

THE AFIB REPORT

Your Premier Information Resource for Lone Atrial Fibrillation!

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16th YEAR



Welcome to the spring issue of The AFIB Report which I trust finds you all in good spirits and calm hearts. Magdalena and I continue on our high action schedule with more unexpected medical surprises, this time involving a stroke for her 89 year old mother in BC Canada that put things in high gear for us both, and with Magdalena rushing up to Kelowna to care for her mom for several weeks while I had to dash off to Honolulu for a non-stop marathon of overdue errands in my old hometown of 38 years. Alas, never a dull moment these days it seems.

In this issue, we start with reviewing a recent letter to the editor of the International Journal of Cardiology on 'Gender impact on outcome of AFIB ablation'; a subject often discussed and speculated about on our busy forum. Women, as seems too often the case, get the short end of the stick relative to men and risks of needing more repeat ablations. Yet the added risks are not set in stone, by any means, with some of the drivers of this elevated risk for women being modifiable, in part, via changing attitudes and expectations by physicians and some women themselves.

Next we examine a report from the online publication 'Science Daily' highlighting the strong association found in stroke victims with low levels of serum Vitamin D and both greater stroke severity as well as poorer early months recovery. Vitamin D repletion has now been associated with such a wide array of health benefits, including many showing solid support for cardiovascular health, that we feel it's a smart move for all of our readers to at least confirm your serum Vitamin D3 levels by a simple blood test or finger prick test ... the later which can be done without a doctors prescription ... and when low serum levels are found, to supplement with safe daily intake of Vitamin D either in pill form, or from sun or sunlamp exposure while confirming restoration of sufficiently optimal levels with your physician.

Our third offering examines an interesting new study out of Australia that has received a lot of press of late. It underscores our central message at 'The AFIB Report' and website of adopting robust life-style and dietary improvements, other cardiovascular risk factor management (RFM) and adding AFIB ablation when required, in a combined synergistic effort leading to a superior overall impact on ablation outcome and AFIB treatment. This is the latest study examining RFM impact over the last year in our newsletter. And yet, these authors address all the major CV risk factors at once, with structured careful follow-up to clearly emphasize the value of what we have preached here long and hard from the beginning of this publication and web presence 16 years ago. In addition, this study provides details of the specific RFM methods they adopted that can be useful to those of you wishing to create, or possibly enhance, your own RFM efforts. As such, we expand our coverage of this topic to share those details.

*And to help in that cause, our last two articles come as '**Blasts from the Past**', offering insights from years ago that are still highly relevant to the issue of RFM. The first, reviews Hans Larsen's 'Survey 14' from our November 2007 issue, which investigates the results of various life-style and RFM efforts our readers long ago adopted and experimented with through 2007. The final review links to an excellent article from Dr. Patrick Chambers on magnesium's role in AFIB. These last three related topics in this issue, can thus help those looking to improve their own RFM and self-care for improved health, and you can find here just about all the steps needed to build a highly effective combined RFM program.*

Wishing plenty of NSR for All!
Shannon

Impact of Gender on Outcomes after AFIB Ablation

INTERNATIONAL JOURNAL OF CARDIOLOGY (IJC), NY (Letter to the Editor) March 24, 2015.

NEW YORK, NY. In a letter to the Editor of the IJC, a group of renowned electro-physiologists (EPs) from New York, Univ. of Penn, Kansas University, and Texas convey results of a thorough meta-analysis collectively analyzed to compare long-term outcomes of catheter ablation (CA) for AFIB in both genders. A study inspired by their being, as yet, little clear data on the relative efficacy of CA comparing men to women.

An exhaustive search of all PubMed and Embase databases for the terms 'atrial fibrillation' and 'ablation' was used looking for studies reporting outcomes in adult AFIB patients (≥ 18 yrs old), of all degrees of duration and symptom severity from the inception of these databases through the end of May 2014.

Various software were used to analyze the large amount of data found with random effects modeling applied to derive pooled odds ratios and 95% confidence intervals (CI). Heterogeneity was assessed between studies in this meta-analysis to discern the percent of variation across them that resulted from heterogeneity rather than chance. Meta-regression was used to answer whether the type of AFIB can predict AFIB recurrence rates after an index ablation.

