THE AFIB REPORT

Your Premier Information Resource for Lone Atrial Fibrillation!

NUMBER 72 **SEPTEMBER 2007** **7th YEAR**

I hope you enjoyed a wonderful summer with lots of NSR. Even if you are not a fan of ice-cold showers you may wish to try them just the same. In this issue, Ian McLaren from Tasmania, Australia reports that he has been able to control his afib through hydrotherapy involving alternating hot and cold showers. Ian used to be on warfarin, digoxin, verapamil, and amiodarone and yet was still in permanent afib. After a month on the hydrotherapy program he was able to dispense with most of his medications and he is now completely off them. Thank you Ian for sharing your story.

Also in this issue we report on new exercise guidelines which will enable you to see just how much exercise you are actually getting, that beta-blockers are given thumbs down for the treatment of uncomplicated hypertension, that removal or closure of the left atrial appendage may not be such a good idea after all, and some good news – there is evidence that age is not related to stroke risk in afib and a suggestion that lone afibbers over the age of 75 years do not need to be on warfarin.

All this, and more, in our 72nd issue …. Enjoy!!

If you need to restock your supplements, please remember that by ordering through my on-line vitamin store you will be helping to defray the cost of maintaining the web site and bulletin board. You can find the store at http://www.afibbers.org/vitamins.htm - your continuing support is very much appreciated.

Wishing you good health and lots of NSR,

Hans

Highlights

Atrial flutter ablation often leads to AF

CLEVELAND, OHIO. Typical right atrial flutter and atrial fibrillation (AF) often coexist and likely share common triggers. There is also evidence that they share predisposing conditions such as hypertension, heart disease, hyperthyroidism, sinus node dysfunction, and pulmonary disorders. Atrial flutter is not very responsive to treatment with antiarrhythmics, so the normal way of dealing with it is via a cavotricuspid isthmus ablation. In this radiofrequency ablation procedure a linear lesion is created in the right atrium from the tricuspid annulus to the inferior vena cava thereby interrupting the typical counter-clockwise flutter circuit. Unfortunately, there is growing evidence that a successful flutter ablation may, in a substantial number of cases, lead to the later occurrence of AF.

Electrophysiologists at the Cleveland Clinic now report that the development of afib after a flutter ablation is the rule rather than the exception. Their study involved 363 patients with atrial flutter who had been unsuccessfully treated with at least two antiarrhythmic drugs. None of the patients had been diagnosed with atrial fibrillation as well. Thirty-

four percent of these patients had evidence of underlying structural heart disease. The average left ventricular ejection fraction in the group was 47% and the average left atrial diameter was 42 mm.

The study participants underwent cavotricuspid isthmus ablation and were then followed up for an average of 39 months. At the end of the follow-up period, only 13% were in sinus rhythm. A total of 68% had developed drug-refractory AF, 14% had developed a combination of AF and atrial flutter, and the remaining 5% had experienced a recurrence of their flutter. A large left atrium was associated with an increased risk of developing afib following the flutter ablation.

The Cleveland Clinic researchers conclude that 82% of all patients undergoing the standard cavotricuspid isthmus ablation for right atrial flutter later develop atrial fibrillation.

Ellis, K, et al. Incidence of atrial fibrillation post-cavotricuspid isthmus ablation in patients with typical atrial flutter. **Journal of Cardiovascular Electrophysiology**, *Vol. 18, August 2007, pp. 799-802*

Editor's comment: This is indeed discouraging news for patients with right atrial flutter – clearly most of them can expect to develop afib even after a successful flutter ablation! The Cleveland Clinic findings also, to some extent, support the findings from our 2006 ablation/maze survey that undergoing a right atrial flutter ablation as a first attempt in curing coexisting flutter and afib is almost certainly doomed to fail.

