

Azithromycin, modulates immune responses to Pneumococcal Conjugate Vaccine (PCV7) and inhibits inflammatory cytokines in healthy and lipopolysaccharide-treated mice

Afifi Nehal A

Cairo University, Egypt

Abstract

Macrolide antibiotics, including azithromycin, are involved within the modulation of host immune reaction, independently of their antimicrobial properties. Macrolides inhibit the assembly of varied cytokines and therefore the migration of inflammatory cells. These anti-inflammatory actions could also be beneficial in attenuating inflammatory process involved in bacterial sepsis. Therefore, we investigated the power of azithromycin to attenuate the deleterious effects of Lipopolysaccharide (LPS). This study was designed to work out the effect of azithromycin on pro-inflammatory cytokines ((TNF α , IL-6 and IL1 β) in healthy and lipopolysaccharide – treated mice. Moreover, to research the effect of that azithromycin on protective humoral immune responses induced by a 7-valent, polysaccharide, Pneumococcal Conjugate Vaccine (PCV7) by determination of (IgG) and (IgM). Our results show that Oral administration of azithromycin (10 and 100 mg/kg) half-hour before lipopolysaccharide injection causing significantly decrease in total leucocytic count, lymphocytes %, neutrophils %, also as significantly attenuated the LPS-induced increase in plasma (TNF- α) conc. By use of a PCV7, it had been found that oral administration of azithromycin (10 and 100 mg/kg b.wt) one hour before vaccine causing significant decrease in immunoglobulins; (IgM) and (IgG) led to significantly lower primary antibody responses. The results demonstrate that azithromycin are often inhibitory with reference to protective immune responsiveness. last, azithromycin exhibits significant antiinflammatory properties.

drnehal_affifi@hotmail.com

Note: This work is partly presented at World Congress on Toxicology & Applied Pharmacology, October 15-16, 2018 | Rome, Italy.