The robustness of the findings was evaluated by omitting one study at a time, or outlier studies, and switching their meta-analysis model from a random to fixed-effect model. In short, no stone was left unturned to validate the findings.

Twenty studies (N = 9968, with 2,112 females (21.2%)) were selected for final analysis after excluding those with ≤ 100 patients, < 1 month blanking period, < 12 months follow up and exclusion of all studies that used AV-node ablation for rate control. Eleven studies defined AFIB recurrence as any atrial tachycardia (including AFIB) lasting more than 30sec. Four of the twenty studies included post ablation maintenance of NSR with anti-arrhythmic drugs (AAR) deemed as success. There was no change in summary findings via fixed-effect analysis and no change of the overall effect size occurred from omission of any single study.

The Main Findings of this quality meta-analysis revealed:

- 1) A 20% greater risk of AFIB recurrence in women compared to men after CA.
- 2) This difference is partly attributed to type of AFIB with the detection of % of non-paroxysmal patients having a significant co-variate association with AFIB recurrence rates in each study.

While overall prevalence of women with AFIB is similar to men, women make up only 21.2% of the composite AFIB population in these 20 studies analyzed, nonetheless. A finding that dovetails inline with both earlier AFIB gender studies which showed an under-representation of women in AFIB ablation statistics, and also is a phenomenon seen across various cardiovascular conditions. Women are clearly less likely to be referred for cardiac procedures be they CA, coronary revascularization or defibrillator implantation, to name a few examples.

The authors noted that while the underlying mechanism for the observed increased recurrence rate in women are not fully established yet, this study found that at time of ablation women with AFIB are older and have a greater prevalence of structural heart disease. Women are also referred later in the course of this condition and tend to be prescribed more AAR drugs for longer after initial treatment failure.

Also, AFIB-ablated women had a higher overall prevalence of non-paroxysmal AFIB as well as having more non-PV triggers. Thus, all of the above makes sense considering the later stage of referral for the average female ablation patient such that CA typically occurs in women at both a more advanced stage of the disease process, and/or at a more advanced age than for the average man when referred for ablation, and may well make up a large part of the reason for the discrepancy in AFIB recurrence rates between men and women.

In addition, recurrence rates with longer duration of AFIB are higher for both genders, as this well known association often leads to more structural and electrical remodeling the longer one has had AFIB. As such, this factor adds another element to the equation for women who tend to come later to the ablation process for whatever reasons.

Whatever the overall reasons for the under-representation of women in ablation statistics, it's clear the contributions to this skewed present reality are indeed multifactorial. And yet, it's also clear there is plenty of room for improving these odds for women and moving those stats at least closer to equal status with men as well.

Possible Solutions

One nuance buried in these stats that is not so obvious, is that since more women tend to be older and farther along in AFIB progression than men at the start of their respective ablation process, it stands to reason that many such women may be less well-served by EPs who focus mostly on PVI/PVAI-only ablations as their main case load, and thus may seldom venture into non-PV trigger ablation work in their typical daily practice.

As such, a significant number of PVI-only-centric ablationist to whom a good number of older, more advanced women may be referred, may not be highly experienced or entirely comfortable in addressing such non-PV trigger sources. That factor, too, could potentially be an additional contributing element to the skewed increase in recurrence rates observed among women.

A partial solution in this case is obvious, via women becoming more highly discriminating in choosing the most experienced ablationist they can access to do their index procedure, as well as any follow up procedures that might be required, in order to help minimize the amount of total work done and number of ablations needed for long term success.

There are a few possible physiological rationales for some percentage of this increased risk for recurrence in women, such as a greater tendency for amyloidosis that can also contribute to AFIB and recurrence as well, and possibly some hormonal impact during and after menopause.

However, it seems clear from the impact of women being viewed and treated somewhat differently and later than men with regard to AFIB ablation, and across the cardiovascular specialties as well, that at least a partial remedy for this 'gender gap' is a change in attitude and approach taken by both physicians and female patients alike when it comes to AFIB ablation. At the very least, bringing women along sooner in the process could help narrow this gap with respect to an increased post-ablation recurrence risk for women over men.

