

THE AFIB REPORT

Your Premier Information Resource for Atrial Fibrillation

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16th YEAR



Welcome to the belated release of the Aug/Sept issue of our newsletter. I trust that most of you, if not all, are aware of the exciting web redesign project now underway. As noted in this same editorial space in our last June/July issue, the added demands required before we are ready to launch the new website (targeting late Spring early Summer 2016), will cause some unavoidable delays in publishing each issue of the newsletter during this gestation period. Again, I want to express my appreciation for everyone's understanding and patience as we work to bring what we hope to be an even easier to use and more enjoyable online resource for us all.

In this issue, we start by looking at the first of two more extensive and relevant reports on topics of real interest to many of our readers. As a resource dedicated for Lone AFIB (LAF) since our inception, the first review looks at the current utility of the term LAF, and if it might not be due for a revamp and modernization itself. There is a growing consensus that the strict definition of LAF is increasingly harder to support without expanding its definition to include major improvements in diagnostic discovery. Certainly, compared to the 1950s and 60s when the term first came into being. There is no debate that AFIB does, indeed, appear for some in the absence of detectable evidence of cardiovascular/pulmonary disease, but the scope and scale is under review across the cardiology and EP worlds. As such, we examine this debate here for the first time, with more such reports on this topic in upcoming issues.

Next up, is the long-awaited randomized-controlled trial ... The BELIEF Trial on Empirical LAA Isolation added to extended PVAI plus Non-PV trigger ablation for Long Standing Persistent AFIB patients, from one of the largest AFIB research centers under the guidance of Dr. Andrea Natale. As such, with the large number of our readers who have either had some variant of this comprehensive ablation method, or may be candidates for such a procedure, we take an in-depth look at this welcomed longer-term ablation study of such importance for many of us. And review the outstanding results achieved for this most difficult class of afibbers to treat by any method.

The third and fourth study reports in this issue are shorter summaries; the first of which addresses a well known topic dear to us, out of the famed epidemiological research center at Karolinska Institute. With a look at 'Combined Impact of Healthy Lifestyle Factors on AFIB Risk: A prospective study of men and women'. This well-done population investigation speaks to the value of taking care of one's health with proactive life-style improvement programs and good habits, first and foremost, and in this case focused on the preventative role adopting healthy overall life style habits can have in lowering the odds of AFIB.

The fourth review excerpts a 2014 report from Medscape News, summarizing two key studies on using advanced real time AFIB detection methods for AFIB underlying cryptogenic strokes (strokes with no obvious origin). With the big advances in recent years by non-invasive and mildly invasive (under the skin) AFIB detection devices, we are seeing far more AFIB connected strokes than recognized until now.

Finally, we end this issue with a word of appreciation to Dr. DJ Lakkireddy and his assistant Donita Atkins, for the invitation and recognition of our website, forum and newsletter and our efforts at patient education and support at the recent annual Global Alliance for AFIB weekend event in Kansas City.

Wishing you all good health and unbroken NSR!
Shannon

Lone AFIB: Is There a Rationale (Still)?

MAASTRICHT, NETHERLANDS. How appropriate that we start this new issue with a comprehensive investigation of '**Lone Atrial Fibrillation**' (**LAF**), and the debate about the terms current role and place in the modern evolving landscape of overall AFIB and cardiovascular risk factor research.

After all, the foundational focus of this newsletter and website has been to explore, better understand and treat LAF primarily, and by extension non-LAF as well. Lone AFIB is variably defined as AFIB appearing in the absence of any detectable cardiovascular/pulmonary disease markers such as CVD, hypertension, heart failure, DVT and valvular heart disease. Alas, both the definition and contributing influences have not been defined with any consistency over the many years, resulting in enormous variation in the way the term is used. Naturally, then, study results on LAF also vary considerably over time from the variable definitions, inclusions and exclusions used in various research over the years.

The authors of this investigation performed a systematic search of the PubMed database to document all reported LAF risk factors, triggers, predisposing factors and pathogenic influences from over 95 separate randomized trials, studies, and editorials. And a growing number of these risk factors and influences having been discovered over the past number of years ... long after the original definition of LAF had first been laid out starting back in 1953 when the concept of lone AFIB as a separate class of the condition with its own distinct etiologies first arose in cardiology.

