTROMAGNETIC ALTERNATING FIELD ON LOCAL MICROCIRCULATION REGULATORY MECHANISMS

Dr. med. Rainer Klopp; Institute for Microcirculation, Berlin

GOAL: Using several GCP-conforming studies, we aim to show what effects specific electromagnetic alternating fields have as a prophylactic therapy or in improving conventional treatment plans when used as an additional complementary therapy.

DATA and METHODOLOGY: The investigation was carried out on two samples (n = 24 in each case), each divided into a verum and a placebo group. The observation and/or treatment period was 30 days in each instance. One sample consisted of older patients undergoing rehabilitation while the other was made up of middle-aged subjects exposed to stress. The main outcome measures were representative functional characteristics of microcirculation as well as the metabolic and immunological characteristics of white blood cells in subcutaneous or intestinal target tissue. The measurement methods consisted of intravital microscopic investigation followed by computer-aided imaging processes, intravital microscopic reflective spectrometry, combined with laser microflowmetry and white light spectrometry. The Wilcoxon rank sum test (α=5 %) was used for the statistical analysis. In addition, comparative investigations were carried out on various other magnetic or electromagnetic fields of different signal configurations and intensities.

RESULTS: After applying a defined electromagnetic alternating field with a special signal configuration to stimulate spontaneous vasomotion (BEMER Plus system), the older rehabilitation patients showed an increase in their spontaneous vasomotion of 20 % compared with the control group. In the group made up of middle-aged subjects exposed to stress, the improvement rate was slightly lower, associated with an extended decay rate.

Furthermore, significant improvements of the same kind became clear in terms of the conditions of blood distribution within the microvascular network, venous outflow, venous oxygen extraction and the immunological characteristics of leukocytes.

In contrast, extremely weak magnetic alternating fields with constant periodicity exhibited a significantly lower effect on microcirculation characteristics. Weak static magnetic fields showed absolutely no effect on microcirculation characteristics.

SUMMARY: The evaluated effect of a defined electromagnetic alternating field with a special signal configuration to stimulate spontaneous arterial vasomotion (BEMER Plus system) on microcirculation and the immune system is large enough to be of relevance in terms of prophylactic or complementary therapeutic use.
HEART RATE VARIABILITY

Presentation made at the 7th BEMER Therapy Congress, Bad Windsheim, 1. October 2005

INVESTIGATIONS ON THE EFFECT OF A THERAPEUTIC ELECTROMAGNETIC FIELD (BEMER THERAPY) ON HEART FUNCTION, HEART RATE VARIABILITY AND PSYCHOLOGICAL STRESS USING ECG DIAGNOSIS

Horst Michaelis; Director of the AFB – Academy of Bioenergy

Heart function encompasses various different aspects of heart activity. The ECG investigations refer to the functional aspects that can be reproduced by the electrical excitation sequence of the heart. The changes in heart rate variability (HRV) were examined as a significant parameter.

Evaluation of HRV in diagnostic settings can be traced back to the pulse diagnostics of traditional Chinese medicine. It wasn’t until the end of the 1980s that specific, active interest in the topic of HRV began to increase in the world of modern medicine, especially in English-speaking countries, a trend that continues to this day. Although HRV is not a new phenomenon, its importance has been rediscovered of late. Many clinical observations, such as "respiratory sinus arrhythmia" or "rigid pulse", are afforded new importance today because of recent advances in knowledge.

HRV is clearly based to a large extent on optimal interplay between the "sympathetic" and "parasympathetic" nervous systems. Put simply, the body recognizes two main activation states: one geared towards activity (sympathetic) and one geared towards rest and recovery (parasympathetic). The "variability" of the heartbeat is divided into high frequencies (HF), low frequencies (LF) and very low frequencies (VLF). The first mentioned state is characterized more by LF and VLF activity, the second state more by HF activity.

A heart will appear more adaptable if it makes proportional use of both kinds of activity. If the balance between the two activity poles is uneven, this seems to have negative consequences. This is especially the case where LF/VLF activity predominates on one side, which can lead to problems like heart rhythm disturbances, other adaptive disorders or even heart attack.

Stress levels have been shown to have an effect on HRV. This supports the hypothesis that autonomous links between the mind and body can play a role in the development and course of heart diseases.

Treatment of subjects predisposed to stress and of patients with heart diseases with electromagnetic field therapy (BEMER 3000) shows a clear influence on heart rate variability in the sense of improved performance, and ability to adapt on the part of the heart, and an increased tolerance for stress.

This route represents a real opportunity for treating cardiovascular diseases appropriately and effectively. Depressed people also have restricted HRV, which means the mortality risk for depressed patients who are also suffering from cardiac disease is increased significantly. Here too, BEMER therapy has a stabilizing effect on HRV. There are indications that even depression could potentially be treated successfully in this way.
ERYTHROCYTE METABOLISM

Presentation made at the 2nd BEMER World Conference, Bad Windsheim, 2001

METABOLISM OF RED BLOOD CELLS AND HEMOGLOBIN OXYGEN AFFINITY: 
THE EFFECT OF THE BEMER 3000 ELECTROMAGNETIC FIELD ON HEALTHY ADULTS.

