

## **P-1377 - TRANSCRANIAL MAGNETIC STIMULATION IN REHABILITATION OF EXECUTIVE FUNCTIONS**

E.Munoz-Marron, D.Redolar-Ripoll, N.Robles, L.Andreu-Barrachina, M.Boixados-Angles

<sup>1</sup>Universitat Oberta de Catalunya, <sup>2</sup>IN<sup>3</sup>, Universitat Oberta de Catalunya, Barcelona, Spain

Transcranial magnetic stimulation (TMS) has been applied as a therapeutic tool in clinical interventions since few years. Although first approaches were focused in rehabilitation of motor functions, nowadays some researchers and clinicians are interested in cognitive rehabilitation. Research in executive functions and TMS are really scarce in normal subject as well as in clinical samples. This construct describe a group of cognitive abilities (reasoning, cognitive flexibility, behavior inhibition, planning, decision making, etc.) whose main function is control and regulation of cognitive processes. The main brain area that underlies these functions is the dorsolateral prefrontal cortex (DLPFC).

Borojerdi *et al.*, (2001) have demonstrated with repetitive TMS (rTMS) the influence of left DLPFC in analogical reasoning; and the group of Moser in cognitive flexibility (Moser *et al.*, 2002). In relation to behavior inhibition, assessed by go/no-go tasks, Bermpoht and his colleagues have shown that slow rTMS ( $\leq 1$ Hz) in left DLPFC improves the precision in performance but not the speed, meanwhile fast rTMS ( $> 1$ Hz) in right DLPFC has a negative effect on performance (Bermpoht *et al.*, 2006). Stroop tasks have also been assessed before rTMS in left DLPFC, and in some cases there were an improvement of performance (Vanderhasselt *et al.*, 2006) but not in others (Wagner *et al.*, 2006). Other groups have focused their interest on risk decision making, and results show that slow rTMS in right DLPFC makes the people take riskier decisions and accept unfair proposals (Knoch *et al.*, 2006a; Knoch *et al.*, 2006b; Van't Wout *et al.*, 2005).