THE AFIB REPORT

Your Premier Information Resource for Lone Atrial Fibrillation!

NUMBER 19 **JULY 2002** **2nd YEAR**

Editorial

In this issue we complete the evaluation and reporting of the results of our second major LAF survey (LAFS II). Our findings regarding the effect of supplements were similar to those for pharmaceutical drugs. In other words, there does not seem to be any "magic" drug or supplement that will reduce episode frequency or duration for all afibbers. This, of course, does not mean that some drugs or supplements will not improve the situation for an individual afibber. Flecainide or disopyramide often helps vagal afibbers and magnesium supplementation could be expected to help an afibber who has a serious deficiency of this important mineral. As we all know, one size definitely does not fit all when it comes to dealing with lone atrial fibrillation.

I did make one interesting observation in regard to supplementation. There was a statistically significant correlation between how respondents felt about the benefits of supplementation and how severe their afib was. Afibbers who felt that supplementation was beneficial spent almost 4 times less hours in fibrillation over the 6-month survey period than did respondents who did not feel that it was beneficial. This may indicate that most afibbers are very observant as to what works and what doesn't. On the other hand, the finding could also be interpreted to mean that afibbers who believe something works will actually make it work – a very strong placebo effect. A fascinating subject for a future clinical trial.

Many afibbers found relaxation, yoga, meditation and similar techniques to be beneficial, but there was no statistically significant indication that they actually help prevent or shorten episodes.

In the next issue we will begin the reporting of the results of LAFS III, the most recent survey conducted in May of this year.

Yours in health and sinus rhythm,
Hans Larsen

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Findings from LAFS II – Part 4

A. Effect of Supplements

Sixty-two per cent of 153 respondents took one or more supplements. There was not a great deal of difference in the preponderance of supplement use between vagal (62%), adrenergic (71%), mixed (59%), and chronic (71%) afibbers. As was the case for pharmaceutical drugs there was no statistically significant overall difference in episode severity (hours spent in afib) between those who took supplements and those who did not.

There was, however, a statistically significant trend for vagal afibbers who took supplements to have significantly shorter episodes (p=0.04). This effect was independent of age. There was also a trend for people who took multivitamins to have longer lasting episodes; however, this trend could be confounded by the fact that afibbers who took multivitamins were less likely to take magnesium as well. Respondents who took large amounts of calcium tended to have more severe episodes; however, these people also tended to be older thus possibly confounding this finding.

Sixty-four respondents with paroxysmal afib gave an opinion as to whether they had, subjectively, found supplementation to be beneficial – 44% said "Yes", 19% "No", and 37% were not sure. Somewhat surprisingly, there was a statistically significant correlation between how respondents felt about the benefits of supplementation and how severe their afib was. Afibbers who felt that supplements were beneficial spent an average of 50 hours in afib during the six-month survey period. This was almost 4 times less than the 194 hours spent in afib by those who did not believe supplementation was beneficial. Respondents who were not sure whether supplements had helped spent an intermediate 76 hours in afib. These differences were statistically significant (p=0.02). Afibbers who had experienced afib for a long time were more likely to say that supplements were beneficial (p=0.005) and older afibbers were less likely to take multivitamins (p=0.04). Fifty-three per cent of chronic afibbers found supplements beneficial even though they did not affect their afib.

The finding that there is a statistically significant correlation between how afibbers feel about supplementation and their episode severity may indicate that most afibbers are very observant as to what works and what doesn't work. On the other hand, the finding could also be interpreted to mean that afibbers who believe something works will actually make it work – in other words, a very strong placebo effect. A fascinating subject for a future clinical trial!

Sixty-four per cent of adrenergic afibbers felt that supplements were helpful as compared to 42% of vagal, 36% of mixed, and 53% of chronic afibbers.