Vallakati, A. et al. Impact of Gender on Outcomes after Atrial Fibrillation Ablation. Internat. Journal of Cardiology. March 24, 2015;187 12-16. <http://dx.doi.org/10.1016/j.ijcard.2015.03.341>

Editor's comments: The main take home message from this interesting meta-analysis showing women having a significant 20% higher risk than men of arrhythmia recurrence after an index ablation, is that the 20% risk rate is not at all set in stone. Nor is this added risk being driven only, or even mostly, by inherent physiological factors found in the fairer sex alone. Indeed, no doubt this added risk for women can be lessened considerably by addressing the modifiable attitudes and inclinations of many cardiologists and EPs, combined with women themselves to help insure they are offered ablation at an earlier age and stage of disease progress when appropriate, as are men on average.

After all, women suffer from AFIB at similar rates to men, and there may well be some inherent differences in how AFIB manifests and progresses in women that might prevent closing this gap entirely. Nevertheless, examining and addressing the various outlooks and opinions from both physicians who tend to refer women for ablation at later stages of the process, and at a generally older age than they do men, combined with a concerted educational effort for women afibbers to encourage not procrastinating too long seeking earlier and more effective treatment after exhausting all risk factor modification efforts,

natural means and drug therapy, when they still have too high an AFIB burden. Addressing just these two factors earlier, might collectively reduce the present 'gender gap' risk of recurrence revealed by this study to at a much smaller level, relative to the risk of recurrence currently favoring men.

Low Vitamin D levels associated with Stroke Severity and Recovery

SCIENCE DAILY, FEB 15, 2015. The importance of insuring an optimal vitamin D sufficiency as a key contributor to numerous health benefits, including cardiovascular health, has been an ongoing emphasis in *The AFIB Report* and our the website www.afibbers.org for many years.

Now a report from the American Heart Association (AHA) in a recent online edition of *Science Daily* explores the association between low levels of serum Vitamin D3 marker **25(OH)D3** (or '25-Hydroxyvitamin D3'), as the Vitamin D blood test is called, and an increased risk of suffering greater stroke severity and/or having poorer overall health months after a stroke or CVA event (cerebrovascular accident). Previous studies have shown connections between low Vitamin D status and neurovascular injury which entails damage to major blood vessels serving the spinal cord, brainstem and brain, laying a plausible foundation for the study design and end points.

Lead study author Dr. Nils Henninger, assistant professor of neurology and psychiatry at U-Mass Medical School, noted that "Many of the people we consider at high risk for developing stroke have low vitamin D levels. Understanding the link between stroke severity and Vitamin D status will help us determine if we should treat vitamin D deficiency in these high risk patients."

The aim of the study was to determine if low Vitamin D serum levels are predictive of ischemic stroke severity and poor health after a CVA, by recruiting 96 stroke patients treated during a one-year period from January 2013 to 2014 at a US hospital.

Study Results

- Patients with low vitamin D, appropriately defined as less than 30ng/ml of 25(OH)D, had about two times larger areas of dead tissue from a CVA clot or thrombus compared to patients with normal levels >30ng/ml but <100ng/ml (an optimal range is considered from 50-80ng/ml).
- For each 10ng/ml drop in vitamin D serum level, the risk for healthy recovery in three months following a stroke/CVA decreased by almost half ... and this, regardless of the patient's age or initial stroke severity.
- The authors also noted that the impact of low vitamin D status were similar among those patients who had a lacunar stroke, i.e. those in which small intricate arteries of the brain are impacted, as well as those suffering non-lacunar CVAs, such as the kind caused by carotid artery disease or AFIB-related embolic debris from the LAA appendage, for example.