Prof. Dr. med. Krzysztof Spodaryk; Vice Rector of the Academy of Physical Education for Science Affairs, University of Krakow, Poland

The effects of the BEMER 3000 electromagnetic field on the metabolism of red blood cells (RBC) and on the hemoglobin oxygen affinity of 17 healthy men aged between 26 and 46 years were examined eight (D8) and 18 (D18) days after the final BEMER 3000 treatment as well as by reference to oxygen dissociation curves (ODC) in the Hemox analyser (TCS, USA), blood oxygen affinity based on the p50 value (half saturation of the oxygen partial pressure) and the pH value of the red blood cells of each individual blood sample. The ATP level and the 2.3-DPG (2,3 diphosphoglycerate) of the erythrocytes were determined spectroscopically.

With regard to the metabolism of the RBC (ATP and 2.3-DPG) and to the p50 values, no significant differences were seen between D0 and D8. A slight (non-significant) increase in the ATP level was seen. 18 days of BEMER 3000 treatment on the other hand produced 18 % more ATP (p<0.10) and 10 % more 2.3-DPG. The p50 values between D0 and D9, between D0 and D18 and between D9 and D18 did not exhibit any significant variations. The associated increase in the ATP and 2.3-DPG components could be traced back to RBC glycolysis stimulation or glucose consumption – consumption of the RCB through activation of the three main enzymes (pyruvate kinase, hexokinase, phosphofructokinase).

Paradoxically, the increasing 2.3-DPG does not have an effect on the Hb oxygen affinity. The lack of influence over the p50 value could have two possible causes: either the increase in 2.3-DPG is too slight to achieve any significant ODC shift or the rheological changes in the RBC and/or the cell membranes are insufficient to have an effect on the p50. However, since 2.3-DPG and ATP are energy-rich compounds, these may improve oxygen supply of the tissue both by influencing the hemoglobin oxygen affinity as well as RBC hemodynamics and membrane equilibrium.
SPECTRAL ANALYSES

Abstract for the 2nd BEMER World Conference, Bad Windsheim, 2001

FAST MEASUREMENT OF SPECTRAL REFLECTANCE CHARACTERISTICS: THE IMPACT OF BEMER 3000 ON HUMAN SKIN

Prof. Dr. Roland Gemperlein; Head of the Biophysics Department, Ludwig-Maximilians-University, (LMU), Munich

In this article, I will describe a spectral analysis method which I developed in connection with electrophysiological investigations on the spectral sensitivity of insects’ eyes. Instead of the classic monochromatic flashes of light, a dynamic spectral stimulus will be used here. This will be created using an interferometer, which is why I called the method “Fourier interferometric stimulation” (FIS). This stimulus can be used in a variety of different areas: in addition to electrophysiology, it can also be employed in psychophysics and in spectral image analysis. In the process, the spectral reflection, absorption or fluorescence of an object can be measured at the same time through a series of images taken by a monochrome CCD camera. We called this spectral image analysis FIBA. It can be applied to either macroscopic or microscopic objects. The spectral range that can be investigated depends on the light source, the design of the interferometer and the CCD camera. Here, the effect of an eight-minute BEMER 3000 electromagnetic treatment is documented as a clear shift in the frequency pattern reflected by a human lower lip.
REHABILITATION

Presentation made at the Budapest conference of 27 March 2011

BEMER THERAPY IN REHABILITATION

Dr. Matild Kovács; Department Senior Doctor
Ferenc Jahn Hospital, South Pest, Department of Internal Medicine

In connection with the deterioration in condition caused by injuries, the use of any method that can improve the patient’s condition and prevent long-term deterioration is important in order to prevent the patient becoming disabled. The quality of the chosen method, which should, as far as possible not have any side-effects, is of particular importance. The aim of this study is to assess the efficacy and effectiveness of BEMER Pro therapy when used for rehabilitation purposes.

Patients and methods: During our study, we analyzed the data of patients admitted to the Department of Internal Medicine and Rehabilitation in Ferenc Jahn Hospital, South Pest (Hungary) between 1 August 2010 and 31 January 2011. We took illnesses justifying admission and rehabilitative care as a basis for the analysis. Over the course of the rehabilitation, we supplemented classic treatments with BEMER therapy. Upon both the introduction and termination of the therapy, we used the rehabilitation measurement scales VAS, the Barthel index, FIM and FNO, which formed the basis for a comparison of the results achieved.

Results: We were able to evaluate and process data for 100 patients. The number of treatments given was at least ten in all cases, with an average treatment period of 15 days. The intensity of the treatments exceeded once daily treatment in 10% of cases. The treatments were successful for all clinical pictures and all patients, something which signalled an alleviation of pain, the ability to move, improved mobility, a return of self-sufficiency and an improvement in patients’ willingness to cooperate. During treatment, the patient satisfaction rate was much higher than that for conventional electrotherapies. In addition, rehabilitation was better executed, the patients were more resilient and rehabilitation time was reduced.
RHEUMATOLOGY

Presentation made at the Budapest conference of 27. March 2011

EXPERIENCES ON THE EFFECTIVENESS OF ELECTROMAGNETIC TREATMENT
FOR INDIVIDUAL RHEUMATOID ILLNESSES

Dr. Roberto Gomez, Dr. Izabella Gomez

The issue of the effect of pulsating electromagnetic fields on living organisms is one that has been debated for some time. In recent times, technological developments have meant that we are making more and more discoveries on the mode of action of such electromagnetic fields. Many reports have appeared on the subject, but the results are not unambiguous and are open to debate.