The following supplements were used by more than 10% of the respondents who reported use of supplements:

- Magnesium: 72% Average daily dose – 520 mg (100-1600)
- Multivitamin: 51% N/A
- Vitamin E: 41% Average daily dose – 500 IU (160-1450)
- Vitamin C: 35% Average daily dose – 1000 mg (250-3000)
- Coenzyme Q10: 35% Average daily dose – 100 mg (30-320)
- Fish oil: 35% Average daily dose – 2 grams
- Calcium: 25% Average daily dose – 500 mg (80-2000)
- L-carnitine: 17% Average daily dose – 750 mg (25-1500)
- B-complex: 16% Average daily dose – 50 mg (25-100)
- Hawthorn: 16% Average daily dose – 700 mg (10-1500)
- Selenium: 12% Average daily dose – 150 micrograms (25-200)

The following supplements were taken by less than 10% of respondents:

Beta-carotene: 4%
Niacin: 5%
Vitamin B12: 7%
Folic acid: 5%
Vitamin D: 8%
Alpha-lipoic acid: 9%
Potassium: 5%
Zinc: 4%
Taurine: 7%
Cod liver oil: 4%
Flaxseed: 8%
Garlic: 7%
Ginkgo biloba: 5%
Ginseng: 1%
Digestive enzymes: 8%

Adrenergic and mixed afibbers who took multivitamins tended to have longer lasting episodes (p=0.02) independent of age. There was a highly significant trend for vagal afibbers who took calcium to have longer episodes (p=0.002); this effect increased with larger dosages (p=0.001).

There were trends (statistically non-significant) for vitamin E to decrease episode frequency and severity (p=0.08) and for high calcium intakes to be detrimental (p=0.08); this was especially true for vagal afibbers. Mixed afibbers tended to have shorter episodes and spent less time in afib if they took magnesium (p=0.06).

Afibbers who believed that supplements were helpful were more likely to take vitamin C, B-complex, and magnesium and less likely to take calcium than were those who did not believe supplements to be helpful. These differences, however, were not statistically significant.

Chronic afibbers were less likely to take multivitamins and magnesium, but generally took higher dosages of vitamin C and calcium than did paroxysmal afibbers. These differences again were not statistically significant.

Conclusion

Vagal afibbers who took supplements had significantly shorter episodes than did vagal afibbers who did not and this effect was independent of age and years of afib. No overall benefits of supplementation were observed for adrenergic and mixed afibbers. The effect of supplementation on episode severity could not, for obvious reasons, be determined for chronic afibbers. There was a significant trend for all types of afibbers, most pronounced for adrenergic, who felt that they benefited from supplementation to actually do so. Adrenergic and mixed afibbers who took multivitamins tended to have longer lasting episodes. Vagal afibbers who supplemented with calcium had longer episodes while mixed afibbers tended to have shorter episodes if they took magnesium.

In contemplating these findings it should be kept in mind that some sample groups were small and that the possibility of confounding by other variables is likely. I hope to eventually be able to put all the questionnaire data through a more powerful statistics program that will sort this out. Nevertheless, I believe it is safe to conclude that this survey does not support the idea that there is any one supplement that will "magically" reduce episode severity for all afibbers. This does not mean that supplementing is not beneficial. Many respondents commented that their overall health and well-being had improved since they began supplementing even though their episode frequency and duration had not changed.

B. Effect of Relaxation/Breathing Therapies

Thirty out of 124 paroxysmal afibbers (24%) had tried one or more relaxation, breathing or meditation techniques. There was no statistically significant indication that using these therapies reduced afib frequency or duration. Nevertheless, 80% of the users reported that they had found at least one therapy to be beneficial. In contrast to the supplement study results there was no indication that believing a technique to be beneficial actually translated into less severe afib. Six out of 15 adrenergic afibbers (40%) had tried one or more techniques and 80% had found them beneficial. Sixteen of 67 vagal afibbers (24%) had done likewise and 80% reported beneficial results. Eight out of 42 mixed afibbers (19%) had tried various techniques and 75% had found them beneficial. The most commonly used therapies were:

- Deep breathing: Used by 15% of respondents with 78% success
- Meditation: Used by 9% of respondents with 64% success
- Yoga: Used by 7% of respondents with 56% success
- Acupuncture: Used by 6% of respondents with 43% success
- Relaxation: Used by 5% of respondents with 83% success.

