INTERNATIONAL ABSTRACTS

A REVIEW OF BURN SYMPTOMS AND POTENTIAL NOVEL NEURAL TARGETS FOR NON-INVASIVE BRAIN STIMULATION FOR TREATMENT OF BURN SEQUELAE

This article looks at transcranial direct current stimulation (tDCS), a non-invasive brain stimulation (NIBS) technique, to treat post burn symptoms that can significantly impact quality of life, such as pain, pruritus, fatigue, impaired motor strength, post-traumatic stress, depression, anxiety, and sleep disturbance. The authors' aim was to review the potential cortical target for tES specific to burn-related symptoms. Based on their review and results in other populations suffering from similar symptoms as patients with burn injuries, three main areas were selected: the prefrontal region, the parietal area and the motor cortex. The authors conclude that, based on the importance of the prefrontal cortex in the emotional component of pain and its implication in various psychosocial symptoms, this region may represent the most promising target for stimulation.

Thibaut A et al.
Burns, 47(3): 525-537, 2021

INTUBATION IN BURNS PATIENTS: A 5-YEAR REVIEW OF THE MANCHESTER REGIONAL BURNS CENTRE EXPERIENCE

The authors of this paper performed a 5-year retrospective review of adult patients admitted to the Manchester Burns Centre who underwent intubation at or prior to admission, in order to review the appropriateness of their intubation. Intubations for non-burn indications or burns >40%TBSA were excluded. Indications for intubation were compared to ABA and Denver criteria. Forty patients met inclusion criteria for analysis: 72.5% and 95% of these patients met ABA or Denver criteria respectively. 30.8% of patients were extubated within 48 h. 50% patients extubated within 48 h had ≤1 indication for intubation or negative laryngoscopy. Complications related to intubation and ventilation were noted in 37.5% of patients. The authors conclude that, while 95% of patients fulfilled recognised criteria for intubation, 30% were extubated within 48 h, suggesting that some patients may be suitable for close observation rather than early intubation.

Dingle LA et al.
Burns, 47(3): 576-586, 2021

THE HISTORY AND DEVELOPMENT OF HYPERBARIC OXYGENATION (HBO) IN THERMAL BURN INJURY

Although abundant experimental and clinical work has been conducted on HBO for burns, the method has not yet been established in clinical routine. The authors of this article carried out a retrospective analysis of the literature in an attempt to elucidate the question why HBO is still sidelined in the treatment of burn injury. Forty-seven publications (32 animal experiments, four trials in human volunteers and 11 clinical studies) fulfilled the inclusion criteria. All but four of these papers were able to demonstrate positive effects of HBO, most of them describing less edema, improved healing, less infection or bacterial growth and most recently, reduction of post-burn pain. Secondary enlargement of burn was prevented, as microvascular perfusion could be preserved, and cells were kept viable. The application of HBO, however, varied considerably. The authors conclude that HBO unquestionably has a positive impact on the healing and course of burns. They assert that the few negative results are most likely due to peculiarities in the administration of HBO, and well-designed studies are needed to definitively assess its clinical value as an adjunctive treatment.

Smolle C et al.
Medicina, 57(1): 49, doi.org/10.3390/medicina57010049

CURRENT STATUS OF EMERGENCY TREATMENT OF CHEMICAL EYE BURNS IN WORKPLACES

The authors reviewed the literature on the emergency management of chemical eye burns with emphasis on current German guidelines, primarily MEDLINE. Immediate and copious rinsing of the eye is the pivotal emergency treatment modality. However there is an ongoing debate about the benefits and risks of specific rinsing solutions. The easiest and most readily available rinsing solution is tap water, which fulfills the crucial criteria of purity, sterility, and neutral pH. Other rinsing solutions are proposed for their higher osmolality to stabilize the physiological pH. However the authors conclude that there is no compelling evidence of their substantial benefit, and some reports suggest that there may also be unwanted side effects. They hold that a general recommendation of any other solution than tap water is not warranted.

Claassen K et al.
Int J Opthalmol, 14(2): 306-309, 2021

MEASUREMENTS OF CARDIAC OUTPUT AND MANAGEMENT OF BLOOD TRANSFUSIONS DURING BURN SURGERY - AN OBSERVATIONAL PROSPECTIVE STUDY

This study investigates whether blood transfusions during burn surgery, guided by standard monitoring with inspection of the operative field, measurements of blood pressure, heart rate, hourly diuresis, and concentrations of hemoglobin and lactate, could sustain preoperative cardiac output (CO) until end of surgery. The authors investigated 15 patients ≥18 years of age scheduled for burn surgery, where perioperative monitoring included an arterial line. Baseline values of CO, mean arterial pressure, and concentrations of hemoglobin and lactate in arterial blood were measured before surgery and every 30 minutes during surgery. They found no statistically significant change in CO from baseline till end of surgery, a statistically significant decrease in concentration of hemoglobin, and a statistically significant increase in concentration of lactate. They conclude that perioperative blood transfusion guided by standard monitoring seemed to sustain CO from baseline till end of surgery, however further research is needed to confirm this.

Stefansson J et al.
J Burn Care Res, 42(3): 420-424, 2021

EFFICACY OF CULTURED ALLOGENIC KERATINOCYTES IN TREATMENT OF DEEP SECOND-DEGREE BURN

This study reviews the efficacy of cultured allogenic keratinocytes as a dressing material in deep second-degree burn patients. In this retrospective study of 64 patients treated between November 2013 and April 2019, half of the deep second-degree contact, steam, and flame burn patients were treated with cultured allogenic keratinocytes. The other half were treated with chlorhexidine gauze and antibiotic ointment. The primary outcome was time to wound closure. A secondary outcome was the number of Kaloderm sheets used. Groups were compared based on the type of burn and treatment. In the experimental group, the median times to reepithelialization were 10.0 days for the contact burn group, 13.5 days for the flame burn group, and 11.0 days for the steam burn group. Progression to a third-degree burn occurred in only one patient in the experimental group and four patients in the control group. Patients treated with cultured allogenic keratinocytes required a mean time of 11.7 ± 2.4 days for complete closure, whereas the mean time to complete closure in the control group was 16.4 ± 5.3 days. The authors conclude that the patients treated with cultured allogenic keratinocytes reepithelialized faster than those treated with chlorhexidine dressings.

Kim EH & Lee SH
J Burn Care Res, 42(3): 533-537, 2021