Inducible nitric oxide synthase inhibition influencedgranuloma formation with suppressed collagen expressionin myositis caused by Toxocara canis in mice

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摘要

Abstract

The role of nitric oxide (NO) in granuloma pathology is largely unclear to date. We investigated the role of NO in fibrotic granuloma development in the musculature of mice infected with Toxocara canis from 1 day (dpi) to 8 weeks post-infection (wpi) using the NO synthase (NOS) inhibitors, L-NIL (l-N6-1-iminoethyl lysine). In infected mice, elevated serum NO concentrations were seen at 1 dpi (204.1 +/- 0.2 microM) and 1 wpi (145.1 +/- 0.2 microM); it declined drastically from 4 wpi onwards (57.0 +/- 0.1 microM). In L-NIL-treated mice, the NO concentration was drastically reduced from 15% during 1 wpi; thereafter, it was restored to almost half that in infected mice. Inducible NOS expression was enhanced in infected and L-NIL-treated mice at 4 wpi but declined at 8 wpi as assessed by immunohistochemistry. L-NIL treatment resulted in large, irregularly shaped granulomas with suppressed collagen contents at 4 wpi but not at 8 wpi. The suppressed collagen contents might have been related to decreased serumNO and Th2-type cytokine of interleukin-4 but not Th1-type cytokine of interferon-gamma expression.