Nitric oxide produced by iNOS is associated with collagen synthesis in keloid scar formation

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摘要

Abstract

Nitric oxide (NO) has emerged as an important mediator of many physiological functions. Recent reports have shown that NO participates in the wound healing process, however, its role in keloid formation remains unclear. This study aimed to investigate the effect of NO on keloid fibroblasts (KF) and to determine the levels of inducible nitric oxide synthase (iNOS) expression in clinical specimens of keloid. Scar tissue from seven keloid patients with matched perilesion skin tissue controls was studied for inducible nitric oxide synthase expression and location. In addition, primary keloid and normal scar skin fibroblast cultures were set up to investigate the effects of NO in inducing collagen type I expression. Inducible nitric oxide synthase expression, and NO production were elevated in keloid scar tissues but not in matched perilesion skin tissues. Furthermore, exposure of KF to exogenous NO resulted in increased expression of collagen type I in a dose-dependent manner. NO exposure also induced time-course dependent collagen I expression that peaked at 24h in KF. Taken together, these results indicate that excess collagen formations in keloid lesion may be attributed to iNOS overexpression.