

## **Cardiovascular Protection and the Heart-Disease Continuum**

### **Fact Sheet**

#### **Hypertension**

- Hypertension is a risk factor for a wide range of cardiovascular conditions. Hypertension is believed to be caused, in part, by the formation of a substance called angiotensin II, which is the body's most potent constrictor of blood vessels and mediates the retention of sodium and water.
- One of the initial treatments for lowering blood pressure, the angiotensin II antagonists (AIIA) such as COZAAR® work by blocking the effect of angiotensin II, thus preventing vasoconstriction and other hypertensive effects. AIIAs are as effective as all other anti-hypertensives but with excellent tolerability.
- Hypertension affects approximately 2.7 million Canadians, 25 years and over.<sup>1</sup>

#### **Left ventricular hypertrophy**

- Hypertension makes the heart work harder, and like other muscles, the heart increases in size (a phenomenon known as hypertrophy) to keep up with the added demands of the body. The left ventricle – the heart's main pumping chamber – becomes enlarged, and therefore weakened as a result of long-standing hypertension. Studies have shown that left ventricular hypertrophy (LVH) increases the risk of coronary heart disease, and can lead to heart failure.

#### **Left ventricular dysfunction**

- If left ventricular hypertrophy advances to a point that the heart cannot pump an adequate flow of blood, left ventricular dysfunction (LVD) can occur. Left ventricular dysfunction also can be caused by damage to the muscle from a heart attack. Progression of ventricular dysfunction can result in heart failure.
- In elderly patients with symptomatic heart failure due to left ventricular dysfunction, no significant difference in all-cause mortality was observed between COZAAR and captopril, but COZAAR was significantly better tolerated.<sup>2</sup>
- In addition, findings from the ValHeFT (Valsartan Heart Failure Trial) study, which evaluated the use of the AIIA valsartan given twice daily, showed that a combination of angiotensin II antagonists and ACE inhibitors provides additional morbidity benefits, including reducing hospitalization due to heart failure.

### **Myocardial infarction**

- Myocardial infarction (MI), or heart attack, results when a blood clot forms in an artery that delivers blood and oxygen to a portion of the heart muscle. This type of blockage almost always occurs in a coronary artery that already has been narrowed by atherosclerosis.
- There are an estimated 75,000 heart attacks in Canada each year. In 1997, 22,000 Canadians died from heart attacks.<sup>3</sup>

### **Stroke**

- Stroke is the sudden death of some brain cells due to a lack of oxygen when the blood flow to the brain is impaired by blockage or rupture of an artery to the brain. Stroke can be caused when a blood clot or a piece of an atherosclerotic plaque breaks loose and lodges in an artery of the brain, stopping the flow of blood. In addition, a blood clot can form in a chamber of the heart when the heart beats irregularly, as in atrial fibrillation; such clots may break off and form a plug (embolism) in a brain artery to cause a stroke. A cerebral hemorrhage (bleeding in the brain), as from an aneurysm (a widening and weakening) of a blood vessel in the brain, also causes stroke.<sup>4</sup>
- The main risk factors for stroke are high blood pressure, heart disease and diabetes.
- Stroke is the fourth leading cause of death in Canada.<sup>5</sup>
- The incidence of stroke in Canada is 40 to 50,000 and more than 16,000 people die of stroke each year.<sup>6</sup>
- Strokes cost the Canadian economy \$2.8 billion a year.<sup>7</sup> Hospitalizations for stroke have been increasing for the past twenty years and are projected to increase over the next twenty years.<sup>8</sup>

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<sup>1</sup> Statistics Canada Web site

<sup>2</sup> Elite II, Pitt et al.

<sup>3</sup> Heart and Stroke Foundation of Canada Web site

<sup>4</sup> [www.focusonbloodpressure.com](http://www.focusonbloodpressure.com); MedicineNet.com

<sup>5</sup> Heart and Stroke Foundation of Canada Web site

<sup>6</sup> Heart and Stroke Foundation of Canada Web site

<sup>7</sup> The Changing Face of Heart Disease and Stroke in Canada 2000, p. 61

<sup>8</sup> The Changing Face of Heart Disease and Stroke in Canada 2000, p. 51