While Dr. Henninger expressed the common caveat issued almost as a rote response from medical researchers, by suggesting that: "... it is still too early to draw firm conclusions from this small study and patients should discuss the need to supplement with Vitamin D with their physicians ..." he, nevertheless, did suggest the study was strong grounds for further rigorous investigation into the association of Vitamin D and stroke severity. Dr. Henninger emphasized that: "... if our findings are replicated, the next logical step would be to test whether supplementation can protect patients at high stroke risk". Though, I would hope both questions could be addressed within a single carefully designed, and much larger, randomized controlled trial. Thus, speeding up the time in which Vitamin D might finally take its rightful place as a key mainstream prescription for a wide variety of health concerns.

American Heart Association. 'Low Vitamin D predicts more severe strokes, poor health post-stroke.' *ScienceDaily*, 11 February 2015. <http://www.sciencedaily.com/releases/2015/02/150205083522.htm>.

Editor's comments: Clearly an important new study on Vitamin D and association with stroke that is relevant to all afibbers. Although I fully understand the normal processes and politics that have led to the snails pace at which the veritable ocean of evidence about the wide array of Vitamin D health benefits has slowly made its way into mainstream medical thinking and clinical practice (and in spite of so many largely positive small and large studies over the past decade), you would think the question: "Is it worth prescribing Vitamin D to all patients who have a known deficiency, and do not have contraindications for taking Vitamin D", would have been more than well-enough answered in the affirmative long ago.

At this stage of the science, it doesn't require being bold, brave, cutting-edge or even controversial to state the obvious ... not with optimal range Vitamin D supplementation's very large margin of safety when guided by trained physicians and naturopaths, and with it's extremely low cost combined with the wealth of solid evidence for such a wide range of potential benefits to multiple organ systems. In this day and age, I feel it's borderline malpractice **not** to prescribe appropriately monitored doses of Vitamin D3 to all patients who test below optimal ranges and can tolerate the nutrient without issue. At least, that is my two cents from the overwhelmingly positive, or at least neutral, outcomes from the vast majority of serious analysis done on vitamin D to-date.

If you have not been evaluated for vitamin D status, please make that a priority during your next visit with your primary care physician.

Aggressive Risk Factor Reduction Study for AFIB and Implications for Outcome of Ablation

ADELAIDE, AUSTRALIA. We look next at a very worthwhile new study that speaks right to the heart of our core philosophy and message at *The AFIB Report* and website since the beginning. Stemming from recent investigations by a group of earnest researchers from University of Adelaide down under, this effort, once again, examines the impact of aggressive life style-based risk factor reduction methods (RFM for short) on AFIB ablation outcomes.

In our June/July 2014 issue ¹, we reported on a larger and similar study on long term outcome of CA for AFIB patients with coexisting metabolic syndrome and sleep apnea that highlight the same message of including dedicated (RFM) as a critical permanent treatment modality in an overall comprehensive plan of attack for AFIB, both stand-alone and combined with an expert ablation process when required, for a synergistic improved outcome.

Though this new study mainly reinforces previous investigations along similar lines, it combines reduction of all the main CVD risk factors together, rather than looking at the relative impact of addressing one or two risk factors at a time, in isolation, as in past studies to-date. Looking at both angles is vital for a deeper understanding of the merits of such an approach to clinical treatment.

None of these benefits of RFM will come as a revelation for our readers, even though the concept and findings have, surprisingly, recently been received as just that in some physician/journalist circles.

And though the message and results will be familiar ground for most of you, there is real value in reviewing this work for those wanting to craft, or add to, an existing RFM protocol such as those we have recommended here as long as I can remember. And doing so, will help better understand the steps taken by this studies' active RFM arm, and possibly improve results from one's own custom RFM effort.

¹ Mohanty, S. et al, Long Term Outcome of Catheter Ablation in Atrial Fibrillation Patients with Coexistent Metabolic Syndrome and Obstructive Sleep Apnea: Impact of Repeat Procedures versus Life-Style Changes **Epub Ahead of Print:** doi:10.1111/jce.12468.

It's certainly a very welcomed message, nonetheless, that combined collectively now with quite a few similar prior studies, should give enough weight and emphasis to finally encourage a wider adoption of the recommended RFM protocols by many more EPs, cardiologist and - most importantly - frontline GPs. Incorporating a dedicated effort from the first patient visit onward toward reducing life-style barriers to better cardiovascular and overall health by providing the structure and tools to motivate and educate patients are obvious important common sense self-care steps. Such a move can only be a very good upgrade to the standard of care workflow.