New exercise guidelines

DALLAS, TEXAS. An expert panel of physicians, epidemiologists, exercise scientists, and public health specialists has released updated recommendations for the level of physical activity required to achieve and maintain optimum health. These recommendations are endorsed by the American College of Sports Medicine and the American Heart Association, and apply to all healthy adults between the ages of 18 and 65 years. There is compelling evidence that lack of regular physical activity substantially increases the risk of cardiovascular disease, hypertension, ischemic stroke, diabetes, osteoporosis, obesity, colon cancer, depression, and anxiety. Despite this, a 2005 survey concluded that less than half of the US adult population meets the recommended physical activity levels.

The expert panel recommends that all healthy adults aged 18 to 65 years engage in at least 30 minutes of moderate-intensity aerobic physical activity on 5 days each week, or vigorous-intensity aerobic activity for a minimum of 20 minutes on 3 days of the week. Combinations of moderate and vigorous exercise are also acceptable and the 30 minutes of moderate physical activity can be met, for example, by 3 individual bouts of 10 minutes each. The panel emphasizes that physical exercise over and above the recommend minimum can be expected to lead to reduced premature mortality and further health improvements, particularly in regard to cardiovascular health. The panel also recommends activities that maintain and increase muscular strength for a minimum of 2 days each week. Such activities would include stair climbing, weight training, and weight-bearing calisthenics.

The intensity of physical exercise is usually expressed in terms of energy expenditure which, in turn, is expressed in **metabolic equivalents** (MET). One MET represents an individual's energy expenditure while sitting quietly for 1 minute (equivalent to about 1.2 calories/minute for a person weighing 160 lbs). Moderate activity is associated with a MET equivalent of 3-6 METs per minute, while vigorous exercise is associated with METs greater than 6. METs for some common activities are given below:

- Walking at 3 mph (5.0 km/h) 3.3 MET
- Walking at very brisk pace of 4 mph (6.4 km/h) 5.0 MET
- Bicycling on flat surface at 10-12 mph (16-19 km/h) 6.0 MET
- Bicycling fast at 14-16 mph (22-26 km/h) 10.0 MET
- Golfing (walking and pulling clubs) 4.3 MET
- Swimming (leisurely) 6.0 MET
- Swimming (moderate to hard) 8.0-11.0 MET

- Hiking at moderate pace with light or no pack 7.0 MET
- Hiking at steep grades and heavy pack 7.5-9.0 MET
- Jogging at 5 mph (8 km/h) 8.0 MET
- Cross-country skiing (slow) 7.0 MET
- Cross-country skiing (fast) 9.0 MET
- Competitive soccer 10.0 MET

Thus, 30 minutes of walking at 3.0 mph would accumulate 99 METs (3.3x30) and jogging for 20 minutes at 5 mph would accumulate 160 METs (8x20). The panel suggests a minimum weekly MET accumulation of 450 to 750 METs be achieved through specific physical exercise.

The panel makes the interesting observation that exercise is relatively ineffective in achieving weight loss, but that a very much increased level of activity is required to maintain a weight loss achieved by other means. They also acknowledge that the risk of musculoskeletal injury increases substantially with increased physical activity and can affect as many as 55% of people involved in jogging programs and US Army basic training. The risk of cardiac arrest and heart attack also increases during vigorous physical exercise, especially among infrequent exercisers. Nevertheless, the panel concludes that, in the case of healthy individuals, the benefits of regular moderate to vigorous physical activity far outweighs the risks. They also suggest that healthy men and women do not need to consult with a physician or other healthcare provider prior to embarking on a regular exercise program. However, those with cardiovascular disease, diabetes, or other chronic diseases should clearly do so.

