Seminar/Talk

Regulation of anxiety, and cognition in the presence or absence of pain by peroxisome proliferator-activated receptors (PPARs)

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Host: Lora Sweeney

Peroxisome proliferator-activated receptors (PPARs) are nuclear receptors that modulate pain, anxiety, and cognition. However, their role in pain-fear/anxiety interactions is unknown. In the present project, we explored the hypothesis that PPARs modulate innate anxiety responses and mnemonic function by examining the effects of intraperitoneal administration of GW6471 (PPAR antagonist), GSK0660 (PPAR antagonist), GW9662 (PPAR antagonist), and PEA on the elevated plus maze (EPM), open field (OF), light-dark box (LDB), and novel object recognition (NOR) tests in rats. Additionally, because of the impact of pain on anxiety and cognitive responses, a possible differential effect of the drugs depending on the presence or absence of chronic inflammatory pain induced by intra-plantar injection of Complete Freunds Adjuvant (CFA) was also considered. The results indicate a modulatory effect of chronic inflammatory pain on cognitive processing, but not on innate anxiety-related responses. Moreover, in the presence of chronic inflammatory pain, blockade of PPAR impaired spatial memory and tended to increase anxiety-related responses in the LDB test. PPAR and PPAR blockade nor PEA did not modulate cognition or anxiety, either in the presence or in the absence of pain. The blockade or activation of these receptors does not appear to modulate mechanical allodynia evoked by CFA injection.

Tuesday, November 3, 2020 02:00pm - 04:30pm
online

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