One respondent had found walking to be beneficial, one had found prayer to be effective, and one reported benefits from using the Heart Lock-In technique developed by the Heart Math Institute. Two respondents had tried hypnosis but did not find it useful. Three had tried biofeedback with two observing some benefit and one reporting no benefit.

Closer scrutiny of the collected data revealed some intriguing correlations. Although these were statistically significant they should, because of the very small sample sizes, be taken with a very large grain of salt.

- Older men were more likely to believe meditation to be beneficial (p=0.04)
- Older men and women were more likely to believe yoga to be beneficial (p=0.05)

- People who had experienced afib for many years were less likely to find relaxation therapies beneficial (p=0.004), but more likely to find meditation beneficial (p=0.04).

Conclusion
Although many respondents had found one or more relaxation/breathing therapies to be beneficial there was no statistically significant correlation between the use of these techniques and reduced episode frequency or duration. In other words, the survey did not uncover a universal therapy that would benefit everyone. This does not mean that some individual afibbers may not find real benefit from using one of these therapies. It just means that the therapy may not be beneficial for everyone. As we all know, one size definitely does not fit all when it comes to dealing with lone atrial fibrillation.

C. Effectiveness of Dr. Lam's Protocol
Four paroxysmal and two chronic afibbers had tried Dr. Lam's LAF protocol (www.Lammd.com) . The two chronic ones had both noted overall benefits although the protocol had not returned them to normal sinus rhythm. Two of the paroxysmal afibbers had found the protocol beneficial while one had not. The status of the remaining respondent is not known.

This concludes the evaluation of our second major LAF survey (LAFS II). Next month we will bring you the analysis of our latest survey conducted in May 2002 (LAFS III).

From the Bulletin Board

Many of you do not regularly visit the Bulletin Board and therefore would be unaware of the exciting findings posted there. Here is a very important one I want to share with you.

I would like to "publicly" thank Hans for one of his many pearls in the most recent AFIB Report. The part to which I refer is: "Drugs for conversion only - One vagal afibber has found that taking 225 mg of propafenone at the beginning of an episode helps speed up conversion usually converts within a few hours. One mixed afibber has found that taking flecainide at the onset
of an episode speeds up conversion. Both of these findings are in accordance with the results of clinical trials aimed at testing the efficacy of flecainide and propafenone for conversion."

Accordingly I did some research and dug up the below articles to support his statement. I have VMAF and found that flecainide (Tambocor) has some nice anticholinergic properties. After looking at side effects more in depth, I talked to my cardiologist about flecainide and about the single dose of 300 mg just after onset of AF recommended in the articles. He suggested I try
200 mg as an initial trial. Last night 30 minutes after going to bed I slipped into AF. I immediately took the 200 mg and sometime within 2 to 4 hours after that I reverted to NSR. Normally for me these episodes occur every 10 days or so and last 18 hours or so. Fortunately my ventricular
response rate is very slow. Nonetheless, shaving 15 hours off an episode is quite exhilarating. The nice thing about this approach is the limited nature to the medication - one time just after onset. I don't recommend a flippant approach to any of these antiarrhythmics, but this might work for some of you too. Thank you Hans.
PC, MD

The following are two recent articles on the phenomenon to which Hans referred.

1) **Ital Heart J** *2001 Jan;2(1 Suppl):41-5*
[Effectiveness and side effects of the treatment with propafenone and flecainide for recent-onset atrial fibrillation]
Romano S, Fattore L, Toscano G, Corsini F, Coppo A, Catanzaro M, Romano A, Martone A, Caccavale F, Iodice E, Di Maggio O, Corsini G.
Dipartimento di Cardiologia, Azienda Ospedaliera Ospedale Civile, Caserta.