I an accompanying article Miriam Nelson of Tufts University and other members of a separate panel outline physical activity recommendations for those above the age of 65 years and adults aged 50-64 years with clinically significant chronic disease conditions or functional limitations. The recommendations are identical to those discussed above, except that the definition of *moderate* and *vigorous* exercise is tailored to the individual's basic fitness level rather than given as specific MET targets. The guidelines also include specific recommendations for flexibility and balance exercises which are especially important for older individuals. The researchers provide the following sobering statistics in regards to chronic disease prevalence among Americans over the age of 65 years:

- Arthritis 49%
- Hypertension 40%
- Heart disease 31%
- Osteoporosis (women) 26%
- Diabetes 13%

Haskell, WL, et al. Physical activity and public health. Updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. **Circulation,** *Vol. 116, August 28, 2007*
Nelson, ME, et al. Physical activity and public health in older adults. Updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. **Circulation**, *Vol. 116, August 28, 2007*

LAA removal and stroke risk

CLEVELAND, OHIO. In afib patients with underlying heart disease stagnation of blood flow in the left atrium, more specifically in the left atrial appendage (LAA) – a small pouch connected to the left atrium – is an important source of blood clots and subsequent stroke. There is no evidence that afibbers with a structurally sound heart and normal left ventricular ejection fraction are abnormally prone to clot formation in the LAA. Because the LAA is believed (wrongly in my opinion) to be a useless appendage, it is often removed or occluded (stapled shut) during cardiac surgery such as mitral valve repair or replacement, and in the maze and mini-maze procedures. It has even been suggested that LAA removal or occlusion would be a viable stroke prevention measure for afibbers that cannot tolerate warfarin.

Researchers at the Cleveland Clinic now cast considerable doubt on the value of LAA removal in stroke prevention. Their study involved 136 patients (61% with AF) who underwent mitral valve repair or replacement during which their LAA was removed. Sixty-two percent of the patients were discharged on warfarin, while the remaining did not receive anticoagulation therapy. During the mean follow-up period of 3.6 years, 12.3% of the patients experienced a stroke, transient ischemic event (TIA) or peripheral embolism. The incidence of thromboembolic events (stroke, TIA, etc) was 10% in the warfarin-treated group and 15% in the non-treated group. NOTE: This difference is not statistically significant with most events (71%) occurring in those who had undergone mitral valve repair.

The Cleveland Clinic researchers conclude that LAA removal in patients undergoing mitral valve repair does not provide adequate protection against later thromboembolic events. They point out that blood clots formed in the LAA are not the only source of stroke in AF patients. Other sources like left atrial thrombi and debris originating in the aorta or carotid arteries may be equally important sources. They also suggest that isolating (occluding) the LAA during cardiac surgery may not be an effective stroke prevention measure as several studies have shown that the closure is often incomplete, thus actually increasing the risk of clot formation caused by blood stagnation.

Almahameed, ST, et al. Left atrial appendage exclusion and the risk of thromboembolic events following mitral valve surgery. **Journal of Cardiovascular Electrophysiology**, *Vol. 18, April 2007, pp. 364-66*

Editor's comment: The conclusion of the Cleveland Clinic study is clearly that LAA removal or occlusion is not an effective stroke prevention measure in afibbers.

The LAA is a known incubator of thrombi in afibbers with underlying heart disease, but there is no evidence that this is also the case for lone afibbers. Nevertheless, the LAA is now routinely removed during maze and min-maze procedures irrespective of whether the patient has underlying heart disease or not.

Is this a good idea? Some researchers think not. A comprehensive study by British researchers concluded, "The removal of the LAA may result in unfavourable hemodynamic and hormonal effects"[1], while a study by German researchers conclude, "Elimination of the LAA may impede thirst in the case of hypovolemia, may impair the hemodynamic response to volume or pressure overload, may decrease cardiac output, and may promote heart failure."[2]

It is clear that further studies are urgently required to clearly establish the benefits and disadvantages of LAA removal and equally clear that such studies, to be of value, must distinguish between afibbers with heart disease and those without.