So, without further ado, lets take a closer look at this well thought-out investigation with its completely predictable results ... as well as one very important caveat about reading too much into what these results so far actually imply, as well. Access the reference study listed below for those wishing to see all the data numbers.

The Setting ...

This was a modest-sized observational study consisting of 281 consecutive patients undergoing AFIB ablation. Of this total cohort, 149 with a body mass index (BMI) $\geq 27\text{kg/m}^2$ plus ≥ 1 cardiac risk factor that have been linked as promoters of AFIB, such as (*obesity, hypertension, sleep apnea, diabetes and alcohol excess*) along with such other risk factors as (*hyperlipidemia, glucose intolerance and smoking*), were all offered RFM management according to American Heart Association/American College of Cardiology guidelines.

A total of 61 patients opted for the RFM active arm of the study while 88 were study controls. Both groups were assessed every 3 to 6 months by clinic review and 7-day Holter monitoring. Final follow-up was just under two years, as approximately 80% of participants failed to attend any later follow-up efforts. Atrial Fibrillation Severity Scale (AFSS) scores were tallied at baseline, and again at follow-up after ablation, to determine AFIB symptom burden and severity as an endpoint for the study.

RFM methods ...

- **Blood Pressure** in the RFM group was measured three times daily by home-based automated monitor and appropriate-sized cuff. Also, exercise stress testing was performed to check for the presence of exercise-induced hypertension: (**BP > 200/100mmHg**) to determine when to further optimize therapy. Life-style dietary advice consisted of salt restriction, while drug therapy was initiated by using renin-angiotensin-aldosterone system (RAAS) antagonists, and other agents added when required, to achieve at least 80% maintenance of the target BP (**<130/80mmHG**).
- **Weight Management** was based on a goal-oriented structured motivational program using face-to face counseling. Patients were encouraged to use the available support counseling and more frequent reviews, as needed. Initial weight reduction was attempted by using a meal plan and behavior modification.

Each RFM patient was required to maintain a careful diet and physical activity diary. Meals were of high protein, low-glycemic index, calorie-controlled foods. If patients lost <3% of body weight after 3 months, they were prescribed very low calorie meal replacement sachets such as (Prima Health Solutions, or Nestle Health Science (both from Sydney Aus.) for 1 to 2 meals a day. The initial goal was a 10% weight reduction, and after achieving this initial goal, meal replacement was substituted again with the initial high protein, low-glycemic index, calorie-controlled meals to achieve a target BMI of $\leq 25\text{kg/m}^2$. Low intensity exercise was prescribed at 20min three times a week, increasing to 200min of moderate intensity/week.

- **Glycemic Control** included a glucose tolerance test if baseline fasting glucose levels were between 100 to 125mg/dl. Insulin resistance or diabetes mellitus (DM) was initially managed with lifestyle methods and if the patient was unable to maintain HbA1c levels $\leq 6.5\%$ after 3 months, metformin was started. Patients in both groups with HbA1c $\geq 7\%$ were sent to a specialized diabetes control clinic.

- **Obstructive Sleep Apnea** therapy was predicated on apnea-hypopnea index (AHI) being $\geq 30/h$, or if it was $>20/h$ with resistant hypertension or problematic daytime sleepiness. Treatment included positional therapy and CPAP (continuous positive airway pressure) therapy.
- **Smoking and Alcohol** control was by behavioral methods using a '5As' (ask, advise, assess, assist and arrange follow-up) smoking cessation protocol, and alcohol excess was curtailed via counseling with regular support follow-up to reduced alcohol consumption to ≤ 30 grams/week.
- **Lipid Control** is the final RFM method used in this study. Basically, if patients were unable to achieve an LDL-cholesterol level of 100mg/dl after 3 months of the new diet and exercise program, then a statin drug was prescribed. Fibrates were used for isolated hypertriglyceridemia (triglycerides >500 mg/dl), or were added to statin therapy if triglycerides were >200 mg/dl and non-HDL cholesterol levels were >130 mg/dl. *(Note: I would be surprised, when the relative independent contribution of each component of this rather complete cardiac RFM program is finally determined, if the lipid control arm plays much of a factor in AFIB burden reduction.)*

The Control Group was given information on RFM too, however, they continued any RFM efforts only under the direction of their local treating physician.

