

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

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Macrolide antibiotics, including azithromycin, have been involved in the modulation of host immune response, independently of their antimicrobial properties. Macrolides inhibit the production of various cytokines and the migration of inflammatory cells. These anti-inflammatory actions may be beneficial in attenuating inflammatory process involved in bacterial sepsis. Therefore, we investigated the ability of azithromycin to attenuate the deleterious effects of lipopolysaccharide (LPS). This study was designed to determine the effect of azithromycin on proinflammatory cytokines ((TNF α , & IL-6) in healthy and LPS – treated mice. Moreover, to investigate the effect 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) 30 minutes prior to LPS injection causing significantly decrease in total leucocytic count , lymphocytes % , neutrophils % ,as well as significantly attenuated the LPS-induced increase in plasma(TNF- α) conc. By use of a pneumococcal conjugate vaccine(PCV7) , it was found that Oral administration of azithromycin(10 & 100mg/kg b.wt) one hour prior to vaccine causing significant decrease in immunoglobulins; (IgM) and(IgG) led to significantly lower primary antibody responses. The results demonstrate that azithromycin can be inhibitory with regard to protective immune responsiveness . In conclusion, azithromycin exhibits significant anti-inflammatory properties.



Biography

Dr. Nehal Afifi a Professor of pharmacology and head of pharmacology department in Faculty of Veterinary Medicine, at Cairo University . Dr. Nehal's research has focused on Pharmacology, Toxicology, Ethno pharmacology and Pharmaceutics. Her expertise in immune pharmacology; investigate the effect of drugs, environmental pollutants as insecticides , heavy metals to various animal vaccines especially in poultry, food- producing animals and fish. Prof. Nehal and her team have published over 60 manuscripts on applied pharmacology and toxicology. She currently serves as an editor and reviewer for many international journals. Dr. Nehal obtained Cairo University Encouragement Prize for Scientific researchers in 2002, the field of bioavailability as well as the Cairo Univ. award for international publications for 5 successive years. She has great experience in Teaching, Education, Research, Evaluation, and Reviewing.

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