[1] Al-Saady, NM, et al. Left atrial appendage: structure, function, and role in thromboembolism. Heart, Vol. 82, 1999, pp. 547-55

[2] Stollberger, C, et al. Elimination of the left atrial appendage to prevent stroke or embolism? Chest, Vol. 124, December 2003, pp. 2356-62

Beta-blockers given thumbs down

NEW YORK, NY. The beta-blocker atenolol (Tenormin) is the fourth most-prescribed drug in the US with 44 million prescriptions issued every year. A very large proportion of these prescriptions are for the 50 million Americans who suffer from uncomplicated hypertension. This despite the fact that no clinical trial has ever shown that using beta-blockers for the treatment of hypertension reduces overall mortality, or the risk of a first heart attack. Furthermore, clinical trials have shown that treatment of uncomplicated hypertension with beta-blockers is accompanied by a 16-30% increased risk of stroke when compared to treatment with calcium channel blockers, renin angiotensin aldosterone system blockers, or thiazide diuretics. Beta-blockers have been shown to increase insulin resistance and predispose patients to type 2 diabetes. Among other common adverse effects – drowsiness, lethargy, sleep disturbance, visual hallucinations, depression, nightmares, blurred vision, Raynaud's phenomenon, and erectile dysfunction (impotence). There is also evidence that beta-blockers may reduce exercise capacity in otherwise healthy people by up to 40%.

Beta-blockers have, however, been found effective in the treatment of heart failure and are also likely to be beneficial in patients who have suffered a heart attack. As they downregulate the adrenergic (sympathetic) nervous system, they can also be useful in ameliorating stressful situations such as public speaking and in helping to manage

adrenergically-mediated atrial fibrillation. Beta-blockers have been recommended as first-line treatment for uncomplicated hypertension for more than three decades and most physicians, unfortunately, still believe that they are highly effective for this purpose. This state of affairs will hopefully change soon.

In April 2007 the American Heart Association and the European Society of Cardiology decided to cancel their endorsement of beta-blockers as first-line treatment for uncomplicated hypertension. The authors of the report had this to say about why the beta-blocker "myth" has been allowed to exist for so long, *These perceptions or misperceptions (among physicians) are unfortunate and obviously must be considered as long-lasting repercussions of deceptive marketing by the pharmaceutical industry that beta-blocker were "cardioprotective*".

Bangalore, S, et al. Cardiovascular protection using beta-blockers: A critical review of the evidence. **Journal of the American College of Cardiology**, *Vol. 50, No. 7, 2007, pp. 563-72*

Editor's comment: Although beta-blockers may be helpful in the management of adrenergically-mediated afib, they should not be used on a continuous basis by afibbers with vagally-mediated afib.

Obesity and ablation risks

LEUVEN, BELGIUM. There is increasing evidence that obesity (body mass index greater than 30 km/m^2) is a risk factor for AF and also increases the risk of recurrence after an ablation. Now Belgian researchers report that obese people also are exposed to a significantly greater level of radiation during a pulmonary vein isolation procedure. This is because fluoroscopy (x-ray imaging) systems use an automatic exposure control, which adjusts the tube voltage and current to provide a clear image irrespective of the depth of flesh that the x-rays have to penetrate.

The Belgian researchers measured radiation exposure in a group of 85 lone afibbers who underwent a segmental PVI (including right atrial flutter ablation). The average procedure time was 4 hours and the average fluoroscopy time (time exposed to x-rays) at 3 frames/second was 83 minutes. The researchers estimate that normal weight patients (BMI less than 25) received an average effective radiation dose of 15 milliSievert (mSv), overweight patients (BMI between 25 and 30) received a dose of 27 mSv, and obese patients a dose of 39 mSv or more than twice as much as the dose received by a normal weight person. These dosages would correspond to an increase in overall lifetime cancer mortality of 0.06%, 0.1%, and 0.15% respectively. [NOTE: The Canadian Centre for Occupational Health and Safety has set an annual maximum exposure level of 1.0 mSv for the general public and a regular CT scan involves an exposure of about 1.1 mSv.]

