Document category	:	ISI Web of Science Scopus
Title	:	Human cortical theta reactivity to high-frequency repetitive transcranial magnetic stimulation
Author	:	Azila Noh, N., (Universiti Sains Islam Malaysia) Fuggetta, G., (University of Leicester)
Abstract	:	Electroencephalography (EEG) can directly monitor the temporal progression of cortical changes induced by repetitive Transcranial Magnetic Stimulation (rTMS) and facilitate the understanding of cortical and subcortical influences in the genesis of oscillations. In this combined rTMS/EEG study, we aimed to investigate changes in oscillatory activity after high-frequency (∼11 Hz) rTMS relative to the number of applied pulses. Twenty intermittent trains of 20 or 60 rTMS pulses were delivered over the human primary motor cortex at rest and tuned to individual mu frequency. The regional and interregional oscillatory neural activity after stimulation were evaluated using event-related power (ERPow) and event-related coherence (ERCoh) transformations. The most prominent changes for ERPow were observed in the theta band (4-7 Hz), as an increase in ERPow up to 20 s following 60 rTMS pulses, whereas ERPow increases were smaller in mu (10-12 Hz) and beta (13-30 Hz). ERCoh revealed that rTMS 60 modulated the connectivity in the theta band for up to 20 s. The topography of mu and theta changes were not identical; mu was more focal and theta was more global. Our data suggested the presence of independent cortical theta and mu generators with different reactivity to rTMS but could not rule out possible thalamocortical contributions in generating theta and mu over the motor network. © 2011 Wiley Periodicals, Inc.
Subject	:	EEG-TMS combination; Event-related coherence; Event-related power; Motor cortex; Oscillations; Synaptic plasticity
Type	:	Article
Journal	:	Human Brain Mapping
ISSN	:	10659471
e-ISSN	:	
Publisher	:	
Year issue	:	2012
Language	:	English