Preface: NF-κB, Immune System and Chronic Diseases: How Are They Linked?

NF-κB was first discovered by Ranjan Sen and David Baltimore in 1986 as a factor/protein found in the nucleus of the B cells and which binds to the enhancer of the kappa chain of immunoglobulin, thus named nuclear factor kappa B. Today NF-κB has almost 55,000 citations. NF-κB is present in every cell type of the body and conserved all the way from Drosophila to man. Over 500 different genes have been shown to possess NF-κB-binding sites in their promoter region which control the expression of proteins linked to a variety of cell signaling pathways including those linked to transformation, cell survival, proliferation, invasion, angiogenesis, metastasis, and inflammation (www.nf-kb.org). Although acute activation of NF-κB is closely linked with the functioning of the innate immune system, chronic activation of NF-κB mediates the pathogenesis of various diseases. Numerous gene products regulated by NF-κB have been associated with activation of the immune system and various chronic diseases known to mankind. Even aging is associated with chronic activation of NF-κB. The current special issue discusses the role of NF-κB in rheumatoid arthritis, diabetes, heart diseases, muscular dystrophy, neurological diseases, and cancer. Although NF-κB has been linked with numerous other diseases as well, due to limitation of space it was not possible to cover those diseases. It is our sincere hope that readers will find these articles highly informative, useful, provocative, innovative, thought provoking, and valuable.

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REFERENCES

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