

ATRIAL FIBRILLATION AND STROKES

“Stroke” or “brain attack” as it is more recently termed, is a sudden loss of brain function caused by an interruption of blood flow to the brain, or the rupture of blood vessels in the brain. This definition is the one used by the Stroke Recovery Network, which published an excellent discussion paper on “The Atrial Fibrillation Threat in Canada”. This well-researched booklet, containing results and opinions from some of the most experienced specialists in the field of stroke prevention and care, contains some startling statistics.

The heart has two upper chambers, called atria, or auricles, which receive the blood from the body, and pass it through valves to the ventricles, the two larger, lower chambers, which do the pumping. The rate and rhythm of the heartbeat are determined largely in the atria; normally, this rate is 60 to 80 regular beats per minute. If illnesses or aging cause the atria to beat irregularly, the blood flow ceases to be smooth, and the little eddies of blood swirl inside the atria, allowing the blood to linger in the curves, and form clots. We tend to think that blood clots only outside the body in the air, but if it is not flowing quickly and smoothly, it will clot inside the blood vessels. When the combination of activities between the upper and lower heart chambers is not a regular and smooth one, these little clots can move from the atria, down to the pumping ventricles and go out to the body. When the clots travel along far enough, they reach a blood vessel too small to keep pushing them on, and there they stop. This cuts off the flow of blood to the part of the body usually supplied with oxygen and glucose by this artery.

About 80% of strokes are caused by lack of oxygen, to a brain area from a clot blocking a brain artery; with little oxygen, this brain part soon dies. (The brain consumes 20% of the body’s oxygen, even though the brain weighs only 2% of the body’s weight. The other 20% of strokes are due to the bursting of a brain artery, with subsequent loss of needed oxygen to that brain part.

Atrial Fibrillation (A.F.) is a disturbance of the heart's rhythm in which a "storm of its own electrical energy" in the heart causes the atria to quiver rapidly and irregularly instead of beating regularly. The person is usually not aware of the atrial disturbance but becomes aware of "butterflies in the chest" when many of the upper chambers' beats are carried in to the lower chambers which do the pumping. Now, some people feel dizzy or weak or short of breath. In addition to the palpitations, some people feel some chest pressure or pain with the abnormal heart action. We do not know all the causes of atrial fibrillation but aging itself brings more likelihood of it. More than 200,000 Canadians have A.F. Until a few years ago, doctors thought it was just a nuisance. Now we know that it is a danger. Research has shown A.F. causes as much as 25% of the strokes due to blood clots in the brain arteries; this amounts to 6,000 to 7,500 strokes a year in Canada; of these A.F.-caused strokes, probably 5,000 could be prevented by adequate treatment of the A.F.

Because many causes of A.F. occur periodically rather than continuously, patients must tell their doctors about their episodes, and then agree to further testing to get accurate diagnosis and treatment. Where possible, the A.F. should be treated with drugs to change the rhythm to a regular one if that is possible (or occasionally even with a pace-maker), or with drugs to thin the blood so that it is less likely to clot. These are long-term interventions, but could prevent untold misery for the victims and their care-givers, and save vast sums of tax-payer dollars. Estimated cost of strokes to Canada's health system in a recent year was 2.8 billion dollars, half of that for direct hospital-associated care, half of it for later care. It has been shown that anti-coagulation (clot-prevention) treatment is effective in reducing the risk of A.F. -related strokes by two thirds.

Under-treatment of A.F. is a huge aspect of the problem. Canadian research has shown that about two thirds of people with A.F. are not receiving treatment at all, or are not receiving the treatment recommended for stroke prevention.

My father died of his fourth stroke in 1969. His third stroke had left him in a wheelchair, dependent on others for help with basic needs. He did not smoke, consume alcohol, or have high blood pressure; he was not obese or diabetic. He had three risk factors: he was in his seventies, his parents and brother had died of strokes, he had atrial fibrillation (which I had detected about 1962, but which no one at that time was investigating or treating, even though we had anti-coagulants in use for other conditions for some years). He was just born twenty years too soon! This is the year 2010, we can do better now.

Dr. Ruth Tatham is a retired physician and medical consultant to the Stroke Recovery Canada, Guelph Wellington Chapter.