The researchers point out that repeat ablations will increase the total radiation dose as will the use of multislice CT scans now increasingly used in combination with CARTO mapping (non-fluoroscopic). The multislice CT scan can add as much as 5 to 20 mSv exposure, again, depending on the patient's BMI. The researchers conclude that the benefits and risks of ablation of obese individuals (higher radiation exposure and recurrence rates) should be carefully weighed before proceeding with the procedure. They also suggest that a circumferential PVI using non-fluoroscopic (CARTO) mapping may be a better choice for obese people.

Ector, J, et al. Obesity is a major determinant of radiation dose in patients undergoing pulmonary vein isolation for atrial fibrillation. **Journal of the American College of Cardiology**, *Vol. 50, No. 3, 2007, pp. 234-42*

Editor's comment: The patient exposure determined by the Belgian researchers would appear to be quite high. Reports from Hopital Cardiologique de Haut Leveque in Bordeaux (Haissaguerre/Jais group) estimate their average patient exposure to be about 1.1 mSv during a standard segmental PVI. Dr. Perisinakis and colleagues at the University of Crete reported an average exposure of 8.3 mSv per hour of fluoroscopy. Thus, it would seem that radiation exposure varies from center to center with the likelihood of lower exposures in procedures performed by more experienced electrophysiologists.

AF-related stroke risk independent of age

JERUSALEM, ISRAEL. The above average stroke risk observed among AF patients is believed to be primarily due to blood clot formation in the left atrium and, more specifically, the left atrial appendage (LAA). Several studies have shown that clots (thrombi) in the LAA are common in patients with AF and underlying heart disease, but none have been observed in lone afibbers. There is also evidence that the risk of ischemic stroke increases with age, but it is not clear whether this increased risk is due to LAA thrombi. Nevertheless, current guidelines call for anticoagulation of all AF patients above the age of 75 years. This despite the fact that elderly patients face a high risk of internal bleeding and hemorrhagic stroke when treated with warfarin.

Israeli researchers now question the merits of blanket anticoagulation in afib patients above the age of 75 years. Their study included 381 AF patients between the ages of 30 and 98 years. The participants were divided into two groups – one (A) of patients less than 75 years old (257 aged 75 years or less with an average age of 63 years) and another (B) of patients 75 years or older (124 with an average age of 81 years). All participants underwent transesophageal echocardiography (TEE) to check for LAA thrombi. Thrombi were detected in 8.1% of group A and 7.2% of group B. No LAA thrombi were detected in lone AF patients irrespective of age and anticoagulation status. The prevalence of LAA thrombi in patients with underlying heart disease did not differ between those on warfarin and those not on warfarin, and all thrombi were found in the LAA (none in the left atrium cavity as such).

The researchers conclude that age as such is not correlated with the prevalence of LAA thrombi, which would appear to be entirely related to underlying heart disease. They suggest that the use of anticoagulant therapy (warfarin) should perhaps be limited to those with heart disease or other risk factors for stroke.

Mazouz, B, et al. Age alone is not a risk factor for left atrial thrombus in atrial fibrillation. **Heart** *[published online June 25, 2007]*

Editor's comment: The above findings are good news indeed for lone afibbers, especially for those above the age of 75 years. There is no evidence of an increased prevalence of LAA thrombi in lone afibbers irrespective of age. Thus, the conventional recommendation of warfarin therapy after age 75 years would appear to have no basis in fact for lone afibbers.

Complication of *Watchman* implantation

VIENNA, AUSTRIA. The left atrial appendage (LAA) is believed to be the main source of blood clots (thrombi) involved in ischemic stroke among AF patients with underlying heart disease. Because of this, the LAA is often removed or sewn/stapled shut during cardiac surgery such as in the maze and mini-maze procedures. Another approach to avoiding stroke due to LAA thrombi is by blocking the opening to the left atrium itself. This is done by inserting a self-expanding, teflon-coated nitinol cage in the LAA opening so as to block it completely. The expanded cage is about 30 mm in diameter and is delivered to the LAA (in collapsed form) via a catheter threaded through a vein in a procedure similar to that used in radiofrequency ablation. Two blocking systems are currently in use – the PLAATO device and the WATCHMAN device.