In Hungary, treatment with magnetic energy is a recognized and frequently used therapy, one that is being used in more and more locations in recent times and for a wider range of indications. The most well-known and important indications for the treatment are inflammatory illnesses of the locomotor system.

We are reporting on the results achieved with magnetic therapy for three groups of illnesses: arthrosis of the knee, adhesive shoulder capsulitis connected with diabetes mellitus, and bursitis. The patients were not allowed take any anti-inflammatory medications or receive any other anti-inflammatory physiotherapy before or during their magnetic treatment. The VAS and summarized WOMAC score results of the patients suffering from arthrosis of the knee prove the effectiveness of the therapy while the VAS and ROM results of the patients with shoulder inflammation, as well as the regression of bursitis which occurred, also demonstrate the anti-inflammatory effect of the therapy.

Authors: Dr. Roberto Gomez, Dr. Izabella Gomez
PREGNANCY

Presentation made at the 2nd BEMER World Conference, Bad Windsheim, 2001

ELECTROMAGNETIC FIELDS (BEMER), STRESS PROTEINS AND TERATOGENESIS

Prof Dr Richard Jelinek; Head of the Center for Biomedical Science; Charles University, 3rd Faculty of Medicine, Prague (CZ)

Magnetic fields (MF) can protect chick embryos from subsequent embryotoxic treatments.

Several studies over the last ten years have shown that short-term treatments with weak, low-frequency electromagnetic fields (EMF) can protect unprotected embryos not only from ultraviolet light and X-rays (Dicarlo et al., 1999; Pařková, Jerábek, 1994) but also from health-damaging treatments with different chemical teratogens (Pařková et al., 1996). It wasn’t until the discovery of a human heat shock protein (HSP 70) promoter (Lin et al., 1999) associated with the protective effect brought about by the magnetic field that further clarity was achieved on the issue.

After it was deduced that the positive effects of BEMER therapy in terms of protecting living cells from any number of disturbances could also be caused by the influence of these heat shock proteins, the effects of the therapy were investigated under precisely defined experimental conditions on the well-known and easily executable biological model of examining teratogenicity in a chick embryo. The experimental design and the first results obtained will be described.
SPORTS MEDICINE

Abstract for the consensus conference held in Freudenstadt on 2. October 2010

THE USE OF BEMER THERAPY IN SPORTS MEDICINE

Univ.-Prof. Dr. med. Klaus Jung, Department of Sports Medicine at the University of Mainz

It is by now widely acknowledged that pulsed, low-energy electromagnetic fields can trigger a wide range of healing effects in the human body. That the effects could be so extensive and profound however was doubted by many experts for a long time. BEMER therapy was seen more as a supplementary natural healing method, one which could achieve good results in the areas of prevention, therapy and rehabilitation, as a pre and/or post-treatment complementary therapy, as a support for other therapeutic processes and/or to alleviate their side-effects.

The basic investigations carried out by Klopp (1) were the first to highlight the ubiquitous and universally effective physiological aspects of the therapy, including the distribution of the plasma / blood cell mix within microvascular networks, the changes to perfusion status at points of intersection of vasomotion status and tone, the increased reticular influx of white blood cells in persons exposed to infection and stress, the increase in venous outflow and the local increase in NO concentration with an actively extending effect on the vascular wall.

Four aspects in particular appear to be of special interest for successful application of the therapy in the world of sports medicine:

- Improving oxygen supply
- Activating the immune system
- Influencing protein synthesis
- Stabilising oxidative balance

In the meantime, some fundamental studies have been able to prove the accuracy of the theoretical considerations and thereby document the comprehensive application possibilities of the therapy in sports medicine.

In his double-blind controlled clinical trial, Sporadyk (2) showed the delayed onset of muscular fatigue with equivalent strain and simultaneous BEMER 3000 local therapy with the intensive applicator (p < 0.05). At the same time, a statistically significant reduction in restriction of movement was observed.

Based on another placebo-controlled double-blind clinical trial, Kafka and Spodaryk (3) pointed to the fact that, despite increased performance, the perceived degree of exertion at the aerobic-anaerobic threshold, the main area of strain in endurance sports, was significantly reduced thanks to the application of BEMER 3000.
Babindak’s (4) team of researchers was able to impressively back up these findings. In another placebo-controlled, double-blind study of tennis players, BEMER 3000 application during training resulted in improved performance in terms of the distance covered (15% – compared to 5.4% in the control group) and in terms of running speed at the aerobic-anaerobic threshold (9.5% – compared to just 0.4% in the control group). The effects of the increase in performance achieved despite lower subjective and objective feelings of exertion (a lower stress-related change in the O₂ status of the test group treated with BEMER) can be easily explained with reference to improved microcirculation and the hypocoagulation of erythrocytes.

