in thermocoagulation of nerve fibers (neuroablation or neurolysis) and interruption of nociceptive afferent pathways. In CRF, alternating current is applied continuously to a target nerve, with the aim of producing a thermal lesion, and needle electrode is placed alongside the nerve using radiographic images (X-ray or USS).

During PRF in 1 second 2-5 bursts of 5-20 ms each RF current are usually delivered. One cycle has active phase and silent period to allow for washout of the generated heat. During the procedure the temperature of tissues around not exceed 42°C, however output is usually set at 45V and as result not causing damage to nervous tissue. Electrode has to be placed perpendicular to the nerve. The effectiveness of PRF also was demonstrated in various good quality randomized control studies, but mechanisms of action are still unclear. In our study, where we analyzed the histological effects of PRF on the domestic porcines DRGs, and evaluated the expression of biomarkers (neurofilaments, glial fibrillary acidic protein and heat shock protein – 70) we were concluded that increasing of neural tissue cytoskeleton and cell stress factors in gangliocytes after PRF suggesting about activating of cellular activity, regeneration processes and inhibitory role reducing of oxidative stress. PRF, in this study, had no damaging influence on gangliar cells by apoptosis.

Patient selection and targets for CRF or PRF therapy depend on the anatomy and pathophysiology of the underlying pain. Diagnosis could be confirmed using diagnostic block of target nerves. In general, patients undergoing RF procedures should be awake, with sedation avoided where possible. Local anesthetic is used to anaesthetize the skin before electrode positioning. In RF lesion, local anesthetic is also injected via the needle electrode before lesioning. Usually target sites for RF or PRF therapies are trigeminal ganglion, dorsal root ganglion, medial branch of dorsal ramus, sympathetic and parasympathetic ganglias, peripheral nerves and joints. Common risks include bleeding and infection and also the possibility that the procedure may have no beneficial effect or, in some cases, make the pain worse. Incorrect needle placement may result in direct trauma to other structures closely to nerve, for example, blood vessels ligaments and other nerves. Additional risks may be incurred with intravascular or intraneural injection of local anesthetics. CRF carries the greater risk of the two modalities because it involves thermal lesioning of nerves. Adverse effects due to this include damage to adjacent nerves, damage to motor nerves, and deafferentation pain syndromes. PRF carries relatively few complications directly attributable to the RF current.

Cerebrovascular Changes in Tension-Type Headache

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Background. A tension-type headache (TTH) – is the most common type of primary headache. Population studies show that the third of the population suffers from TTH. Psycho-emotional factor is important in the beginning of TTH. The role of the vascular component TTH is controversial, because intravenous injection of vasoactive drugs, such as – ergotamine, nitric oxide synthesis inhibitors, serotonin antagonists (triptans) stops chronic tension-type headache.

Aim. To establish mechanisms of cerebrovascular reactivity in healthy control groups and in tension-type headache patients in interattack periods.

Materials and methods.15 patients with TTH were examined. The control group consisted of 15 healthy individuals who corresponded with patients by age and gender. All the subjects were undergone to rheographic examination of the brain vascular system with the help of computer rheoencephalography (REG).To determine the reactivity of cerebral vessels REG record was held three times: baseline (after 5 minutes of rest, lasting 30 seconds.) Immediately after the experimental paradigm (10 s.) and 60 s. after it (10 s). The pattern of the experiment – passive limb flexion-extension in the elbow with a frequency of one Hz for 10s., which leads to the activation of cerebral circulation. The following indicators were studied: the time of the rapid blood delivery, the time of slow blood delivery, the amplitude of systolic wave, peripheral resistance, blood supply, tone of the large arteries, tone of the medium and small arteries, the insisure.

Results. During the experimental paradigm with healthy subjects the following changes in parameters of circulation appeared: increase of time of slow blood delivery, amplitude of systolic wave, blood supply, tone of the large arteries, but the time of rapid blood delivery, peripheral resistance and the tone of small arteries decreased. In one minute of rest after the experimental paradigm the time of slow blood delivery, amplitude of systolic wave, blood supply decreased and simultaneously the time of rapid blood delivery, peripheral resistance and tone of the shallow arteries increased. Indicators in patients with TTH showed heterogeneous changes regarding the control group. Within the confines of each indicator some patients showed increase, others –decrease of its level.

Conclusions. Cerebral autoregulation in patients with TTH in most patients was similar to the norm, the rest – was characterized by the opposite pattern changes, that can be explained by the involvement for varying degrees of cerebrovascular component.