With the increasing list of predisposing risk factors and pathogenic influences recognized over the last decade or two, researchers increasingly are calling into question the utility of the term LAF, and if it should still even be used. It's not so much a debate about the existence of LAF as the absence of discernable documented cardiovascular risk factors, but rather the impression that on the one hand, its increasingly less common to find true LAF cases in which some occult predisposing CVD or pulmonary risk factors cannot be found with more advanced imaging and testing methods currently available.

And secondly, that even if one accepts the definitions of LAF as a distinct entity, the actual recommended treatment of it does not vary much these days from front line recommendation for non-LAF, in any event. This is especially true now that addressing life style risk factors and cardiovascular risk factors is coming to the forefront of overall recommended AFIB treatment along with drugs and ablation therapy.

Nevertheless, I and some other EPs feel that it might still be premature to begin banging in the last nail in the lid of the LAF coffin, and that there is still evidence, even if in lesser numbers than we once thought, for this stand alone diagnosis. So let's examine just a few of the issues driving this movement to lessen the diagnosis of LAF across all afibbers world-wide.

Drop the term entirely or expand the definition of LAF?

The authors argue that considering the term LAF is used so inconsistently across the world-wide archive of literature on the subject over the last 63 years, and that when even two of the most often cited markers for confirming LAF... being under the age of 60 and the absence of hypertension ... are themselves both so capriciously applied in different studies, with the age limit frequently either ignored or adopted in various reports, and with wide ranges of systolic/diastolic levels accepted as cutoff points for defining HT in different LAF research; it simply muddies the water too much for comfort.

As such, the authors make a compelling argument that to base decisions about etiology and possible treatment for LAF on such shaky ground is harder to support now as we carefully cull through the extensive LAF literature, and note that the rates reported and outcomes of true LAF can seem much less assured than in a simpler time when a smaller handful of characteristics were assumed to apply to a more homogenous cohort than appears supportable both today, and in hindsight.

“Results concerning etiology in different studies are often contradictory, and yet, the overall finding is that LAF etiology is quite extensive and is associated with many risk factors and triggers. Nevertheless, in spite of this fact, the authors point out that compared to non-LAF there are no unique mechanisms related solely to LAF that can’t also be ascribed to one degree or another to various stages of non-LAF.

Thus, considering these facts the first question that arises is: **is LAF (still) a real and useful (stand alone) entity?** Again, the basis of this question does not deny the presence of AFIB without discernable cardiovascular risk factors, especially in ‘relatively’ younger folks, though not exclusively in younger folks who typically are well below 60 years age at diagnosis.

As such, with the extensive developments in medical knowledge and our vastly increased diagnostic prowess over the last 63 years, it’s little wonder why the ranks of those diagnosed accurately now as true LAF’ers after robust efforts at detection of underlying, and initially often occult, cardiovascular risk factors are far lower than might have been the case in the early years. Certainly, when the effort at accurate diagnosis and assignment of this moniker was not so variable and questionable as it is today when, for example, certain micro-vascular findings might nix a strict LAF diagnosis straight away as only one of a number of scenarios currently that could not have been dreamed of in the 1950s and 60s.

Seen in this light, the main concern by the authors and a rapidly growing number of cardiologist, EPs and cardiovascular researchers, is that: “the term LAF is simply not practical anymore (as it once may have been) due to the insights of medical evolution and diagnostic possibilities”.

On the other hand, it’s important for those of us so long used to seeing the AFIB world with LAF and non-LAF dividers, to realize that little to nothing really changes in our practical dealings with AFIB (by whatever name) due to such a potential change in terminology. Or at least, by expanding and better defining what we mean by LAF to be more inclusive.

As noted by the authors: “If we believe in the phenomenon of LAF in the year 2015 (i.e. an electrophysiological phenomenon on its own, without any other anomalies) the term should then be re-defined. This re-definition could be an expanded and modified version of the current definition. Furthermore, an important modification would be that LAF is an age-dependent phenomenon. And most importantly, the definition and strict diagnosis of LAF cannot be indefinite, as the list of triggers and risk factors will very likely expand overtime and often morphing from a putative LAF into non-LAF down the road.