Operators blinded as to the patients' assigned arm of the study performed the CA procedure. The ablation technique included a wide-encircling PVI with the standard end-point of electrical isolation in all patients. Further substrate modification was performed for patients with any AFIB episode duration of ≥ 48 hrs, or if the largest left atrial (LA) dimension exceeded a whopping 57mm.

Repeat ablation was offered if recurrent arrhythmia occurred after the 3 month blanking period, and individual operators then decided on the type, and extent, of additional ablation lesions beyond re-isolation of the pulmonary veins which was included in all repeat ablations. Procedural success was determined by absence of any arrhythmia >30 sec at the end of the 3 month blanking period.

Results ...

Not surprisingly, the 61 patients in the adjunctive RFM + ablation group fared significantly better across the board, than did the 81 members of the ablation-only control group overall, with the former groups dedicated adherence to a solid RFM program improving outcome of AFIB ablations by reducing both AFIB burden and severity while improving reverse structural remodeling.

The ablation-only control group also experienced solid improvements as well, including improvement in electrical and structural remodeling, though to a lesser degree than those adding the rigorous RFM protocol who had significantly greater gains on the various metrics used to measure success here.

Not only did the RFM group have less arrhythmia breakthroughs, and lesser duration of post ablation activity, but also required slightly less repeat ablations as well in order to maintain NSR more consistently over the study period. And therefore, improving single procedure AFIB-free survival compared to the control group during the study time frame. Yet, those in the RFM group who also underwent multiple ablations fared the significantly better overall at final follow-up.

At baseline, both groups had similarly high AFSS symptom burden scores. After ablation, both groups' AFSS 'global well being' scores were improved by >2 fold, though the RFM group did notably better with the 'global well being score' moving >3 fold: 2.4 ± 0.9 to 7.6 ± 1.7 ($p < 0.001$), compared to the control group improving from 2.5 ± 0.9 to 5.7 ± 2.0 ($p < 0.001$). Indeed, though the control group's AFSS scores all improved significantly after ablation, every AFSS metric favored the RFM group at final follow up.

The main variable seen between the two groups regarding RFM, was the greater motivated focus and discipline within the RFM group compared to the control group, whose more limited RFM efforts lacked the added coordination, effort and inspiration of the guided RFM group. And the gap between the groups certainly underscore the significant difference those variables can make.

Conclusions, Implications and Editors Comments:

The small collection of important RFM-based studies out of Adelaide over the last two years have rightfully stirred up interest in the AFIB community; and we, at *The AFIB Report*, applaud their efforts at further defining the key role and advantage of including life-style/dietary modification and cardiac risk factor management as cornerstone steps for long-term AFIB treatment.

A stance, that has been the fundamental message of our newsletter and website from day one, and over the past 16 years, as one key phase of all-inclusive plan of attack incorporating all of the best tools in our constantly evolving toolkit of knowledge and discovery in this dynamic field of electrophysiology and integrative functional health care. Start treatment including robust life-style/RFM and add an expert ablation process when, and if, RFM proves insufficient, for the best long-term freedom from arrhythmia.

It was clear from the outset that we are still a good ways off from unlocking the core underlying metabolic/systemic cause(s) of AFIB, and certainly with finding a fundamental cure(s). And that is still the case, even though real progress has occurred in both our understanding of genetic and cardio-metabolic contributors, as well as in ablation methodology and technology. Plus, the added focus on addressing aggressive RFM as all-important steps in the big picture of most effective AFIB treatment.

Indeed, it's been apparent for a long time that AFIB is not one disease entity, but a manifestation of things gone awry in the body for various reasons, and often variable in different patients with various solution elements too. This is not news, and should come as no surprise to anyone who has studied this field or followed a large group of afibbers over many years as we rode the rollercoaster of extremes which living with AFIB can bring to one's life.

