

Poster presentation

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Involvement of GABA-B receptors of the dorsal hippocampus in the inhibition of morphine-induced amnesia by morphine sensitization

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from International Society on Brain and Behaviour: 3rd International Congress on Brain and Behaviour
Thessaloniki, Greece. 28 November – 2 December 2007

Published: 17 April 2008

Annals of General Psychiatry 2008, **7**(Suppl 1):S207 doi:10.1186/1744-859X-7-S1-S207

This abstract is available from: <http://www.annals-general-psychiatry.com/content/7/S1/S207>

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Background

Our previous studies show that pre-training administration of morphine induces amnesia [1] and this effect was significantly reduced in morphine-sensitized mice [2]. In the present study the role of GABA-B receptors of the dorsal hippocampus in the inhibition of morphine-induced amnesia by morphine sensitization were investigated in mice.

Materials and methods

A single-trial step-down passive avoidance task was used for the assessment of memory retention in adult male NMRI mice. Animals were bilaterally cannulated in the CA1 regions by stereotaxic instrument, and were allowed to recover 1-week before behavioral testing.

Results

Morphine-induced amnesia was reversed in morphine-sensitized mice which had previously received once daily injections of morphine for 3 days. The inhibition of morphine-induced amnesia in animals that had previously received the 3-days morphine treatment was significantly decreased by once daily injections of the different doses of GABA-B receptor agonist, baclofen prior to s.c. injections of morphine. Amnesia induced by pre-training morphine had no significant change in mice which had previously received once daily injections of CGP35348 plus an ineffective dose of morphine for 3 days.

Conclusions

The present results indicate that GABA-B receptors of the dorsal hippocampus may play an important role in the inhibition of morphine-induced amnesia by morphine sensitization.

References

1. Zarrindast MR, Jafari-Sabet M, Rezayat M, Djahanguiri B, Rezayof A: **Involvement of NMDA receptors in morphine state-dependent learning.** *Intern J Neuroscience* 2006, **116**:1-13.
2. Zarrindast MR, Rezayof A: **Morphine state-dependent learning: sensitization and interactions with dopamine receptors.** *Eur J Pharmacol* 2004, **497**:197-204.