

PRE-PULSE INHIBITION AS A PSYCHOPHYSIOLOGICAL MARKER OF LOCOMOTOR SENSITIZATION INDUCED BY COCAINE IN FEMALE MICE

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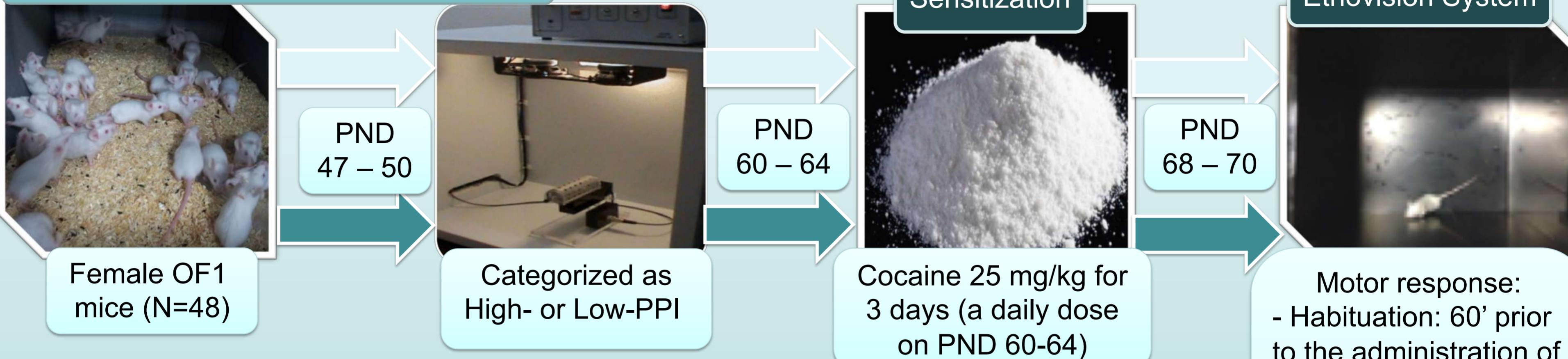
INTRODUCTION

The differences in the inhibitory mechanisms in the brain, mainly regulated by the dopaminergic system, are related to a greater predisposition to develop a compulsive drug use disorder. Pre-pulse Inhibition (PPI) of the startle response consists in the reduction of the startle reflex in response to an intense stimulus (pulse) when it is shortly preceded by a weaker, non-startling stimulus (prepulse). Considering that the neural structures regulating PPI and drug addiction are similar (nucleus accumbens), we have evaluated and confirmed in previous studies the predictive ability of PPI to identify the more vulnerable mice to the effects of cocaine in the Conditioned Place Preference in both male and female mice (Arenas et al., 2018) and to the development of motor sensitization in male mice only (Arenas et al., 2017).

OBJECTIVE

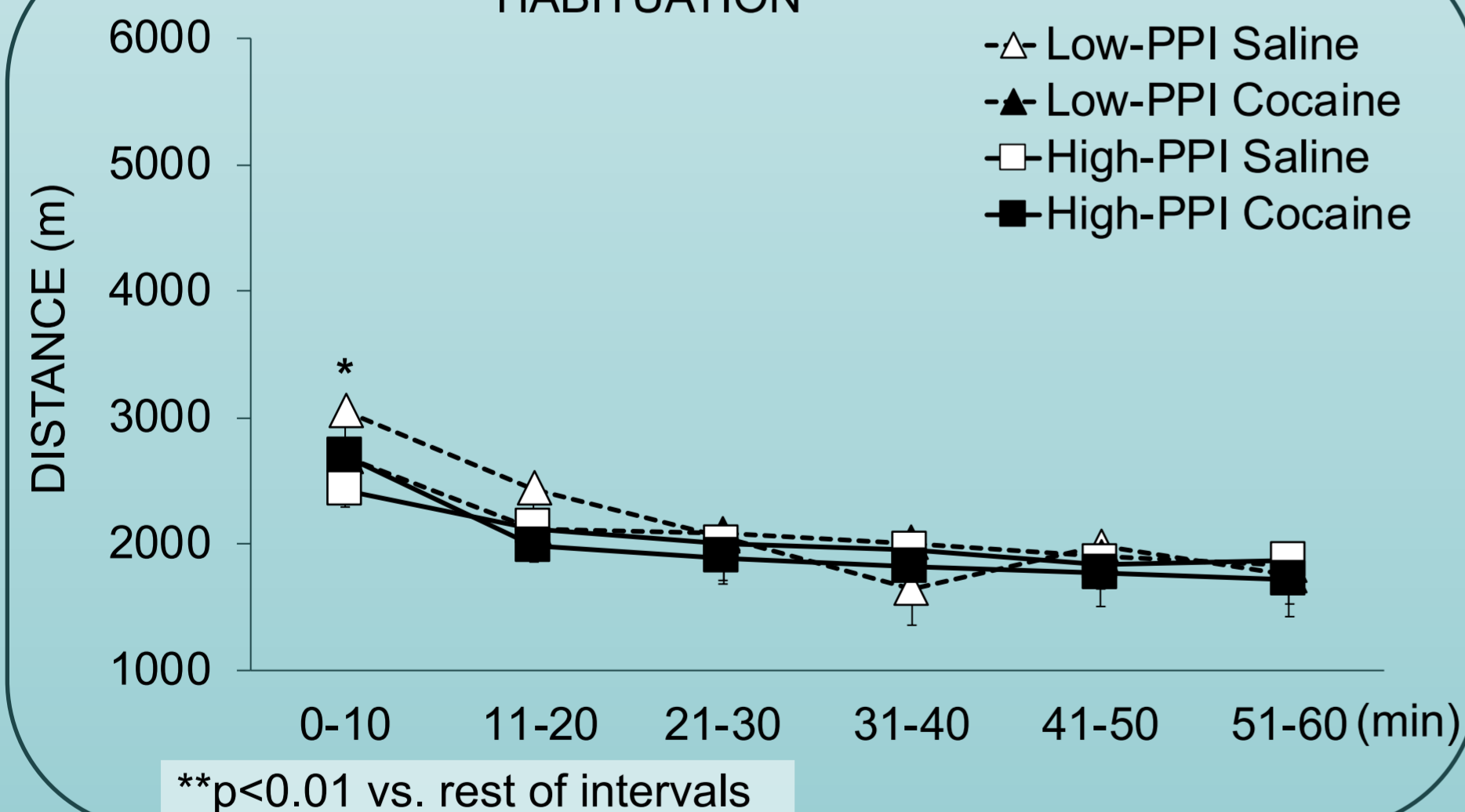
The present study aimed to evaluate whether PPI can also be considered a predictive endophenotype for the vulnerability to developing sensitization to the motor effects of cocaine in females.