Nevertheless, even though neither ablation, nor life-style RFM, is inherently a stand-alone cure in and of themselves, the best examples of both methods can, indeed, bring about a functional 'cure-like' long term freedom from AFIB for many afibbers. This is especially true when an expert ablation process is added to the mix of robust dedicated RFM for those afibbers also suffering from the kind of cardiovascular risk factor co-morbidities that are contributing to an ongoing progression of their AFIB. Both methods are excellent tools that work even better when combined together with clear vision and understanding of the strengths and limitations of each approach.

Yet, just as there can be some long-term attrition of successful ablation outcomes many years later. So too, one can expect attrition of initially successful RFM protocols used alone as well. As we have seen repeatedly among a large number of our active forum members who have dedicated themselves to long-term life style, dietary and RFM protocols to very good effect, only to then see AFIB return, and at times with a vengeance, in spite of that initial excellent success in the first few years of RFM-only treatment focus.

What we, as long time AFIB patient advocates who have lived in the trenches face to face with the beast for decades, respectfully suggest for those rightfully-enthusiastic recent converts to the RFM mantra we have been chanting and putting into practice for many years, is to let greater evidence be your guide and use a clear, sober eye before letting the cart run too far in front of the horse of expectations here, and thus risk throwing the baby out with the bathwater in an over-exuberant zeal for RFM measures alone.

For some, RFM can truly be the solution to putting the genie back in the bottle long term, and as such its just common sense to make every effort at consistent RFM for at least six months to a year of treatment, preferably the earlier in one's AFIB history the better. However, if after such a devoted commitment to RFM, the results are anything less than a dramatic and consistent reduction in AFIB burden, then our long experience shows that it is wise not to avoid any longer also finding the most experienced EP possible to add the often critical step of an expert ablation process to the mix. A fact, that a majority of our community has discovered, in order to get the best long-term results from a combined approach of expert ablation with on-going dedicated RFM, should RFM alone prove insufficient long term.

So lets not be too hasty, based on such a promising, but still limited set of small studies to date, in presuming that RFM is an actual new holy grail cure, and certain to relegate ablation to a rarely used afterthought only for select patients. The data, and our long experience does not yet support such a conclusion, even though such was recently projected in a recent popular medical blogger's musings.

What we have found through the school of hard knocks is to keep searching, keep learning and add to each step of hard earned knowledge as we move steadily closer to our own effective long term solutions. A large majority of us have also learned the core value of an expert ablation process as well, in combination with a life time of dedication to better diet and nutrition, stress reduction, weight control, treating high BP and sleep apnea when required, and diabetes too, etc.

In the battle for carving out as much sustain NSR as possible in life, we cant afford to dismiss or devalue any key modality which can buy us more time with a quiet heart, as main pillars of good AFIB treatment. *Pathak,RK, MBB, et al. Aggressive Risk Factor Reduction Study for Atrial Fibrillation and Implications for the Outcome of Ablation. JACC 2014;64:2222-31*
<http://dx.doi.org/10.1016/j.jacc.2014.09.028>

'Blasts From the Past'

Can Life-Style, Diet and Risk Factor modification reduce AFIB? **(From Survey 14 - The AFIB Report Nov. 2007 - Hans Larsen)**

About half of all lone afibbers have been able to reduce or eliminate their AFIB episodes for extended periods of time through diet changes, supplementation or other alternative protocols. A survey (LAFS-14) of 248 afibbers (89% paroxysmal) was carried out in 2007 to determine the most successful strategies for managing LAF. A summary of the findings is presented below.

It is clear that vagal AFIB is more likely to be manageable through diet changes and supplementation than is mixed AFIB. Only 27% of mixed afibbers had found natural approaches to be useful as compared to 56% among vagal afibbers.

The most popular intervention program was trigger avoidance engaged in by 88% of all respondents. This was followed by supplementation (84%), dietary changes (55%), and other therapies (55%).

Avoidance of caffeine had been found useful by 67% of respondents, alcohol avoidance by 56%, and avoidance of aspartame and MSG by 38% and 34% respectively. Altogether, respondents had identified 17 important triggers.