Austrian cardiologists now report a case of a 78-year-old AF patient who had a *Watchman* device implanted in November 2005. About 10 minutes after implantation the device worked itself loose and became lodged in the aortic valve. Attempts to remove it destroyed the valve and a prosthetic valve had to be implanted during open heart surgery, which included sewing the LAA shut. The operation was followed by numerous complications including pleural effusions, bradycardia and complete heart block necessitating the implantation of a permanent pacemaker. The patient now has heart failure and is on warfarin, carvedilol, enalapril, furosemide and aspirin.

The authors of the report speculate that the closure of the LAA may have been responsible for some of the post-surgical complications; they point out that the LAA releases natriuretic hormones and has other important functions including the prevention of elevated intra-atrial pressure and accompanying pulmonary congestion.

Stollberger, C, et al. Serious complications from dislocation of a Watchman left atrial appendage occluder.

Journal of Cardiovascular Electrophysiology, *Vol. 18, August 2007, pp. 880-81*

Editor's comment: This report adds to the growing evidence that tampering with the left atrial appendage in order to avoid stroke may not be a good idea. There certainly would be no justification for doing so in the case of lone afib where LAA thrombi have never been observed.

Guidelines for ablation and surgical treatment of AF

DENVER, COLORADO. American and European heart rhythm societies have developed a consensus statement on ablation and surgical treatment of atrial fibrillation. The statement was presented at the Heart Rhythm Society's 2007 Scientific Sessions held in Denver, CO. Among the highlights of the statement are:

- Catheter ablation may be indicated if the patient has symptomatic afib and has failed at least one class 1 or class 3 antiarrhythmic medication. In rare cases, ablation may be the first-line treatment. Ablation should not be attempted if thrombi are present in the left atrium.

- Surgical ablation (maze) may be indicated in afibbers undergoing cardiac surgery. It may also be considered as a stand-alone procedure for symptomatic patients who prefer the surgical approach, or have failed one or more attempts of catheter ablation.

- Low-molecular-weight or intravenous heparin should be used following ablation until anticoagulation (warfarin) becomes effective (INR in range). Warfarin is recommended for all post-ablation patients for at least two months. Whether or not to continue warfarin after two months should be based solely on the presence of stroke risk factors, not on the presence or types of AF. It is generally not recommended that patients with a $CHAD_2$ score of 2 or greater discontinue warfarin therapy.

- Patients with persistent afib usually require additional lesions over and above a complete pulmonary vein isolation. There is no agreement whether these additional lesions should be done during the initial catheter ablation procedure or in a "touch-up".

At this time, catheter ablation should not be considered as a first-line treatment. However, this may change once the results of the CABANA (Catheter Ablation vs Antiarrhythmic Drug Therapy for Atrial Fibrillation) trial are in. This trial will enroll up to 3000 patients who will be followed for 5 years.
O'Riordan, M. Heart rhythm societies develop consensus statement on catheter and surgical ablation of AF, May 10, 2007
http://www.theheart.org/printArticle.do?primaryKey=789667

NEWS BRIEFS

Gene abnormalities in AF patients

As an outgrowth of the Human Genome Project, Cleveland Clinic researchers have discovered 35 gene variations (single-nucleotide polymorphisms [SNPs]) that either increase AF risk or protect against it. The study involved 112 afib patients (100 with underlying heart disease) and 600 controls in which the researchers compared 250,000 SNPs. Nineteen of these were found to be protective, while 16 were associated with an increased risk.
http://www.theheart.org/printArticle.do?primaryKey=792617

Hospital data now on the Internet

The US Department of Health and Human Services has added mortality data to their web site, which

compares the performance of 4800 hospitals in the USA. The web site can be found at http://www.hospitalcompare.hhs.gov

