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Review article

Cardiotonic effects of cardiac glycosides from plants of Apocynaceae family

Abstract:

Cardiac glycosides (CGs), such as digoxin, were one of the earliest pharmacological treatments used clinically in the management of heart failure. Plants from the Apocynaceae family which grow indigenously in Asia especially in the tropical and subtropical regions and one of the largest plant families, are producers of CGs. The purpose of this review is to update the research progress of CGs with cardiotonic effects obtained from Apocynaceae family on heart failure. Heart failure increases morbidity and mortality globally. It is manifested by compromised contractility of the heart to pump adequate blood and oxygen to all other parts of the body. CGs bind to Na^+/K^+ -ATPase and inhibit the sodium pump, which is believed the major mechanism of action that contributes to its cardiotonic properties. The mechanisms of action of various CGs, particularly the cardenolides present in Apocynaceae plants are discussed in this article. Besides digoxin, other CGs have the potential to be developed as an alternative or adjunct therapy for the management of heart failure.