



MEDICATION:

YOUR HEART'S WORST ENEMY?

ANDRÉ MARAIS

Current life expectancy, as determined by the World Health Organization in 2015, estimates males to live for about 71 years and females for approximately 73 years. On average, South Africa has lower life expectancy, with males at 60 years and females at 63. These figures, however, are dependent on several factors, including war, violent crimes, accidents, the presence of chronic diseases, nutritional status and the use of certain medications.

Cardiovascular disease remains the number one cause of death globally. This means that more people die annually from heart disease than from any other cause. It is therefore not uncommon to see a variety of drugs or medications being prescribed daily to millions of people who suffer from heart conditions, or people who are at high risk of developing heart conditions, such as hypertension, diabetes, obesity and hyperlipidaemia. Although these drugs are designed to protect the heart, several others may harm the heart as part of their side-effect profile. Such drugs are 'cardiotoxic'. Cardiotoxic drugs may affect people of any age, but the incidence in the elderly population is seemingly higher because of ageing liver and kidneys' lowered ability to metabolise and excrete these substances.

The list of cardiotoxic drugs is ever increasing, and contains substances such as alcohol, cocaine and nicotine,

which need no discussion. Cardiotoxic drugs affect the heart in various complex mechanisms, some of which include ventricular dysfunction (abnormal pumping function of the ventricles), ventricular hypertrophy (enlargement of the heart), arrhythmias (conduction and rhythm disturbances), heart valve disease, cardiac arrest and heart failure.

The following prescription medications should be considered carefully. It is advisable to inform and remind your prescribing doctor or pharmacist if you suffer from heart conditions of which he or she might not be aware.

CHEMOTHERAPY AND CANCER TREATMENT

Chemotherapeutic agents that are used in the treatment of haematological and solid malignancies are the most commonly recognised cardiotoxic drugs. Several agents are available, each with its own effect and side-effect profile. Long-term toxicity manifests as ventricular dysfunction and heart failure.

ORAL ANTIDIABETIC DRUGS

Pioglitazone (Actos) improve glycaemic control in diabetic patients, but may cause fluid retention and oedema. This build-up of fluid increases pressure in the cardiovascular system, which will lead to hypertension and left ventricular

hypertrophy, ultimately progressing to heart failure. Patients on pioglitazone should be monitored carefully, and diuretics should be prescribed if symptoms of congestion are apparent.

ANTIBIOTICS, ANTIDEPRESSANTS AND ANTIARRHYTHMIC DRUGS

Certain groups of antibiotics, such as macrolides (erythromycin, clarithromycin and azithromycin) and quinolones (ciprofloxacin, levofloxacin and moxifloxacin), which are commonly prescribed for respiratory and urinary tract infections, may cause serious heart rhythm disorders and irregular heartbeat. When the heartbeat is irregular, the chambers of the heart do not fill up adequately to pump blood to the rest of the body. The same effect is noticed with a few of the older antidepressants, such as amitriptyline (Tryptanol) and fluoxetine (Prozac). Metoclopramide (Maxolon), which is often prescribed for nausea, and fluconazole (Diflucan), which is prescribed for severe fungal infections, have also been linked to disruption of the normal heart rhythm. Ironically, antiarrhythmic agents, which are used to manage cardiac conduction disorders, may cause or worsen rhythm disorders in certain individuals. Theoretically, all the antiarrhythmic drugs may be implicated; however, studies show the greatest risk with flecainide (Tambocor) and propafenone (Rhythmol). Risks of treatment with these medications should be weighed against the benefits.

APPETITE SUPPRESSANTS AND DRUGS USED TO TREAT MIGRAINE

Appetite suppressants, such as phentermine (Duromine), norpseudoephedrine (Relislim) and diethylpropion (Tenuate Dospan), have been linked to the development of heart valve disease. Appetite suppressants also increase the heart rate, and could therefore cause rhythm disturbances. Ergot alkaloids are commonly used to treat migraine headaches, and some of these preparations can be obtained easily without a prescription (such as Migril), despite their known association with valvular structural abnormalities. These drugs may cause a regurgitation (or backflow) of blood through the affected heart valves, which may lead to heart failure and death. People who suffer from migraine headaches in the presence of cardiovascular disease should not self-medicate, but should consult their doctor for appropriate and safe treatment.

NON-STEROIDAL ANTI-INFLAMMATORY DRUGS

Anti-inflammatory drugs may cause serious gastrointestinal problems, such as peptic ulcers and bleeding (Grandpa, Brufen, Voltaren, etc). An attempt to reduce these complications led to the development of so-called selective Cox-2 inhibitors. These agents lack the gastrointestinal side effects, but unfortunately have a high association of myocardial infarction (heart attacks), heart failure and kidney failure. The degree of increased cardiovascular risk depends on the individual agent, and has led to the worldwide discontinuation of some of these drugs. The remaining Cox-2 inhibitors that are available for prescription include etoricoxib (Arcoxia), celecoxib (Celebrex) and parecoxib (Rayzon). In addition, these drugs may induce or worsen hypertension. For this reason, anti-inflammatories should be used with caution in all patients with pre-existing cardiovascular disease.

(Dr André Marais is a clinical pharmacologist in the Department of Pharmacology, University of Pretoria)

