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THE PRE-PULSE INHIBITION DEFICIT IN OBSESSIVE-COMPULSIVE DISORDER

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Pre-Pulse Inhibition (PPI) of the Acoustic Startle Response (ASR) is an operational measure of sensorimotor gating. Because top-level symptoms in obsessive compulsive disorder (OCD) suggest failures in inhibition processes and the pathophysiology of this disorder includes disturbances in brain regions that control PPI, we hypothesized that OCD patients should exhibit deficient PPI.

PPI was examined in 17 OCD patients and 29 healthy controls (HC). Electromyography response (EMG) was used as dependent variable. We used an acoustic stimulation and three Inter-Stimulus Intervals (ISI): 120, 60 and 30 ms.

Significant differences between OCD and HC in percent inhibition (% PPI) were found in pp 120ms [$F = 7.71$, $p < .008$] and in pp 60ms [$F = 10.22$, $p < .002$] conditions. In both conditions there was no significant main effect of Block on % PPI. In pp 30ms trials, PPI was considerably lower in patients (-0.54 ± 23.45 %PPI) than healthy subjects (17.42 ± 55.99 %PPI) but no main effect for group was found [$F = 1.29$, $p = .26$]. % PPI correlations with clinical variables like severity of OCD symptoms, age of onset or durations of illness were not significant in our study.

Two precedent studies and this results strongly suggest that OCD patients were characterized by reduced PPI, suggesting a deficient sensorimotor gating, but it is not clear if could be a stable or a state dependent trait. Further research could focus on this issue, because if reduced PPI is a stable trait in OCD, it may qualify as an endophenotype for this disorder.