

ABSTRACTS

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correct responses of choice reaction time and increased number of errors in spatial working memory and paired associate learning were observed at all time points up to 24 months of residence. Event-related potential P300 showed an increase in P3 latency and CNV showed an increased M1 peak latency at seventh day and after 6 months. There was an increase in cerebral blood volume at HA at all time points up to 24 months residence. High-altitude (14,500 ft) residence for 2 years altered neurocognitive functions and sleep architecture in a time-dependent manner in lowlanders.

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EFFECTS OF ACUTE NORMOBARIC VERSUS HYPOBARIC HYPOXIA ON REACTIVE OXYGEN SPECIES PRODUCTION ASSESSED BY ELECTRON PARAMAGNETIC RESONANCE AND OXIDATIVE DAMAGE

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Acute hypoxia induces reactive oxygen species (ROS) accumulation, generally associated with cell oxidative damage. The aim of this study was to (1) investigate in healthy lowlanders oxidative stress levels during acute exposure to normobaric hypoxia (NH, FIO₂ 12.5, 4500 msl; *n* = 57, 42.6 ± 13.7 years) and hypobaric hypoxia (HH, 3482 msl, *n* = 27, 37 ± 8.5 years; and at 3830 msl, *n* = 16, 39 ± 10.2 years); (2) evaluate the effects of (i) different passive ascending methods (cable/helicopter) and (ii) preacclimatization by NH (preaccl-HH *n* = 16) on ROS production (EPR determined) and oxidative damage (lipids [TBARS, 8-iso], proteins [PC], antioxidant capacity [TAC], and DNA damage). In NH subjects, a fast ROS increase in capillary blood was observed (+44%; 3.21 ± 0.21 μmol·min⁻¹; *p* < 0.001) related to oxygen saturation (SaO₂) reduction (−17%), returning to prehypoxic levels at the end of NH (2.23 ± 0.20 μmol·min⁻¹). In HH, an oxidative damage was found (at 4 hours, TBARS +10, *p* < 0.05; PC +80%, *p* < 0.01) and up to 1 hour recovery (TBARS +28%, *p* < 0.01; PC +70%, *p* < 0.05), coming back to basal within 8 hours. In HH, ROS significantly increased peaking at 24 hours (range +90%–141%; 4.32 ± 0.68 μmol·min⁻¹; *p* < 0.01), according to the SaO₂ reduction (−14%), decreasing thereafter. At the same time PC, TBARS, 8-iso, and DNA increases were in the 50%–85% range, TAC decreased up to 40%. Passive HH exposure was associated with higher ROS production and related oxidative damage compared with NH (*p* < 0.01; *p* < 0.05 respectively). No differences were found for oxidative stress level according to ascending modality. One hour of simulated hypoxia a day

before HH exposure induced a significant reduction of ROS production (preaccl-HH 70 vs. HH 110%; *p* < 0.01).

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TELECONSULTATION IN THE MOUNTAINS: THE ROLE OF NURSES EXPERT IN MOUNTAIN MEDICINE

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Introduction and Aim: From June 2017 to March 2018, five trained nurses were involved in the é-Res@mont project to develop a new model of teleconsultation in a remote area.

Methods: Nurses were trained in emergency setting and mountain medicine before starting the activity. The teleconsultation took place in five remote locations between 1500 and 3500 m, connected to the doctor through a telematic platform. Communication took place by data transmission, images, or through videoconference. Doctors and nurses chose the validated scales readjusted according to the altitude, defined tools, drugs, and identified a protocol to follow in case of lack of connection. On the basis of symptoms, patients were subjected to clinical evaluation (i.e., vital parameters, pulse oximetry, body mass index, and Lake Louise Score questionnaire); moreover a 12-lead electrocardiogram and lung echo could be performed. Based on the data received, the doctor made diagnosis and gave instructions to the nurse who provided the care.

Results: The activity was carried out for 7 months, with 702 visits (male 61%; average age 49 ± 17 years). The mean value for vital parameters was different according to altitude. The most treated pathologies were acute mountain sickness 8.0%, headache 4.0%, minor trauma 2.3%, and gastrointestinal disorders 1.3%. In 30 cases, the use of emergency rescue was avoided, specifically in 31% of cases the use of helicopter rescue. The average time of response to the nurse call was 20 minutes.

Conclusions: Trained nurses in mountain medicine and telemedicine are crucial: they are link between patients and doctors in the management of critical situation in a mountain environment.

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DEMOGRAPHIC PROFILE OF HELICOPTER-RESCUED PATIENTS VISITING CIWEC HOSPITAL

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Trekking and climbing are popular tourist activities in Nepal and sick travelers are often evacuated to Kathmandu by helicopter. We conducted a retrospective chart study from January 2016 to December 2017 to describe the prevalence and indication of helicopter-rescued patients from different regions of Nepal presenting at CIWEC Hospital.

Results: Among 1353 patients evacuated from the mountains and seen at our facility during the study period, 59% were male and the mean age was 41.8 years. Maximum number of