This later point is especially true when a more loosely assigned original LAF diagnosis misses subclinical signs of cardiac or vascular issues in the early days of AFIB, only for the patient and possibly physician to go on ignoring looking for these issues while resting easy within a fixed idea and sense of LAF. And all the while the patient progresses into full-blown cardiac disease-mediated AFIB.

Indeed, many of the more recent and sensible treatment protocols being proposed and followed these days for all forms of AFIB, be they via advanced ablation methods and/or combined with more in-depth search for risk factors we can mitigate ... often via life-style risk changes, weight loss and dietary improvements and, when needed, certain supporting drugs as appropriate etc. ... are universally applicable regardless of the distinction between LAF and non-LAF.

Long time readers of *The AFIB Report* will see that rather than dropping the practical measures that LAF patients have benefited from over the years, that this evolution in understanding of LAF and non-LAF encompasses pretty much the core comprehensive message and protocols recommended on our website and newsletter for effective treatment and long term AFIB abatement, by whatever name.

The authors advise, too, that the definition and strict diagnosis of LAF in each person must periodically be re-evaluated using sophisticated imaging and diagnostic methods to stay current with the patients often changing landscape of AFIB, while possibly being more responsive and proactive toward treatments such as an ‘expert ablation process’ at the right time to keep the progressive nature of the beast under wraps as long as possible for any given individual manifestation of the disease.

In other words, it may often be more appropriate to view what might be deemed early LAF as a somewhat tentative diagnosis of exclusion and not a fixed permanent label. And thus, for many afibbers we can assume an original LAF indication may very well represent an early occult stage of gradually progressive non-LAF going forward. Not everyone to be sure, but the majority of those deemed LAF earlier in life may well earn non-LAF status later on. In short, it's typically a progressive life long condition, regardless from where we start and we need to bring all the best tools to our disposal to increase our chances of a cure-like restoration of NSR in a sustainable fashion.

Vroomen, M & Pison, L et al, Lone Atrial Fibrillation: Risk Factors, Triggers and Ablation Techniques. The Journal of Atrial Fibrillation. June/July 2015. Vol. 8/ Issue 1

Editors comment: The two Dutch authors of this study, *Drs. Vroomen and Pison*, underscore that: “the term LAF is not well defined nor consistently applied. LAF’s associated etiology is extensive with many factors that can trigger the presence of AFIB. Nevertheless, compared to non-LAF, there is no unique mechanism related to LAF alone. Especially when considering the presence of risk factors that may be occult at time of diagnosis, but which can become clinical over the years.”

It appears increasingly likely that LAF, as a diagnosis of exclusion, is often not be a fixed invariable condition after all. Rather, LAF likely reflects an early precursor manifestation of perhaps unrecognized subclinical cardiovascular changes that often progress to increasingly detectable disease over time as the condition moves beyond the strict definition of LAF to non-LAF... or just good ‘ole AFIB, if you will.

Such a change in terminology for a publication based, in part, on exploring the etiology and treatment of LAF is not a loss, but progress. Especially when the very same practical issues of understanding and treating LAF dovetail so smoothly with understanding and treatment of non-LAF too, via our recommended staged program. A program that first recommends adopting individually appropriate conservative life-style and cardiovascular risk factor modification (RFM) methods, and adding an expert catheter ablation process to the equation only when, and if, the prior efforts provide anything less than near total restoration of sustained NSR after a maximum of a full year of dedicated RFM. The science evolves; and just as the term ‘LAF’ as we have previously known it may be in need of a revamp, so too, definitions like ‘paroxysmal’, ‘persistent’ and ‘LSPAF’ will no doubt evolve to more targeted and descriptive terms as well, that better define future practical understanding and treatments.

The BELIEF Trial – LAA Isolation for Long-Standing Persistent AFIB

NEW YORK CITY, AUSTIN, SAN FRANCISCO, KANSAS CITY, LA JOLLA, FOGGIA ITALY. For our second report in this issue, we take a look at an impressive international multi-center randomized controlled trial (RCT) by the largest AFIB ablation research center in the world looking at a cutting edge ablation protocol that many of our readers either have had some variation of, or may be candidates for in the near future. Thus, this review is a relevant summary for many in our group.