Möbes (5) too, in his placebo-controlled double-blind study of 17 athletes, came to the unambiguous conclusion that, thanks to the influence of the BEMER 3000 electromagnetic field, the increase in CK values (a recognized parameter for muscular stress) was not as high and the drop in CK values began earlier: a sign of less muscular damage and faster regeneration, which can be traced back to the altered (BEMER-induced) permeability of the cell membranes.

Many athletes use BEMER 3000 and have reported positive experiences with the therapy. These relate in equal measure to faster regeneration (resulting in quicker resumption of training after competitions as well as more and/or more intensive training sessions), optimal preparation for competitions through energy-saving warming up (partly replacing warm-up exercises but with the same effect), faster healing of sports injuries and strains as well as a reduced risk of injury (statement from the General German University Sports Association).

Accordingly, many athletes on the Swiss team for the 2004 Olympic Games in Athens used the BEMER mat for eight to twenty minutes each day for regeneration purposes in addition to warming up on the mat before competition. They found BEMER therapy to be most effective when used in conjunction with massages and other special therapies. Furthermore, the therapy’s relaxing effect and the accelerated healing of both acute and chronic injuries and strains were popular indications for its use (Villiger) (6).

Claudia Pechstein (7), ice speed skating World Champion and Olympic Champion in 2002, has, according to her own admission, been using the BEMER 3000 system, successfully for years, mainly to accelerate regeneration after training. She also feels that the therapy stabilises her performance and her immune system as well as reducing her risk of injury and significantly reducing her incidence of stress injuries. She considers the use of BEMER 3000 in sport to be very sensible.

On a personal note (speaking as a long-distance runner and someone who does mountain running), I have noticed significant effects of BEMER 3000 applications, i.e. an acceleration in my regeneration times, a near elimination of stress injuries (like muscle soreness) and the ability to resist catching almost any colds over the winter period, all of which I see as evidence of a stable, active immune system. Despite increased physical stress, energy deficits are almost a thing of the past. In particular, I love using BEMER 3000 as a preventative therapy between sauna sessions and in situations where there is high O₂ demand and supply.
Presentations made at the 2nd BEMER World Conference, Bad Windsheim, 2001

THE USE OF BIOELECTROMAGNETIC ENERGY REGULATION IN COMPETITIVE SPORT:
SWIMMING, TRIATHLON, MARATHON, FOOTBALL AND ATHLETICS

Armin Dirschauer; Lecturer in Sports Physiotherapy at the German Sport University, Cologne (Germany)

Swimming: German Open Championships, 2000 (Berlin); German Vintage Championship in the Dortmund-Ems Canal (Münster); 24-hour swim, 2000 (Braunschweig).

After warming up / warming down, stretching and/or cooling down, individual athletes and players from the GVO Oldenburg received sports physiotherapy care after competitions and games and then laid down for 20 minutes on the BEMER 3000 electromagnetic field for relaxation and regeneration of the muscular connective tissue of their joint parts.

When asked to rate the experience subjectively, the subjects reported a tingling sensation, heat and a feeling of relaxation (instead of feeling heavy, they had an almost floating-like feeling). When looked at objectively, the "tingling sensation" (sensitivity range) could be localized exclusively to sports-specific areas of strain. Muscle tone regulation was checked by way of palpation (digital examination using one or more fingers, including bimanual exploration) of the surface of the body or of accessible body cavities ("blanking") to assess consistency, elasticity, flexibility, sensitivity to pain, etc. as well as a muscle function test both before and after use and could usually be confirmed.

Compared with the previous year (1999), a clear reduction in the athletes’ overuse injuries specific to their chosen sport and after similar sporting events was observed.
Presentation made at the 2nd BEMER World Conference, Bad Windsheim, 2001

THE COURSE OF THE EUROPEAN STUDY ON MAGNETIC FIELD THERAPY FOR ATHLETES.
PROGRAM FOR THE EU STUDY IN THE FIELDS OF SURGERY, GYNECOLOGY AND ALLERGIES IN THE CZECH REPUBLIC

Drs. Strnad, P., Cerny, M. and Dbalý, J.

Electromagnetic field therapy (MFT) was used for 60 days on eleven men and six women – all active professional athletes in the area of body-building and fitness.

Results:
1) Compared with earlier results, significantly better results were achieved in all sporting disciplines.
2) For more minor sports injuries, the healing time was significantly reduced.
3) In the area of surgery, a study on improving healing of OP wounds is currently taking place.
4) In gynecology, women with functional sterility problems, non-inflammatory lower abdominal pain and body pains that cannot be operated on are currently in treatment.
5) Among the men with azoospermia and oligozoospermia, spermograms, the maturity of the sperm and hormone laboratory values are all being examined. The preliminary results will be outlined.

Presentation made at the BEMER conference held in Budapest, 2007

THE EFFECT OF MAGNETIC TREATMENT ON THE PERFORMANCE AND ON THE INDIVIDUAL PERFORMANCE AND PHYSIOLOGICAL INDICATORS OF ATHLETES

Prof. Dr. rer. nat. J. Malomsoki, Dr. med. E. Babindák; National Institute for Sports Health, Budapest

The authors wanted to clarify with their investigations whether or not treatment with a pulsating low-frequency magnetic field has an effect on performance and with what parameters any change is associated.

