Nilay Solanki

Charotar University of Science and Technology
India

Combating Doxorubicin-induced kidney injury through adenosine receptor modulation: An in-vivo study

Abstract:

Doxorubicin (DXR) is a powerful chemotherapeutic drug commonly used to treat cancers such as breast cancer, bladder cancer, Kaposi's sarcoma, and lymphoma. However, its clinical use is often limited by severe side effects, including cardiomyopathy, bone marrow suppression, and nephritis. While the molecular mechanisms of DXR are complex, the specific cause of DXR-induced nephropathy remains unclear. This study focused on exploring the involvement of Vascular Endothelial Growth Factor (VEGF) and Nitric Oxide (NO) in DXR-induced nephropathy. It proposed that Adenosine-2 receptors (A2AR) might play a role in modulating VEGF and NO levels, potentially reducing renal damage. To investigate this, the study examined the effects of A2 receptor modulators on mice with DXR-induced nephropathy, evaluating VEGF and NO levels alongside renal function markers. The results showed significant improvements in kidney function, albumin clearance, BUN levels, and NO/VEGF levels in treated groups compared to those with untreated DXR-induced nephropathy. These findings suggest potential therapeutic strategies for mitigating DXR-induced nephropathy and provide new insights into the regulatory role of the NO-VEGF axis in renal function. Furthermore, this research may have broader implications for managing diabetes and related complications, where similar pathways could be targeted for therapeutic benefit.

Biography

Nilay Solanki is an Associate Professor at Ramanbhai Patel College of Pharmacy, CHARUSAT Campus, India. He had completed his Ph.D. in 2016 from CHARUSAT University. Dr. Nilay has over 16 years of academic, research, administrative and leadership experience in the field of Pharmaceutical sciences & Pharmacology. His expertise is in the area of clinical research and preclinical animal model development of various disease conditions, with a special emphasis on diabetes, cancer, NAFLD, obesity, neurodegeneration, etc. He also works in the clinical research area such as pharmacoepidemiology, pharmacogenomics, and health-related quality of life assessment for various disease conditions. Dr. Nilay has several collaborations with multispecialty hospitals in Gujarat, where major clinical studies were conducted. Dr. Nilay has published over 50 research, review papers & book chapters in Scopus and Web of Science-listed high-impact factor journals with Q1, Q2, Q3 quartiles. He has also completed multiple consultancy projects. He had received various awards at national conferences and CHARUSAT research paper awards for five consecutive years. He had also provided his services as a resource person at national and international conferences in India. He is also associated as a reviewer and editor in national and international journals.