COMMENTARY

Pharmaceutical Approaches for Treating Cardiovascular Disease

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Description

Cardiovascular pharmacology is concerned with how medications affect the heart and vascular system as well as the basic workings of cardiovascular cells. Researchers in the department use cutting-edge technology to study the causes of sudden cardiac death, congenital arrhythmias, and the cardiac toxicity of chemotherapy medications. These include induced pluripotent stem cells, automated electrophysiology, and genomics.

Cardiovascular disease, which includes heart disease, arrhythmias, and hypertension, is the main cause of morbidity and mortality. There is a strong need for cardiovascular medications due to the wide variety of deadly illnesses that affect the heart and vascular system. This focuses on some important cardiovascular therapeutic targets and the medications that are used to treat cardiovascular illness. The interactions between concurrently taken medications may affect their efficacy and toxicity or result in unfavourable side effects, it is crucial to be aware of these interactions. Such interactions may, for instance, impair a drug's bioavailability, effectiveness, or production of undesirable metabolites. An interaction between two medications is said to as having an antagonistic effect if it reduces the impact of either one or both of them. Since cardiovascular patients typically take multiple medications, the high interaction of drugs that affect the circulatory system is a problem.

Anti-anginals, anti-arrhythmics, anti-hypertensives, anti-coagulants and anti-hyperlipidemic agents, can all be generically classed as cardiovascular pharmaceuticals.

Anti-anginals is a medication that lessens oxygen consumption in the myocardium by the heart's muscle tissue or boosts oxygen delivery to the myocardium might be considered an antianginal. When treating angina, nitrates or beta blockers are typically preferred, with calcium channel blockers added if necessary.

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Anti-arrhythmic are drugs that control and cure irregular or fast heartbeats, sometimes referred to as arrhythmias. An issue with your heart's electrical system causes an arrhythmia. The heart may beat abnormally, too rapidly, or slowly. The irregular cardiac rhythms atrial fibrillation, atrial flutter, ventricular tachycardia, and ventricular fibrillation are all treated by antiarrhythmics.

Anti-hypertensives are a kind of medication used to lower blood pressure. Antihypertensive medications come in a wide variety of forms, and they all reduce blood pressure in unique ways. Some people remove surplus salt and fluid from their bodies. Other people may lower their heartbeat or relax and broaden their blood vessels. These medications work similarly to ACE inhibitors because they stop angiotensin from binding to its receptor.

Anti-coagulants also referred to as blood thinners, which are chemicals that stop or slow down blood coagulation, lengthening the clotting time. Some of them are found naturally in blood-feeding creatures like leeches and mosquitoes, where they aid in maintaining the bite area's bloodless condition long enough for the creature to take some.

Anti-hyperlipidemic agents are used a blood lipid levels are reduced by antihyperlipidemic drugs. Low Density Lipoprotein (LDL) cholesterol and triglyceride levels are the goals of some antihyperlipidemic medications, while High-Density Lipoprotein (HDL) cholesterol is the goal of others.

Various cardiovascular abnormalities have been covered in this section due to the widespread usage of cardiovascular medicines in therapeutics. Arrhythmias and hypotension are two serious side effects. Predicting the cardiovascular toxicity of medications during all stages of their development is important since cardiovascular adverse effects are a typical reason that drugs are withdrawn from sale.

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