論 文 要 旨

Comparison of oxidative stress on DNA, protein, and lipid in patients with actinic keratosis, Bowen’s disease, and squamous cell carcinoma

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Detailed mechanisms on the effect of oxidative stress (OS), an etiological factor involved in photocarcinogenesis, remain to be fully elucidated. We used immunohistochemial methods to study OS in the DNA, protein, and lipid of patients with actinic keratosis (AK), Bowen’s disease (BD), and squamous cell carcinoma (SCC). Between January 2009 and December 2014, we treated 230 patients; 79 had AK, 61 had (BD), and 90 had cutaneous SCC; 28 healthy subjects served as the normal control. OS on DNA, protein, and lipid was assessed by the expression of 8-hydroxydeoxyguanosine (8-OHdG), dityrosine (DT), and malondialdehyde (MDA), respectively. 8-OHdG was significantly overexpressed in AK and BD lesions compared with surrounding non-lesional tissue, SCC lesions, and the healthy controls. DT was more highly expressed in AK, BD, and SCC than in the controls. There was no significant difference among AK, BD, and SCC. The expression of MDA was higher in AK, BD, and SCC lesions than the controls; SCC showed the highest expression. Our observations suggest that DNA oxidation plays an important role in the early stage of carcinogenesis, that protein oxidation is involved in all stages of carcinogenesis, and that lipid oxidation is strongly implicated in the late stages of carcinogenesis.