Ottava Giornata della Ricerca della Svizzera Italiana
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Modulo per la sottomissione abstract ricerca di LABORATORIO

Titolo (massimo **15 parole**)

Acute and chronic dopamine depletion differently affect thalamic and cortical beta band

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Testo (massimo **250 parole**, preferibilmente in italiano (accettato anche in inglese), suddiviso in Introduzione, ***Metodi***, ***Risultati***, ***Conclusioni*** e ***Finanziamento***

The study of the neuronal oscillations could provide the basis for specific biomarkers or even tailored treatment for Parkinson's disease (PD). Pathological cortical oscillations in the beta band are the hallmark of PD. The thalamus is the main structure modulating cortical activity in PD. However, there are only limited and controversial evidences on the beta band at the level of the motor thalamus (MTh) and its major modulator, the nucleus reticularis thalami (NRT).

Here we examined the effects of acute and chronic DA depletion on the beta band (13–25 Hz) within the cortex, the MTh and the NRT. The acute and chronic DA-denervated rats were produced by acute injection of tetrodotoxin or 2 weeks after 6-hydroxydopamine, respectively, into the medial forebrain bundle.

We found that chronic DA depletion state differently affected the cortical and thalamic beta and gamma bands: the cortical beta band increases, whilst it decreases in NRT and remains unaffected in MTh. Interestingly, the acute state determined a decrement of beta band in both MTh and NRT with no change in the cortex.

As expected, pathological cortical beta band is observed after chronic DA depletion corroborating its role as biomarker of PD. Since in both thalamic structures the beta band is rather reduced during the acute DA depletion and unchanged in MTh of chronic animals, we hypothesize that cortical beta band in PD is a secondary intra-cortical phenomenon, possibly reflecting an underlying adaptive mechanism not expressed in acute DA depletion state.

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Visto superiore (prego indicare Nome e Cognome del superiore)

Dr. Salvatore Galati

Criteri per sottomissione Abstract:
NO Case report
NO Abstract senza nessun risultato
VISTO da un superiore

Invio Abstract