Specialized centers benefit AF patients

The University of Virginia (Charlottesville) and the Oregon Health and Science University (Portland) have both opened special centers for afib patients. The centers provide education, check the appropriateness of previously prescribed medications, address other medical issues such as sleep apnea, and arrange for catheter ablation if necessary. A survey carried out at the University of Virginia found that 76% of afibbers admitted to the center were on the wrong kind or dosage of medications. The patients spent an average of 39% of their time in afib when joining the center program. This was reduced to 15% when appropriate medications were prescribed. About 20% of those undergoing ablation procedures experienced recurrence, but nevertheless reduced their AF burden considerably.
http://www.theheart.org/printArticle.do?primaryKey=789831

My Hydrotherapy Success Story for Afib

by Ian McLaren

As a relative newcomer to the afib scene, I would like to pass on a positive experience which seems to have resulted in a cure for the disorder – at least in my case. I first experienced afib in April 2006 shortly after my 75th birthday. I had been to a local beach for a swim, and was dismayed to find that I was huffing and puffing after swimming only 50 meters or so. It may have been something to do with a couple of bouts of anemia I had experienced a year or two earlier caused, I believe, by long-term use of aspirin following an angioplasty. The afib episodes didn't occur in a series, but simply arrived and stayed, more or less constant after diagnosis. After being referred by our GP to a cardiologist I was placed on a regime of strictly monitored doses of warfarin (Coumadin), digoxin (Sigmaxin) followed by Isoptin (verapamil). When these didn't work, Aratac 200 (amiodarone) was added to the cocktail. Simultaneously I was taking Losec (omeprazole) for a suspected leaking blood vessel, and Lipitor for something else. It was all rather confusing. There were periods of modest improvement, but overall the pulse remained erratic and sometimes fast – up to 110 beats per minute. I despaired of regaining the active life I had enjoyed up until then. Further medications were prescribed, and within a few months I was taking five or six daily. Two electrical cardioversions were carried out, neither of which restored correct rhythm for more than 24 hours. The medications were not only failing to correct matters, but seemed to be producing bad side effects. Something else needed to be done.

Whilst by no means a health freak, I have had a lifelong interest in Yoga, martial arts, and other philosophies which advocate self-help. I lacked the energy to do Yoga, however, I came upon a book by American Dr Frederick M Rossiter, entitled *Water for Health & Healing*. It described various ways in which water may be used to promote health, including the use of hot and cold showers for improving the heart and blood circulation. Whilst I observed no direct reference to afib, it occurred to me that if electrical cardioversions were supposed to shock the heart into correct rhythm (with a success rate of only 50%) it seems maybe the shock of switching from hot to cold water during a shower would have a similar effect. My first experimental attempt convinced me of the possibility, as it is certainly a heart-stopping experience, especially in the middle of a Tasmanian winter with temperatures not far above freezing. The trick is to run the hot water as high as can be tolerated, then turn it completely off and run fully cold for maybe 20 seconds or so, then back to hot, then cold again. Two or three bursts of this are usually enough, finishing with cold water. It feels great when you finish.

After going through this ceremony twice a day for a week or two I began to feel an improvement, and cut back to once a day, while continuing to take the medications. Within a month I found my pulse running at a steady 72 beats per minute and felt confident enough to begin dispensing with the medications, one at a time in the order they had been prescribed until I was using only warfarin. I gave that up last September when it became obvious that it was responsible for the internal bleeding. In place of the warfarin I now take 1000 IU vitamin E daily, vitamins C and B complex, use lots of garlic, and eat a largely vegetarian diet. The pulse has stayed regular

except for a period when I had a bad cold. The stress of this apparently put it back into afib, however, when I resumed the hot and cold showers (no they were NOT responsible for the cold!) it regained normal rhythm.

It is now more than six months since I used any medications, and the afib, if not entirely cured, at least is not a bother any more. Any undue stress seems to upset the rhythm, but nowhere nearly as badly as at the beginning, and it soon settles down. The bad side effects, including internal bleeding, went away with the medications. I have no idea whether hot and cold showers will work for everyone – they may even be risky for some, but I would be happy if others managed to escape this dreadful condition without using drugs.

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