The most important dietary changes were elimination of wheat, gluten and dairy products, and a switch to the Paleo diet. These changes were significantly more successful among females and vagal afibbers.

Eighty-five percent of responders had tried supplementation. The most effective supplemental was *magnesium glycinate*, which had been found beneficial by 48% of those who had tried it. *Potassium* supplementation (including low-sodium V8 juice) had been tried by 79% of all respondents and found beneficial by 43%. *Taurine* had been tried by 43% and found beneficial by 32%. About half of those supplementing with magnesium also took potassium and taurine.

Breathing exercises and relaxation therapy were the most commonly tried stress reduction measures and had been found successful by 39% and 34% respectively. Yoga had been tried by 19% and found beneficial by 52%.

Dealing with GERD, digestive problems, and food allergies had benefited 26-30% of those who dealt with these conditions. This clearly indicates digestive problems are an important component of AFIB.

The percentages of responders who believed that the various therapies had been beneficial on their own, or in combination with other measures, are given below:

THERAPY	SOLE THERAPY	COMBINED THERAPY
Trigger Avoidance	36%	50%
Dietary Changes	30%	55%
Supplementation	25%	53%
Stress Reduction	19%	53%
Treating of CVD Risk Factors	35%	44%

- About 50% of respondents had found a way of shortening their episodes. On-demand (pill-in pocket) flecainide had been found effective by 25%, light exercise by 24%, and resting by 21%. The most effective therapies for women were hydrotherapy, meditation, tranquilizers and resting, while the most effective therapy for men was vigorous exercise. This is not surprising since vigorous exercise will increase adrenergic tone and 80% of respondents who had found vigorous exercise beneficial were male, vagal afibbers.
- A third of respondents had found ways of preventing ectopics with supplementation using the magnesium/potassium/taurine combination being the most popular, followed by the consumption of low-sodium V8 juice.

For detailed supplement suggestions please see [The Strategy - Metabolic Cardiology](#)

Magnesium & Potassium in Lone Atrial Fibrillation By Patrick Chambers MD

(The following is an brief overview of an larger excellent in-depth article from many years past, and still highly relevant today, on the role of magnesium and potassium in lone AFIB. Written by long time expert contributor Dr. Patrick Chambers, and currently found in our website 'AFIB Resources' section as linked to below for those wish to investigate more thoroughly.)

Lone Atrial Fibrillation (LAF) is AF without discernible cardiovascular disease, e.g., without congestive heart failure, high blood pressure, prior cardiac surgery, rheumatic heart disease, etc. It has been associated with a number of diseases primarily involving organs other than the heart. These include seemingly widely disparate disorders such as hyperthyroidism, gastro-esophageal reflux disease (GERD), dys-autonomia (abnormality of autonomic nervous system), impaired glucose tolerance, etc. LAF involves a “defective substrate” and is triggered by an increase in sympathetic tone (adrenergically-mediated LAF or AMAF) or an increase in parasympathetic tone (vagally-mediated LAF or VMAF). The disorder is chronic in nature and may occur intermittently (paroxysmal) or be a constant companion (permanent).

The phrase “defective substrate” has become integral to any discussion of the cause of LAF. Organ candidates for this “substrate” include the heart, as well as kidney, adrenal gland, pancreas, GI tract and autonomic nervous system (ANS). This defect could involve an enzyme, a hormone or receptor site, a membrane pump, channel or exchanger, to name a few. It could be environmental, genetic or both. Magnesium (Mg) deficiency has emerged as a significant player in the etiology of LAF. This is not completely unexpected, since some 350 different enzymes(1) or about 80% of all enzymatic reactions in the body(2) rely on magnesium. Although much has been written on the role of Mg deficiency in other diseases, little has been devoted to LAF. Much is still unknown, e.g., why one individual with Mg deficiency manifests with insulin resistance and another with insulin hypersensitivity, is not clear. What is clear is that LAF is not caused by a single factor, but by the delicate interplay of many factors. Some of those associated with Magnesium deficiency follow in the link below:

For the full article see: <http://www.afibbers.org/resources/PCmagnesium.pdf>

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