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Pharmacologic therapies in endometriosis: a systematic review.

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Abstract

To assess the literature on preclinical and clinical efficacy and safety data of pharmacologic groups proposed in the treatment of endometriosis, we performed a systematic review of publications from March 2002 to January 2012 via PubMed search. Additional relevant articles were identified from citations within these publications. A high number of medications were tested in preclinical models of endometriosis due to their theoretic capacity of disrupting important pathophysiologic pathways of the disease, such as inflammatory response, angiogenesis and cell survival, proliferation, migration, adhesion, and invasion. Tumor necrosis factor α-blockers, nuclear factor κB inhibitors, antiangiogenic agents, statins, antioxidants, immunomodulators, flavonoids, histone deacetylase inhibitors, matrix metalloproteinase inhibitors, metformin, novel modulators of sex steroids expression, and apoptotic agents were all effective in in vitro/animal models. Most of these agents have not been tried in the clinical setting, mainly because of the high risk of adverse effects. However, some of them can be used in humans. Dopamine agonists and valproic acid have already been tested in pilot studies with good results. Etanercept, metformin, and statins are used in humans for other indications, and endostatin is now being tested in phase 2 oncologic trials. These drugs may constitute alternatives to conventional therapy with estrogen inhibitors and anti-inflammatory agents.

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