Antagonistas de los receptores glutamatérgicos NMDA en el tratamiento del dolor crónico [

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text (article)

Analítica

NMDA receptors are associated to learning and memory processes, development and neural plasticity, as well as acute and chronic pain conditions. They are involved in the outset and maintenance of central sensitization associated to damage or inflammation of peripheral tissues. Glutamate is the main amino acid that stimulates the CNS, can be involved in nociceptive transmission processes at the spine level and is the main responsible for the fast synaptic transmission. The action of glutamate in the pain routes is mostly mediated by ionotropic receptors (AMPA, NMDA and kainic). The activation of NMDA receptors plays a major role in the excitatory neurotransmission and the synaptic plasticity of the CNS. Glutamate and its agonists (NMDA, AMPA or kainic acid) are involved in the generation and maintenance of hyperalgesia conditions (exacerbated response to noxious stimulus) and alodynia (decrease of pain threshold). The clinical effectiveness of NMDA receptor antagonists (ketamine, memantine, amantadine, dextromethorphan, methadone) is analyzed. Their potential indications include: cancer-related neuropathic pain; postherpetic neuralgia, chronic traumatism; amputation; spine injury; centrally-originated pain secondary to cerebrovascular accident, phantom limb pain; restless legs syndrome, orofacial chronic pain; fibromyalgia and surgery, among others. The effectiveness of ketamine when orally or parenterally administered has been studied in central dysesthesic pain, neuropathic pain in the traumatic cauda equina syndrome, alodynia and hyperalgesia. Dextromethorphan is a non-opiate antitussive and a non-competitive blocker of NMDA receptors. One of its indications is the management of diabetic neuropathy. Methadone binds mainly to opiate receptors mu, but it is also a non-competitive antagonist of NMDA receptors. The use of methadone improves the management of pain since it reduces the development of tolerance to opiates. Memantine is a non-competitive antagonist of NMD
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