Identifying the neural correlates of emotion regulation in these subjects is emotionally negative stimuli, which Purpose:

in introspection) might indicate an increased interference from irrelevant degradation of motor performance. On the other side, the reduced uncoupling of left MrD was demonstrated in left inferior temporal gyrus, right anterior and middle cingulate gyrus for the patients with MOH. The increased right MrD connectivity was gathered in the left inferior temporal gyrus and frontal orbital gyrus, and right anterior cingulate gyrus. No decreased functional connectivity was detected.

Conclusion: The results of increased functional connectivity of bilateral MrD may support that MrD play a key role in the pathogenesis of MOH, and our findings also suggest that the characteristics of MO connectivity could plausibly provide an early imaging biomarker for the diagnostic and evaluation of MOH.

B-0855 11:24 Effect of mindfulness meditation on BCI performance: a fMRI study S.-S. Kook, N. Ramli, Y.-Q. Tan, L.-K. Tan, L.-F. Tan, S.-Y. Goh, K.-J. Goh; Kuala Lumpur/MY (sskim.kook@gmail.com)

Purpose: To observe the functional changes in brain activity while performing real and imagery movement using functional MRI (fMRI). To compare the fMRI changes of motor imagery before and after mindfulness meditation (MM) training and correlate this with actual brain computer interface (BCI) performance.

Methods and Materials: Eight right handed healthy volunteers were recruited to participate the EEG brain mapping, BCI performance test and fMRI of real and imagery movement of right hand (RH), left hand (LH) and both feet (BF). They were then randomly assigned into control and intervention groups. The intervention group received 12 hours of MM training. EEG brain mapping, BCI performance test and fMRI scanning were repeated after intervention. Statistical parametric mapping software was used for post processing and analysis of fMRI data.

Results: fMRI groups results showed activation of motor imagery of RH, LH and BF at premotor, prefrontal and visual cortices before MM training (p < 0.05, FWE). After MM training, fMRI results revealed more focus of activation in 3 out of 4 of the trained subjects on RH motor imagery. 2 out of 4 of the trained subjects on LH and BF motor imagery, comparing with the control group. This is also correlated with the improvement of BCI accuracy of the intervention group after MM training.

Conclusion: Mindfulness meditation improves BCI performance and is associated with more focus of functional changes in cerebral cortex on motor imagery.

correlated with CBF (R = 0.96, p < 0.001), MTT (R = 0.85, p < 0.001), and CVR (R = 0.92, p < 0.001).

Conclusion: In patients with SIAS, basal and functional hemodynamic disorders are associated with a decreased oxygen metabolism, suggesting a low-grade chronic ischemia.

B-0852 10:48 Effects of refractive errors on functional magnetic resonance imaging of visual cortex A. Akça, Y. Arık, Z. Sakio, M. Gençtürk, B. Özkul, A. Kaya, Ö. Altıntaş; Koçak/TR (one.442@yahoo.com)

Purpose: The purpose of our study is to evaluate the effects of refractive errors on functional magnetic resonance imaging of visual cortex

Methods and Materials: We performed a prospective study that included 13 patients with refractive error (group 1) and 30 emetropic volunteers (group 2). Group 2 was also subgrouped as 20-32 years old (young) and over 45 years old (old) to analyse presbyopia and accommodation effect. fMRI data were acquired with a block design paradigm with 3 Tesla MRI. In both groups, BOLD data initially was acquired in normal refractive state. fMRI was performed again in group 1 without their glasses/lenses and in group 2 with induced-myopia via +2D and +4D lenses. BOLD activation areas on visual cortex were calculated as square centimetre area in another workstation. Total activated area on visual cortex was determined between normal refractive and induced/uncorrected refractive error.

Results: In group 1, fMRI data during uncorrected refractive error revealed significantly decreased activation areas compared with corrected refractive error (p<0.001). In group 2, induced-myopia resulted significant decrease compared with normal refractive state. Decreased activation areas was significant both in 2D (p<0.003) and 4D (p < 0.001) myopia compared with normal refractive state. Both in young and old group, activation areas were significantly decreased during induced-myopia. We revealed no difference between young and old groups.

Conclusion: fMRI is a useful method to facilitate function preserving surgery in patients with brain tumour and epilepsy. Because the refractive errors affect the visual fMRI activations, they should be corrected in all refractive states.

B-0853 10:57 Functional connectivity of the subthalamic nucleus changes with age C. Mathys, F. Hofstaetter, J. Caspers, S. Caspers, S.B. Eickhoff, R. Langner, C. Rubbert; Düsseldorf/DE (christian.rubbert@med.uni-duesseldorf.de)

Purpose: The subthalamic nucleus (STN) plays a major role in motor control (which is known to decline with age), but also in emotionally and cognitive processing. The aim of this study was to detect age-related functional connectivity (FC) changes of the STN with resting state imaging (RSI).

Methods and Materials: 361 healthy adults (mean age 41.8 years) had RSI (motion; mean tissue class-related signal). Data were acquired with a block design pradigm with 3 Tesla MRI. In both groups, BOLD activity was represented by the time-series and then correlated with structural images, and was applied to the computation of functional connectivity (FC) maps. Two-samples t-tests were performed on the individual FC maps the comparison of FC of MrD between two groups.

Results: Compared with normal controls, the increased functional connectivity of left MrD was demonstrated in left inferior temporal gyrus, right anterior and middle cingulate for the patients with MOH. The increased right MrD connectivity was gathered in the left inferior temporal gyrus and frontal orbital gyrus, and right anterior cingulate gyrus. No decreased functional connectivity was detected.

Conclusion: The results of increased functional connectivity of bilateral MrD may support that MrD play a key role in the pathogenesis of MOH, and our findings also suggest that the characteristics of MO connectivity could plausibly provide an early imaging biomarker for the diagnostic and evaluation of MOH.

B-0854 11:06 Regional cerebral changes and functional connectivity during the observation of negative emotional stimuli in earthquake survivors with post-traumatic stress disorder in L’Aquila M. Anissi, A. Catalucci, V. Felli, L. Patiarcha, M. Pino, M. Mazzu, M. Gallicchi; L’Aquila/IT (monicaesemiliaribero.it)

Purpose: Patients with PTSD exhibit exaggerated brain responses to emotionally negative stimuli, which normally activate the limbic system. Identifying the neural correlates of emotion regulation in these subjects is important for elucidate the neural circuitry involved in emotional dysfunction. To investigate the functional connectivity between the areas activated during emotional processing of negative stimuli in a sample of PTSD compared to healthy subjects.

Methods and Materials: Ten PTSD subjects (survived the 6.3magnitude earthquake on April 6,2009 in L’Aquila) (DSM-IV-R, APA 2000) and ten healthy controls underwent fMRI (GE 1.5 T), during observation of 80 images (40 negative emotional stimuli and 40 scrambled neutral stimuli). Clinical and neuropsychological assessment was administered to all subjects with PTSD. Statistical data analysis were performed using Brain Voyager QX 6.0.

Results: A higher activation was found in the left posterior (LP) insula for PTSD group, and in the ventromedial prefrontal cortex (vmPFC) for the healthy group. Two sets of Granger causality modeling (GCM) analyses were performed, to examine the directed influences to other brain regions from LP-insula and vmPFC, identified individually for each PTSD and healthy subject respectively. Activity in the vmPFC in the healthy group while observing negative emotional stimuli predicted activity in several subcortical regions and insula.

Conclusion: The activation of the fronto-limbic network in healthy but not in PTSD suggests a lack of mediation and cortical control of emotional processes in these patients. This pattern of directed influence can be interpreted as the neural correlate of emotional control.