P01.07

Synergistic effects of black Cohosh and Tamoxifen in an animal model of mammary carcinoma

Thomas Nisslein, J Freudenstein

Schaper & Bruemmer GmbH & Co KG, R&D, Veterinary Medicine, Salzgitter, Germany

Dimethyl-benz(a)-anthracene (DMBA) is a well established chemical carcinogen in inducing estrogen-receptor positive mammary tumors in female Sprague–Dawley rats. Tamoxifen as a mammotropic estrogen antagonist prevents this neoplastic growth and is widely used for adjuvant breast cancer treatment, however induces, side effects like vasomotoric dysfunction. A standardized isopropanolic extract of rhizoma acteae (= cimicifugae) racemosae (iCR) is traditionally used for alleviating symptoms of postmenopausal estrogen deficiency. In vitro experiments in human mammary carcinoma cells showed iCR to be free of estrogen agonistic effects; it moreover antagonized estradiol effects and augmented tamoxifen-induced proliferation inhibition. In order to test for synergistic effects of iCR and tamoxifen, we titrated the tamoxifen dose required to achieve an approximately 40% reduction in the incidence of mammary tumors compared with untreated controls and with an approximately 6-fold increased tumor burden compared with the established treatment optimum. Thus a daily dosage of 50 µg tamoxifen/kg BW was administered to three groups of ten female Sprague–Dawley rats where tumor growth had been initiated by DMBA. Besides the tamoxifen-only control group, one treatment group received iCR in a dose of 60 mg herbal drug/kg BW and the second treatment group received 600 mg herbal drug/kg BW. Combined treatment resulted in an increase in the incidence of tumor-free animals from 20 to 50% with a considerable retardation of neoplastic growth. These findings during disease development were corroborated by results obtained at necropsy, where individual tumor burden could be reduced by 50%. Our results obtained in an established mammary tumor animal model suggest that iCR, apart from possessing no tumor promoting activity even acts synergistically on tamoxifen's anti-neoplastic effect.

Maturitas The European Menopause Journal
Vol. 44 Suppl. 2 S83-S166 (2003) May 15 2003
ISSN 0378-5122