عنوان مقاله:

Pseudomonas aeruginosa keratitis: passive immunotherapy with antibodies raised against divalent flagellin

محل انتشار:

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خلاصه مقاله:

Objective(s): Pseudomonas aeruginosa infections such as keratitis are considered among the major health problems worldwide due to the complexity of pathogenesis and antibiotic resistance crisis, thus, finding new effective approaches for prevention and treatment of the infections seem to be still vital. In this report, we aimed to investigate the therapeutic effects of topical administration of the antibodies against type a and b-flagellin (FLA and FLB) in Pseudomonas keratitis model of infection in mice. Materials and Methods: Scratched corneas of mice were treated with approximately 107 CFUs/eye of PAK and/or PAO1 strains of P. aeruginosa. Specific IgG to FLA, FLB or divalent flagellin were topically applied to the infected corneas for 20 min, 24, and 36 hr post-infection. The bacterial burden and myeloperoxidase activity (as a marker for polymorphonuclears (PMNs) infiltration) were determined in the corneas. The biological activity of the anti-FLA and FLB IgG was evaluated in vitro by opsonophagocytosis test. Results: Compared to other treated corneas, divalent anti-flagellin IgG treatment showed a significant decrease in the bacterial CFUs and myeloperoxidase activity in the infected corneas ($P<0.05$). Results of opsonophagocytosis revealed that the specific antibodies raised against FLA and FLB had more potent opsonic killing activity on their homologous strains as compared with control group ($P<0.05$). Conclusion: It appears that in P. aeruginosa keratitis, topical administration of the combined antibodies likely via decreasing the bacterial load, and PMNs infiltration as well as increasing opsonophagocytosis could lead to dramatic improvement of the infected corneas.

کلمات کلیدی:

Divalent antibody, Flagellin, Keratitis, Mmice, *Pseudomonas aeruginosa*