It concerns the long-awaited BELIEF RCT comparing a standard extended PVAI ablation protocol plus non-PV triggers extended ablation phase and empirical LAA isolation assigned to half of a cohort of 173 long-standing persistent AFIB patients (LSPAF) ... the most challenging class of patients to treat by any means. This trial was recently presented at the annual 2015 ESC Congress held this year in London as one of a small number of key presentations at the Congress selected for the prestigious ‘Hot-Line’ presentation status. An honor only offered to those few RCTs each year deemed the most important topics and solid studies by a committee of respected Cardiologists and EPs, and not by random choice.

BELIEF Trial Background

A number of prior studies have shown that in addition to the core step of a PVI/PVAI anatomical ablation set used for all types of AFIB ablations, other non-PV areas can also be the source of initiation and maintenance of AFIB in patients. This can be true for paroxysmal, persistent and LSPAF class of patients, though typically with a progressive increase in the areas and number of such non-PV trigger

sources that are found, as underlying structural remodeling changes and constancy of arrhythmia progress over time toward persistent and LSPAF.

The most common of these non-PV trigger sites discovered and confirmed by a number of the largest ablation centers in the world are: the posterior left atrial wall, superior vena cava (SVC), ligament of Marshall, coronary sinus (CS), left atrial appendage (LAA) and crista terminalis. Failure to detect and address such active non-PV sites or focal triggers most often leads to failure of the procedure. And until properly and successfully addressed, ignoring such elephants in the room will typically set the afibber up for on-going arrhythmia and continued increased remodeling as well as additional repeat ablations often required until finally dealt with one way or another.

A previous carefully done 5-year outcome study of LSPAF ablation patients from Hamburg used an unusual PVI-based protocol followed by cardioversion (ECV) and if ECV was unsuccessful, then extended ablation with linear lines and/or CAFEs was added. Single ablation freedom from AFIB was only 20% at 5 years while multiple procedures needed during the 5 years resulted in a net 45% freedom from AFIB. Definitely better than untreated LSPAF, but still leaving room for improvement in this most difficult class of patients that the vast majority of ablationists still would not even offer an ablation too.

A number of previous studies, including a seminal work published in 2010 in *Circulation* by the same investigators behind the BELIEF RCT, revealed that the left atrial appendage (LAA) was an under-recognized source of AFIB triggers¹. This large prospective study examined 987 consecutive ablation patients (29% paroxysmal and 71% non-paroxysmal) returning for repeat ablation and found that 266 (27%) of this group showed firing from the LAA. In addition, 87 (8.7%) of the 987 total showed 'only' LAA firing with no PV or extra-PV reconnection sites found. Of this later group, 5 were paroxysmal and 81 non-paroxysmal, indicating the progressive increase of LAA firing with progression of the disease state.

Having clearly established LAA triggering as a significant and long-ignored player found with relative frequency in more advanced AFIB cases, this group sought to conduct a long term RCT of LSPAF patients with the aim to assess whether empirical electrical isolation of the LAA in addition to extensive PV antrum and non-PV triggers ablation could improve freedom from AFIB and AT (atrial flutter/tachycardia) at 2 year follow up in a multicenter RCT.

A total of 173 LSPAF patients were randomized in a 1:1 split in to two study arms. Group 1 (n=85) was assigned a Natale method standard extended PVAI plus non-PV triggers ablation plus empirical LAA isolation during the index ablation. Group 2 (n=88) underwent Natale standard extended PVAI plus non-PV trigger alone with no LAA isolation in the index procedure.

Results and safety

After the single index procedure, follow up was assessed at 12 months and repeat ablations were needed in 62 total. Such a redo ablation included either a touch up, or a first LAA isolation in both groups, respectively (27 in Group 1 and 35 in Group 2). The final endpoint freedom from all arrhythmia and off all AAR drugs was assessed at 24 months. Of the 173 total LSPAF patients in the trial, the average number of procedures after 2 years was 1.3 per person.

At 12 month follow-up after a single procedure, 48 (56%) in Group 1 and 25 (28%) in Group 2 were both free of all arrhythmia recurrence and off all AAR drugs. At the 24 month study endpoint, all follow up ablations had entailed either a repeat or initial LAA isolation (along with any other touch up areas required for each patient). Again, follow-up procedures were performed on 36% (n=62) of the total 173 LSPAF patient cohort.