Twelve athletes (tennis players to be precise) took part in the trials (nine men and three women), entering the treated group in random and “double-blind arrangement”. The trials took place during a three-week training camp.

Treatment with the pulsating low-frequency magnetic field was administered every day excluding Saturdays and Sundays, with each treatment lasting for eight minutes and the strength of the magnetic field varying between 10.5 and 21 microtesla, using the BEMER 3000 device with 3-4-5-6 system.

Performance on the treadmill was measured every two minutes by increasing the running speed and then characterized with reference to the distance covered. Anaerobic transition was determined according to Conconi, lactic acidosis, individual parameters characterizing oxygen status as well as blood sugar level. In
addition, the blood gases were analyzed according to Astrup.

Based on the data obtained, it was determined that the performance improvement of those treated amounted to 440 m during the treatment period (representing a 15% improvement). Those treated were able to achieve better performance through the increase of 1.5 km/h (9.5%) in the anaerobic transition for their running speed, while in the untreated group, the improvement in anaerobic transition did not even reach 0.5 km/h (0.4%). It was also observed that those treated with BEMER therapy achieved their performance with higher lactic acidosis levels than those not treated. However, acidosis was compensated for faster in the untreated group. The reduction in physiological shunt and the favorable change to certain parameters that characterize the oxygen status also help explain the improved performance of those treated. It can be assumed (and the available literature indicates this too) that the beneficial effect achieved in those treated with the pulsating magnetic field is due, on the one hand, to improved microcirculation and, on the other hand, to the hypocoagulation that occurs in the body’s red blood cells.

The authors also assume that the increase in the blood sugar level among those treated with BEMER therapy indicates the activation of the neurohumoral system, while in the untreated group this can also be a sign of fatigue.

The authors would also like to point out that the intensity of the pulsating magnetic field and the treatment period are closely connected to the physiological effect achieved.
SPORTS TRAUMATOLOGY

Abstract for the BEMER Symposium at the ZAEN Congress, Freudenstadt, 1 April 2011

THE USE OF BEMER THERAPY FOR REGENERATION AND POSTOPERATIVE CARE FOLLOWING MUSCULOSKELETAL SPORTS INJURIES

Dr. med. L. Weisskopf, Rennbahnklinik Basel

The “Praxisklinik Rennbahn Muttenz” in Switzerland has been relying for years on the complementary effect of magnetic field therapy, mainly in the area of musculoskeletal injuries and for regeneration of athletes, especially in the postoperative phase.

As a specialized clinic in the field of Achilles heel pathologies, we make particular use of the BEMER magnetic field mat in the postoperative protocol in order to reduce the incidence of dreaded wound healing complications in this part of the body that is not especially well supplied with blood. We have observed the positive results of the therapy with our own eyes. Similarly, we have observed a faster detumescent effect and generally faster recovery rates for patients who have undergone sometimes complex Achilles heel reconstructions. The scientifically proven effect of the wound healing (Steven et al., 2008) and circulation boosting therapy is therefore regularly and successfully implemented on a daily basis at our clinic – to the immense benefit of our patients.

Furthermore, the doctors at the Praxisklinik Rennbahn (which literally translates as the “running track practice clinic”) also use magnetic field therapy to treat and care for elite athletes and players on national teams, who may be suffering from very frequent bruises as well as bone or cartilage injuries. Here too, the effects have been amazing, with extremely good cure rates and less complications. Through close cooperation with BEMER, the national handball team was supplied with BEMER device systems, with the faster regeneration time resulting in an enormous satisfaction rating by the players. In a heretofore still relatively short observation period, the number of strain reactions/injuries was reduced as a result of the magnetic field therapy. More precise analysis over a longer period is planned and should provide a better indication on any possible prevention of injuries owing to faster tissue recovery and improved circulation.

As the Olympic doctor in Vancouver 2010, I highly recommend magnetic field therapy as a safe, extremely effective supportive therapy for acute injuries in the musculoskeletal system, especially bruises, muscle-tendon injuries and broken bones. It is also worth mentioning that the academic literature on the subject offers a lot of evidence for effective use of the therapy as a supportive treatment for arthrosis (Ganesan et al., 2009), in particular to reduce pain and inflammation. Similarly, there is evidence of chondroprotection and improved bone metabolism, which can also be helpful in treating arthrosis. The wound healing promotion effect of BEMER therapy deserves mentioning once more: in our view, there is huge potential to significantly reduce the postoperative complication rate in terms of wound healing complications and any subsequent infections.
TRIUMATOLOGY

Presentation made at the Budapest conference of 27. March 2011

HEALING AND QUALITY OF LIFE: OUR EXPERIENCES USING BEMER THERAPY IN MÄTYÄS SANATORIUM

Dr. György Seress

We opened our sanatorium in April, 2009. Here is a brief summary of our experiences: The advantage of the sanatorium is: we aim to examine the patient (whether they come to us of their own accord or are referred) in a holistic manner (a very fashionable term nowadays!). Upon taking the patient’s case history therefore, concomitant illnesses (those of a psychosomatic nature) can be assessed separately and the BEMER program can be specified for tailored use with due consideration for these other conditions.

