Antiurolithiatic effects of pentacyclic triterpenes: The distance traveled from therapeutic aspects

Devina Lobine, **Salman Ahmed**, Michael Aschner, Haroon Khan, Hamed Mirzaei Mohamad F. Mahomoodally.

Drug Development Research, 81:671–684, 2020

Abstract

Globally, approximately 12% of the population is inflicted by various types of urolithiasis. Standard treatments are available both to avert and treat urolithiasis, but with significant adverse side effects. Pentacyclic triterpenes represent a group of naturally occurring compounds which holds immense potential as therapeutic for treating kidney stone. This review aims to provide an integrative description on how pentacyclic triterpenes can effectively treat calcium oxalate urolithiasis through various mechanisms such as antioxidant, anti-inflammatory, diuretic, and angiotensin-converting enzyme inhibition. Some of the pentacylic triterpenes which shows promising activities include lupeol, oleanolic acid, betulin, and taraxasterol. Moreover, future perspectives in the development of pentacyclic triterpenes in formulations/drugs for urinary stone prevention are highlighted. It is anticipated that compiled information would serve as a scientific baseline to advocate further investigations on the potential of pentacyclic triterpenes in urolithiasis remediation.