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Clinical Pharmacokinetic and Pharmacodynamic Profile of Heart Failure Medications and Prevention of Heart Failure in Health Care

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Pharmacokinetics describes absorption, distribution, metabolism, and excretion of a drug compounds. Pharmacodynamics is the study of biochemical and physiological effects of the drug. The altered physiological conditions of the body, drugs, genetics, and aging can change the receptor binding and lower the receptor sensitivity induces the pharmacodynamics of drug. The risk factors for heart failure include altered lifestyle factors, many disease comorbid conditions, altered laboratory parameters, hypertension, diabetes mellitus, obesity; aging, male gender is associated with higher risk. Continuous adherence to the lifestyle modification practices such as regular physical exercise, adequate rest, maintaining normal BMI, smoking and alcohol cessation and consumption of healthy diet could lower the risk of heart failure in the clinical settings. Heart failure is a clinical condition heart can't supply adequate blood required to maintain the homeostasis. The altered homeostasis condition causes occurrence of several cardiovascular disease complications such as myocardial infarction, valve defects, and hypertension. Heart failure is a chronic complex disease and now acceleration of incidence has been associated with multiple risk factors and causes mortality and morbidity in the developed and developing countries. Heart failure is associated with assorted immunological, inflammatory, metabolic factors are greatly influences pathogenesis of heart failure. The modified physiological factors impact the pharmacokinetics and pharmacodynamics of drug metabolites could see in the heart failure patients. Designing of individualized therapeutic regimen could control the risk factors which could minimize the quickening of further heart disease complications to the individual patients.

Keywords: Pharmacokinetics, Pharmacodynamics, therapeutic regimen, heart failure, hypertension, and diabetes mellitus.

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