The changes in the current and the underlying illness can and must be monitored with the program. These changes are individual and may vary widely even in cases of injury; you can’t work "by the book".

It is advantageous if the doctor in charge of patient care is well trained; positively unhelpful is the half-educated expert, as he or she will make people doubt the credibility of the treatment. The sanatorium can see the person as a whole and take him or her into the care of its team of professionals. In this way, the therapy becomes not an alternative to conventional academic medicine but a complement to it.

We are of the view that BEMER, together with the natural ability to regenerate present within us, is changing the way health and illness are assessed. Its use is bringing about a change in quality of life even for ostensibly healthy people. It opens up a whole new range of possibilities for conservative treatment while the results of the therapy in patients who have undergone surgery are not only faster but much better too. At the same time, in the area of chronic illnesses, BEMER therapy represents another therapeutic option for pain syndrome (Sudeck).

Today we can say, based on our own experiences, that BEMER use has fundamentally altered the possibilities of medicine.

Presentation made at the BEMER conference held in Budapest, 2007

BEMER THERAPY AS A COMPLEMENTARY TREATMENT FOR NECROTISING FASCITIS PATIENTS

Zsófia Borbély; Physiotherapist

In recent years, there has been a significant increase in the number of invasive infections. More and more infections caused by Streptococcus pyogenes have been diagnosed around the world. Worthy of mention in particular among these infections is an illness by the name of necrotising fascitis and its associated serious complication, Streptococcus toxic shock syndrome (STSS). In the Traumatology department of our
hospital, we have treated five patients over the past year suffering from the illness caused by this infection. The seriousness of the illness varied from person to person: in three cases, we were successful in saving the limb; in one case, we had to amputate the limb to save the patient’s life and, in the other case, the older patient died of other causes after being in remission from his underlying illness.

METHODS: The pathogenesis of the process brought about by necrotising fasciitis is not entirely unknown, with the bacterial toxin and damage to the blood vessels playing the major role in the development of inflammation. The lethality rate for the infection is 30%, which means the primary immediate therapy needed is suitable and regular surgical excavation, empirical antibiotic treatment and, where STSS is present, intensive therapeutic care.

GOAL: To inhibit progression of the illness, prevention, reduce functional damage caused by tissue decay.

RESULT: BEMER treatment is an effective complement to the causal therapy. The tissue necrosis, ischemia and edema induced by the infection significantly reduce tissue oxygenation. However, regular, adequate BEMER treatment is able to significantly reduce microcirculatory disturbance and oxygen deficits in the tissue as well as boost the functioning of the body’s protection system.

The limbs saved healed to an extent that enabled satisfactory functioning. Despite the long months of hospitalization, the patients were eventually able to return to their families and their previous way of life.

Presentation made at the 7th BEMER Therapy Congress, Bad Windsheim, 1 October 2005

SUCCESSFUL BEMER 3000 MAGNETIC FIELD THERAPY FOR AN EXTREMELY RARE AND COMPLICATED CLINICAL CASE: H-FRACTURE (TRIPLE FRACTURE) OF THE SACRUM AS A FATIGUE FRACTURE IN MANIFEST OSTEOPOROSIS

Dr. med. Rolf Oesterle; Practice for Holistic Prevention and Health Promotion

Traumatology case study: Female patient, I.L., 73 years old.

2003: Long-term high-dosage cortisone therapy for seronegative rheumatoid arthritis of her large joints and finger joints.


In June 2004, the patient began to experience increasing pain in her left buttocks as well as severe lower back pain. Initially, pain could be alleviated by standing or lying; sitting down on the other hand became all but impossible because of the severe pain. 11-15 July, 2004: Treated as an in-patient in the University Neurology Clinic.

Diagnosis: Sciatica of unknown origin in the sense of a pseudoradicular pain syndrome. Exclusion of indication of neurosurgery. CT of lower lumbar spine normal. X-ray of pelvis and left hip joint also normal. Treated as an in-patient in a special orthopedic hospital from 28 July to 6 August 2004:
29 July 2004: Magnetic resonance tomography of the os sacrum: “Fatigue fracture of the massa lateralis of the os sacrum on both sides with pronounced edema formation and involvement of the root canals S1 and S2 on both sides. Plus, transverse fracture line with slight buckling between the first and second sacral segment in the sense of a H-fracture of the sacrum.” Incomplete foot dorsiflexion weakness. Manifest osteoporosis.

Initially, conservative symptomatic therapy and physiotherapy as well as monthly aredia infusions (biphosphonate) for the osteoporosis.

4 February 2005: Magnetic resonance tomography of the pelvic for follow-up purposes: “Fracture lines still visible in the massa lateralis on both sides of the sacrum with persistent fluid inclusion identifiable. The fractures have not yet consolidated.”

25 February 2005: Beginning of BEMER 3000 magnetic field therapy: coil mat, three time a day (P4). Additional use of the intensive applicator was not tolerated by the patient.

13 April 2005: The senior consultant at the orthopedic hospital intends sending the patient to a specialist for operative treatment, particularly as the case is so extremely unusual and complicated. A multi-line spiral computer tomography changes his mind: “The massa lateralis of the os sacrum has been diffusely reconstructed from an osteosclerotic point of view on both sides. In the area around the dislocations of the ventral corticalis of the os sacrum […] the bone is almost completely healed […] Even in the second sacral segment, in the area around the transverse fracture, there is inhomogeneously increasing sclerotisation.”