RESULTS: 352 patients with recent-onset atrial fibrillation were randomized to receive either flecainide (Tambocor), propafenone (Rythmol) or placebo intravenously. Three hours later 80% of the patients in the flecainide group, 68% in the propafenone group, and 28% of the controls had converted to normal sinus rhythm. After 24 hours about 90% of the drug group patients had converted as compared to 46% in the control group. No malignant (ventricular) arrhythmias occurred in any of the groups.

2) **Pacing Clin Electrophysiol** *1998 Nov;21 (11 Pt 2):2470-4*
[Conversion of recent-onset atrial fibrillation to sinus rhythm: effects of different drug protocols]
Boriani G, Biffi M, Capucci A, Botto G, Broffoni T, Ongari M, Trisolino G, Rubino I, Sanguinetti M, Branzi A, Magnani B.
Institute of Cardiology, University of Bologna, Italy. cardio1@almadns.unibo.it
RESULTS: As part of a larger clinical trial 188 hospitalized patients with recent-onset atrial fibrillation were assigned to receive either 600 mg of propafenone or 300 mg of flecainide in a single oral dose. The conversion rates were about 75% for both regimens after 8 hours versus a placebo group conversion rate of 37%. Intravenous propafenone acted quicker than oral propafenone or flecainide, but after 3 hours the conversion rates were comparable. The researchers conclude that single-dose, oral loading with propafenone or flecainide are acceptable alternatives to conventional drug regimens in selected hospitalized patients.

Editor's Comment
One may convert even quicker if the flecainide is swallowed in crushed form with a bit of lukewarm water within 5 minutes of the onset of an episode. A team of German and Italian researchers found that oral doses of approximately 200 mg (3 mg/kg) of flecainide can be safely and effectively used at home to stop episodes of paroxysmal supraventricular tachycardia (a condition somewhat similar to LAF). They observed an 80% success rate within 2 hours, but emphasize that the flecainide tablet should be taken in crushed form within 5 minutes of the start of the episode[1].

[1] Alboni, Paolo, et al. Efficacy and safety of out-of-hospital self-administered single-dose oral drug treatment in the management of infrequent, well-tolerated paroxysmal supraventricular tachycardia. **Journal of the American College of Cardiology**, *Vol. 37, February 2001, pp. 548-53*

Exercise and LAF

The relationship between exercise and lone atrial fibrillation is a complicated one. It is clear that regular exercise improves lung performance and cardiovascular function. It is also clear that overdoing it promotes oxidative stress and may be counterproductive in the long run. Exercise has a profound effect on the autonomic nervous system by shifting the balance from sympathetic to vagal predominance. Exercise also reduces the level of norepinephrine, the adrenergic neurotransmitter, which in excess can initiate an AF episode[1].

So is exercise good? That depends. Strenuous daily workouts and marathon runs markedly increase vagal tone and this would not be a good thing for vagal afibbers whose vagal tone is already excessively high. So for vagal afibbers moderation is the key. Many adrenergic afibbers, myself included, have found that workouts may set off an episode so have backed off from regular, vigorous exercise. This is a mistake. Adrenergic, and perhaps mixed, afibbers need exercise in order to increase their vagal tone and reduce their sympathetic (adrenergic) activity and norepinephrine levels. So what to do? I have kept track of when my episodes began for over 12 years now and have observed that I have never had an episode begin between 11 am and 1 pm. This period, according to Traditional Chinese Medicine, is when energy flow through the heart meridian is at its peak. Is this relevant? I don't know, but it's intriguing. I have now scheduled my workouts for around noon and so far have not encountered any problems. So for adrenergic and mixed lone afibbers it would make sense to do your daily exercise in the time period during which you seem to be the least vulnerable to episodes. But please do try to get some regular exercise unless your doctor disapproves.