MATERIAL AND METHODS

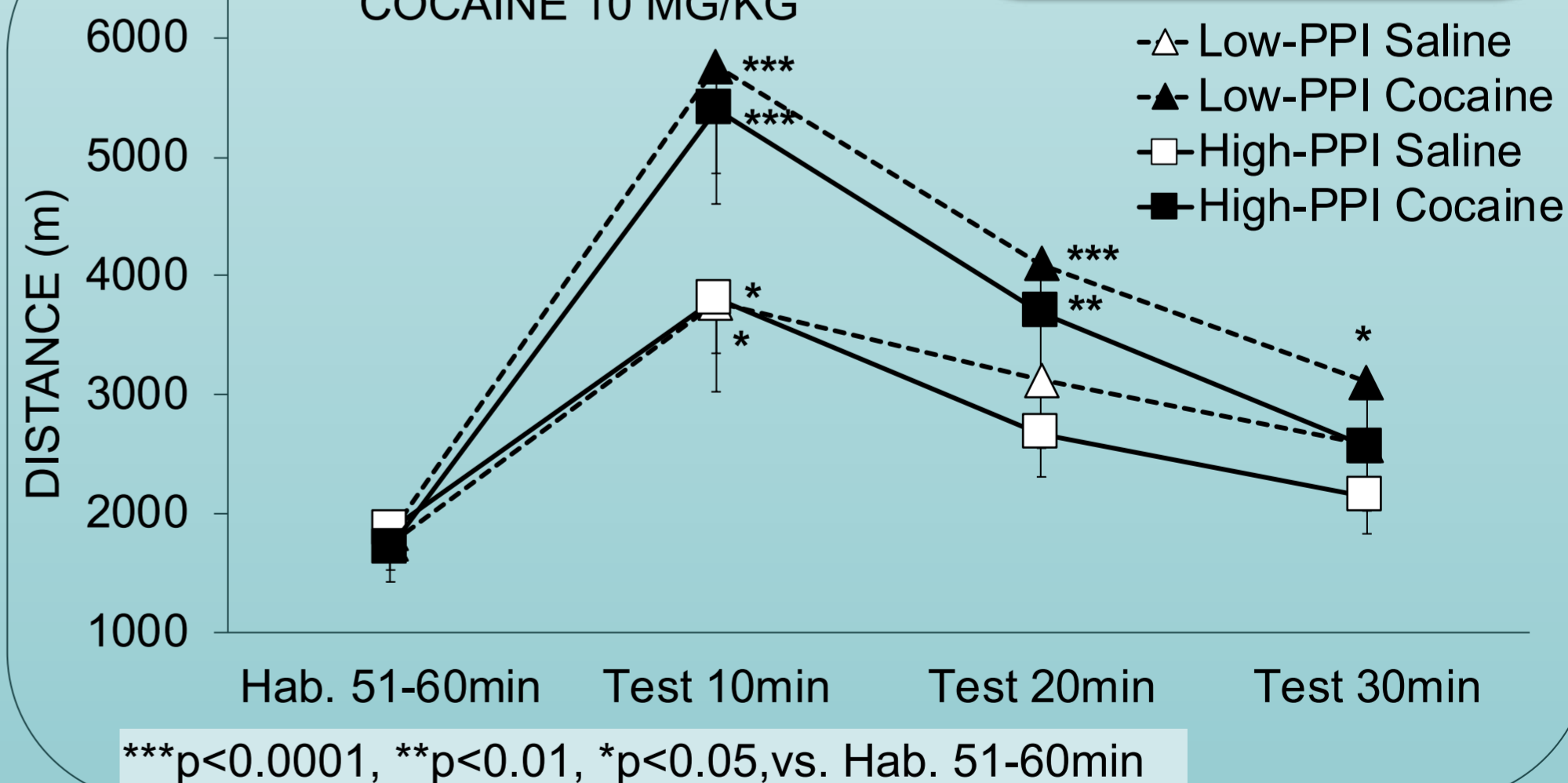


RESULTS

HABITUATION



TEST: MOTOR ACTIVITY COCAINE 10 MG/KG



DISCUSSION

These results confirm that PPI can also predict the greater vulnerability of female mice to develop cocaine-induced motor sensitization. Low-PPI females presented a more prolonged sensitization than their high-PPI counterparts, as we previously observed in males. The development of behavioral sensitization after drug exposure is related to the transition from use to compulsive consumption. Therefore, we consider a low PPI to be indicative of a greater vulnerability to the motor action of cocaine, indicating that PPI may be an endophenotype for vulnerability also in females.

REFERENCES

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Arenas, M.C.; et al. II International Psychobiology Congress. Ávila 19, 20 and 21 July, 2017. Poster.

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