Conclusion: After just seven weeks of BEMER 3000 therapy: “Healed sacral H fatigue fracture on both sides with signs of a cancellous reconstruction with diffusely increasing sclerotisation […] The fracture is almost completely consolidated, with a ventral dislocation.”
DENTISTRY

Presentation made at the Budapest conference of 27 March 2011

THE USE OF BEMER ELECTROMAGNETIC FIELD TREATMENTS IN DENTISTRY

Dr. Annamária Cakó, Dental Specialist

In dentistry practice, recurring inflammations of the oral cavity (which could almost be described as chronic in nature) cause many problems – aphthosis, gingivitis, parodontosis, periimplantitis, TMJ problems.

BEMER electromagnetic field treatment is a really effective complementary treatment method for treating and healing these conditions.

I would like to share my experiences from the past few years with you in this presentation.

Presentation made at the Budapest conference of 26 March 2011

USE OF BEMER THERAPY DURING TREATMENT FOR JAWBONE NECROSES CAUSED BY BIPHOSPHONATE

Dr. Krisztina Cséplő – Dr. Csilla Suri, Military Hospital

Introduction: Treating necroses using biphosphonate remains a difficult and often unsuccessful endeavor right up to the present day. It appears that the jawbones are much more susceptible to penetrating infections after the strengthening of bone induced by medication. The most common symptom of such necroses is free dead bone surface. Aims: any method that promotes regeneration of the mucous membrane can be advantageous in controlling and treating the disease. Patients and methods: In our department, we investigated the effect of BEMER therapy on ten of our patients suffering from jawbone necrosis caused by biphosphonate. We determined that our treatment had a positive impact, both in terms of the subjective complaints reported by the patients and healing of the disease or the occurrence of relapse.

Conclusion: BEMER therapy can be effective as a a complementary treatment for healing jawbone necroses brought about by biphosphonate therapy.
I have been using the BEMER 3000 Veterinary device for over four years. This is the classic, first-generation device. Dogs made up a significant majority (91) of the total number of animals treated (117). The rest were cats, horses and three other animals. This number of cases cannot be compared with that of a hospital rehabilitation department using the treatment; however, the method can be statistically evaluated. Because of this, I can say with confidence that BEMER magnetic field therapy can be used successfully as a side effect-free treatment method in veterinary medicine too. For the purposes of this conference, I will not discuss the most common indications for the treatment – usually weakness in the back part of a dog’s body, which appears in old age. Instead I will speak of cases which, although smaller in number, I consider interesting because of the type of animal or form of disease in question.

Semi lameness of the back part of a chipmunk’s body (Burunduk): Among hobby animal owners, the chipmunk is becoming an ever more popular rodent, one that can be easily kept in an apartment. This three year old female was brought to my practice because, after giving birth to six young, she was suddenly unable to use her rear legs any more. Because the owner is an experienced breeder, the animal received all the care it needed. The husbandry conditions were perfect too. The animal was extremely nimble and agile, making it impossible to subject it to a thorough examination. Heightened sensitivity to stress is typical of these kind of animals, so we rejected the idea of examining it while sleeping too. Because of the experiences I had with other animals, I decided to use BEMER magnetic field therapy. I opted for a 12-minute treatment using program P2. After the third treatment, the animal drew its feet under itself and even walked. I treated the animal a total of five times. After regaining normal use of its limbs, the only difference from before was that the chipmunk could not move quite as fast as previously.

Bernese sheepdog, bursitis of the elbow: The owner of this three month old puppy brought his pet to us because of the inflammation of the bursa on the tip of its elbow. This is quite a rare development, one that occurs as a result of mechanical impact on the tip of the elbow (mostly knocks). Fluid gathers in the extended bursal cavity, which can subsequently grow a large as a hen’s egg. The extended bursa is never painful; instead constituting a purely aesthetic issue. In order to rectify the problem, surgical removal of the bursa is recommended.

While studying documentation from earlier BEMER conferences, I came across the sports medicine presentation from Dr. Elvira Babindak, who used BEMER therapy to treat olecranon bursitis in athletes. The dog’s owner agreed to try the treatment. Initially, I treated the dog with the intensive applicator but, after a few days, the bursa on the dog’s other leg became inflamed too. After this, I decided to use the cushion, so that both legs could receive the therapy at the same time. In addition to the magnetic therapy, I also aspirated the bursa several times, injecting aloe first and dexamethasone into the cavity. After drainage, I tried to band-
age the elbow with an elastic dressing but, each time, the distal limb portion swelled to such an extent that the dressing had to be removed. It became possible for the dog's owner to treat the animal at home for 2 x 1 weeks in 3 x 20 minute sessions, at intensity level 2. Ultimately, we achieved 50% success because, while the initial bursitis healed on one leg, it failed to do so on the other. I have not been able to explain why the other side did not heal, even though the same therapy was used. Notwithstanding this however, I am pleased that the problem could be corrected with one operation, rather than the two that would otherwise have been necessary.