[1] *Coats, Andrew J.S., et al. Controlled trial of physical training in chronic heart failure*. **Circulation**, *Vol. 85, June 1992, pp. 2119-31*

More on the Cortisol Connection

In the June issue I discussed the idea of a possible connection between cortisol levels and LAF. I mentioned that I was having a cortisol profile done and would let you know the results. I have received it now and it supports my contention that, at least the adrenergic variety, could be associated with a low cortisol or DHEA level.

I have been keeping a record of the timing of my episodes over the past 12 years and have found that the vast majority of them begin around 4 pm. This observation was actually what gave me the idea that some hormone with a strong diurnal variation could be involved. Cortisol is one such hormone. It peaks in the morning and is at its lowest at midnight. My profile showed a pronounced dip at 4 pm at which time the level (2.12 nmol/L) was barely above the lower limit of the reference range (1.0 nmol/L). Of perhaps even greater significance was the finding that my DHEA (dehydroepiandrosterone) level (0.275 nmol/L) was way below the accepted lower reference level (0.800 nmol/L). So I am now working on increasing both my cortisol and DHEA levels and already suspect that achieving close to normal levels will make a big difference.

For those of you who have been considering having the salivary Adrenocortex Stress Profile done I would say go ahead, especially if you had a stressful childhood which is known to lead to low cortisol levels in adult life. Please do the test when you are in normal sinus rhythm. I would definitely recommend the saliva test rather than a blood test as it is far more indicative for our purpose. I would suggest that you ask your physician or naturopath to order the Adrenocortex Stress Profile from the Great Smokies Diagnostic Laboratory in Asheville, NC. It will be much easier to compare results if we all use the same test and laboratory. Great Smokies has a good reputation for accuracy and reliability. You can find out more about the test at http://www.gsdl.com/assessments/adrenocortex/. Please let me know your results so we can add them to the database.

AFIB News

New stroke prevention drug. An international team of researchers reports that the angiotensin converting enzyme inhibitor ramipril (Altace) is effective in stroke prevention. Their study involved 267 hospitals in 19 countries and lasted 4.5 years. A Total of 9296 patients with vascular disease or diabetes plus an additional risk factor were randomised to receive either 10 mg of ramipril or a placebo daily. At the end of the study 156 patients (3.4%) in the ramipril group had suffered a stroke as compared to 226 patients (4.9%) in the placebo group, i.e. a 32% reduction in risk. The risk reduction was even greater in the case of fatal strokes. Seventeen patients (0.4%) in the ramipril group suffered a fatal stroke as compared to 44 patients (1.0%) in the placebo group, i.e. a 61% risk reduction. The researchers conclude that patients at high risk for stroke should be treated with ramipril. NOTE: This study was funded by several pharmaceutical companies.
British Medical Journal, Vol. 324, March 23, 2002, pp. 1-5, 687-88

Non-drug stroke prevention in AF patients. Over 90% of all blood clots generated during atrial fibrillation are formed in a small pouch in the left atrium, the left atrial appendage. A team of cardiologists from Germany, Italy and the United States now report that blocking the opening of the left atrial appendage (LAA) can effectively seal it off and eliminate the danger of clot formation. Their clinical trial involved 15 patients with chronic atrial fibrillation who, for one reason or another, could not tolerate warfarin therapy. All patients had a self-expanding nitinol cage coated with expanded polytetrafluoroethylene plastic inserted so as to completely seal the opening to the LAA. The cage was brought to the LAA (in collapsed form) via a catheter threaded through a vein in a procedure similar to that used in radiofrequency ablation. The expanded cage ranged in diameter from 18 to 32 mm with the average being 26 mm. The cage was successfully placed in all 15 patients with only one experiencing excessive bleeding. The entire procedure took about 90 minutes to perform. The researchers have since performed an additional 16 procedures and conclude that the implantation of a mechanical device to close off the LAA can be done safely and with relative ease. They call for further trials to evaluate the long-term safety and

effectiveness of the device in reducing stroke incidence in AF patients.
Circulation, Vol. 105, April 23, 2002, pp. 1887-89

