

Inhibitory effect of curcumin on angiogenesis in ectopic endometrium of rats with experimental endometriosis.

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Abstract

The aim of this study was to observe the inhibitory effect of curcumin on endometriosis (EMS) and to determine its influence on vascular endothelial growth factor (VEGF) and microvessel density (MVD) in eutopic and ectopic endometrium of experimental rats, thus exploring the pathogenesis of EMS offering more experimental evidence for the clinical use of curcumin. Forty-eight female virgin rats were subjected to autotransplantation of endometrium during the estrus stage. After four weeks, 8 rats were randomly sacrificed to confirm that the rat model was successful. The remaining rats were randomly divided into four groups. Three groups were intragastrically administered curcumin (50, 100 and 150 mg/kg), and the model group was intragastrically administered vehicle alone. All rats were treated daily for four continuous weeks and examined by histology and immunohistochemical staining for MVD of eutopic and ectopic endometrium. Our results revealed that the cubic capacity of focal tissue in gross appearance was high in the model group and dose-dependently diminished after treatment with curcumin ($P < 0.05$). There was an increase in MVD and VEGF in the ectopic endometrium, which was decreased significantly after treatment with curcumin ($P < 0.05$); the effects being dose-dependent. The correlation between MVD and VEGF was positive. In conclusion, heterogeneity was found to exist between eutopic and ectopic endometrium due to differences noted in MVD and the expression of VEGF between the eutopic and ectopic endometrium in the model group. Curcumin decreased the quantity of microvessels and VEGF protein expression in the heterotopic endometrium of rats with EMS.