German shepherd, atrophy of the muscles of mastication on both sides, jaw dysfunction: The muscles of mastication of this 2.5 year old dog were completely atrophied on both sides. Although he was able to eat, his appetite was poor and he could not open his mouth wide enough to catch his ball. Upon looking at his previous veterinary history, it turned out that a tick was previously found inside him. And so it occurred to me that the symptoms that the dog was exhibiting and which pointed towards damage to the cranial nerves were as a result of Lyme disease. The positive result to the serology test carried out confirmed my suspicion. Initially, the dog was very excitable; as treatment progressed, he became more relaxed and his general well-being improved. In total, he received six 20-minute treatments. After completing the course of treatment, the dog's appetite and general condition improved. His mouth regained full functionality and he was able to resume playing with his ball, something that he always enjoyed before. It was my assumption that, in three other cases, Lyme disease was the trigger for the affliction of the cranial nerves observed.

In one case, the muscles of mastication of a one-year old hovawart dog were atrophying one after the other and, even though the dog was able to eat, his appetite was poor. After receiving BEMER therapy, his appetite returned to normal and he was able to fully open his mouth. In two other cases, one concerning a six-year old Belgian sheepdog and the other a 14-year old cross-breed dog, salivation and unusual tongue movements could be observed. In addition, the dogs' ability to eat and drink was affected. In the case of the older cross-breed, the Lyme test results were negative, while no investigation was carried out on the other two dogs. In each instance, mouth function and appetite returned to normal after BEMER therapy.

Five-year old rabbit, rear half of body paralyzed: According to the owner, the rabbit was not able to move the rear part of his body very well for several days, and in the end was completely paralyzed. Examination revealed no sensation of pain in the animal's back legs. X-ray examination showed spondylosis in the rabbit's dorsal and lumbar vertebrae. The owner brought his much-loved pet to us twice a day for three consecutive days, with each treatment lasting 20 minutes. Level 2 intensity was used. After the third day, the sensation of pain returned to the rabbit's leg. He almost jumped out of his box and his movement was good once again. The human side to this case is worthy of note, as the rabbit's owner brought his pet to Budapest all the way from Gyor and stayed for several days, with the rabbit, at the home of a well-known writer, this being the only way he could avail of BEMER treatment for the animal.
Presentation made at the 3rd SAMET Conference, Geroldswil, 3 September 2005

USE OF BEMER 3000 MFA TO TREAT DESMOPATHIES IN HORSES
Zdeněk Žert; Brno Veterinary and Pharmaceutical University, Equine Clinic, Surgical and Orthopedic Department, Czech Republic

We have successfully used BEMER 3000 MFA in two different cases of desmopathy.  

1) After partial osteotomy of the second metacarpus (splint bone) in a jumper, the horse became unstable in its proximal fragments, resulting in persistent lameness. Two months of thrice daily therapy with BEMER 3000 MFA (level 10) resulted in complete bone connection between the fragment of the splint bone and that of the cannon bone. This coalescence stabilized the carpal joint, which meant the horse could take part in competitions once again.

2) Proximal heel desmopathy of the suspensory ligament (M. interosseous) is one of the most serious problems in equine orthopedics. There are various treatment options available, none of which has very reliable results however. In one case of interosseous desmopathy in a police horse, we decided to use BEMER 3000 magnetic field therapy. After three months of therapy (level 10), the clinical symptoms had subsided and the horse was able to resume his full workload.

Presentation made at the 2nd BEMER World Conference, Bad Windsheim, 2001

SUCCESSFUL USE OF BEMER 3000 VET IN VETERINARY MEDICINE: AN EXPERIENTIAL REPORT
Dr. med. vet. Maximilian Preissinger, Veterinarian

As far as therapeutic measures go, physical therapies using the BEMER 3000 electromagnetic field mat and the BEMER light shower are a key component of my practice for both large and small animals. The BEMER 3000 electromagnetic field mat is used as a shoulder mat for cattle or as a base inside cages containing house pets (dogs, cats, etc.). For chronic conditions, I prefer long treatment periods of low intensity whereas for acute or subacute conditions, I tend to go for short treatment periods of high intensity.

The results – at least in terms of the improvement in the patient’s general constitution – have been thoroughly positive. The convalescence period has been shortened for infections of all kinds. Especially when it comes to metabolic disorders suffered by cattle and degenerative systemic conditions, downtime can be significantly reduced and underperformance compensated for faster than in similar animals that did not undergo magnetic field therapy. Accordingly, systematic use of the magnetic field mat in agriculture, in particular, should help reduce and limit financial losses suffered.

A therapy crisis will one day result from the fact that more and more medicines are being specifically banned for use in veterinary medicine. For this reason, it is important to publicize alternative therapies – and, in particular, the magnetic field mat – among vets and farmers, to expand the range of therapies available and also reduce use of medications in cattle farming in order not to exacerbate resistance among animals and the problem of medicinal residues in animal food products in the long term.

Put succinctly, this means using magnetic field therapy to limit financial losses in agriculture and reducing the use of medicines (or shortening the treatment period) in order to ensure the long-term future of German farmers and also protect our health by reducing resistances and residues in milk and meat.