Magnesium helps prevent ectopic beats. Researchers at the US Department of Agriculture report that magnesium deficiency is associated with an increase in ectopic beats, both supraventricular (PACs) and ventricular (PVCs). Their clinical trial involved 22 postmenopausal women who were maintained in a metabolic ward for 6 months. None of the women had been diagnosed with atrial fibrillation. All the women ate a diet that provided less than half of the recommended daily intake of magnesium for the first 81 days of the trial. They were then randomly assigned to receive either a placebo or magnesium gluconate capsules with each meal for the next 81 days. The daily magnesium intake in the placebo group was 130 mg versus 411 mg in the supplement group. The current Recommended Daily Allowance (RDA) is 320 mg for women and 400 mg for men. The researchers noted that the women in the placebo group had significantly more ectopic beats (11/hour average) than the women in the supplemented group (6.5/hour average) when evaluated using 21-hour Holter monitoring. They conclude that a magnesium deficiency can lead to an increase in ectopic beats and caution that people who use diuretics, live in areas where the drinking water is very soft or are predisposed to ectopic beats or magnesium loss may require more magnesium than normal. They also point out that recent surveys show that many Americans are deficient in magnesium and have a dietary intake of only 200 mg/day or less. **Editor's Note**: Although the trial did not target people with atrial fibrillation there is no reason why its conclusions should not be applicable to afibbers. I believe the results clearly support the idea that magnesium, preferably as maleate, citrate, gluconate or orotate, is a very important supplement for afibbers. Although ectopic beats in themselves are not considered harmful, there is ample evidence that most AF episodes are preceded by an increase in ectopic beats.
American Journal of Clinical Nutrition, Vol. 75, March 2002, pp. 550-54

Accurate test for pheochromocytoma. Pheochromocytoma is a recognized cause of atrial fibrillation. It is caused by the presence of a tumour, most often in the adrenal gland, that periodically releases large amounts of norepinephrine (noradrenaline) and epinephrine (adrenaline). This release is what initiates the afib episode. Although pheochromocytoma is a rare disease its presence should be suspected if AF is accompanied by periodic hypertension, hypertension resistant to normal therapy, headaches or excessive sweating. The standard test for pheochromocytoma involves the measurement of catecholamine (epinephrine and norepinephrine) concentrations in a 24-hour urine sample. The test, unfortunately, is cumbersome, error-prone and subject to interference with many dietary components and supplements. An international group of researchers now report the development of a new test, which is highly accurate and requires only a blood sample. The test measures the level of free metanephrines in blood plasma. It is 99% accurate in predicting the presence of a tumour and 89% accurate in ruling out the presence of pheochromocytoma. The researchers caution that coffee (including decaf coffee), caffeine, nicotine, acetaminophen (Tylenol, Paracetemol) and emotional stress can interfere with the test results.
Journal of the American Medical Association, Vol. 287, March 20, 2002, pp. 1427-34

All beta-blockers are not equal. Beta-blockers are widely used in the treatment of congestive heart failure (CHF) and there is some evidence that some may be more effective than others. Beta-blockers are used in an attempt to decrease the higher than normal sympathetic (adrenergic) activity, which is a common feature of CHF. Researchers at the University of Toronto have just released a report that compares the effectiveness of metoprolol (Toprol, Lopressor), a selective beta-blocker, and carvedilol (Coreg), and non-selective one. The researchers found that carvedilol is substantially more effective than metoprolol in reducing sympathetic nerve activation and in reducing the level of circulating norepinephrine (noradrenaline) in CHF patients. **Editor's Note**: Since excessive sympathetic activation and norepinephrine levels are implicated in the initiation and perhaps continuation of the adrenergic type of LAF it seems likely that carvedilol may be more effective in preventing adrenergic episodes than is metoprolol. Unfortunately, all the research on carvedilol that I am aware of has involved CHF patients. It would be most interesting to see a clinical trial of the use of carvedilol in people with lone atrial fibrillation of the adrenergic or mixed variety.
Circulation, Vol. 104, October 30, 2001, pp. 2194-99

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