Cumulative overall success rate after an average of just 1.3 procedures at 2 years with freedom from all arrhythmia and off AAR drugs defining success ... Group 1 achieved 76% (n=65) and Group 2 scored

¹ DiBiase L et al. Left Atrial Appendage: An under-recognized trigger site of atrial fibrillation. *Circulation*. 2010 Jul 13;122(2):109-18 <http://dx.doi.org/10.1161/CIRCULATIONAHA.109.928903>. Epub 2010 Jul 6.

56% (n=49). This represents a major leap in success rate compared to any previously known catheter ablation (CA) method in treating LSPAF patients; the most challenging class of AFIB that represents, in effect, the metastatic cancer of electrophysiology.

Looking at the procedural safety profile of this advanced ablation protocol was equally impressive. Something we can verify in our long anecdotal experience on the forum as well with a good number of advanced afibbers who have benefited from the same, or very similar, extended protocols with some variation of this method over time. In our extensive experience with this general approach, we have seen remarkably few significant complications reported overall, especially considering the most challenging nature of this class of AFIB being addressed. And even fewer enduring complications that lingered over time.

No deaths were reported from the BELIEF trial, no fistulas, no strokes or TIA in the Group 1 with LAA isolation plus standard extended PVAI. There was an unusual anomaly of 4 strokes (4.5%) reported from the Group 2 standard extended PVAI alone, however these 4 strokes all happened in patients on OAC drugs who had demonstrated poor compliance in taking their blood thinners during the trial period, including after having had LAA isolation. A clear explanation for what would otherwise seem a highly uncharacteristic and odd ball stroke stat. Especially from this large group who have set the standard for remarkably low stroke/TIA risk below 1% over a large number of prior ablation studies published.

There was one pericardial effusion in each of the two Groups, and both readily resolved with responsive anti-inflammatory treatment. One patient from the non-LAA isolation Group 2 also had a GI bleed, likely as a response to anticoagulation, which was also resolved.

Conclusion

The results of this randomized study show that after both single and redo procedures in LSPAF patients; empirical LAA isolation significantly improves long-term freedom from atrial arrhythmias without increasing complications. The authors noted as well that as the first such RCT on LAA isolation, future studies will be needed to further elucidate the physio-pathological aspects of these important findings.

Overall, BELIEF trial is an impressive and groundbreaking report offering real encouragement for not only patients with LSPAF, but also for a smaller number with advanced paroxysmal AFIB and a fair number with persistent AFIB who may also have LAA firing driving their on-going battle with the beast; albeit to a progressively lesser extent than do these typical LSPAF patients in the BELIEF study.

*Di Biase L, Burkhardt JD, Mohanty P, et al. **Effect of empirical left atrial appendage isolation on long-term procedure outcome in patients with long-standing persistent atrial fibrillation undergoing catheter ablation: Results of the BELIEF randomized trial. European Society of Cardiology 2015 Congress. August 30, 2015; London, UK. Abstract 2188.***

Editors comments: The BELIEF RCT findings are most welcome for sharing encouraging hard data and confirming insights into this cutting edge and, up until now, controversial addition of LAA isolation to the toolkit of advanced AFIB ablationists. At least, for those who possess the skill and motivation to address demands beyond a straight forward anatomical PVI alone. And in so doing, such EPs can now offer real hope and relief to a relatively large number of afibbers with more advanced disease. Often with less overall ablation burden required to achieve a durable freedom from arrhythmia compared to the multiple repeat ablations often needed by such advanced afibbers when the elephant in the room (LAA triggers) remains unrecognized or is continually ignored in each subsequent redo ablation.

A 76% freedom from all arrhythmia and off all AAR drugs at 2 years after just 1.3 procedures for LSPAF class patients is a feat most EPs, and patients too, heretofore deemed unrealistic by any approach.

Certainly, more studies will be needed to better define the key issues and best practices around extended protocols incorporating LAA isolation going forward. Nevertheless, the robust level of success shown in this study should be highly motivating and inspire funding for such research for this poorly

served class of patients. Not to mention, those with often symptomatic advanced paroxysmal and persistent AFIB who also suffer from LAA driven triggering and who might also benefit as well.

A fact that a growing number of our forum readers are living testaments too, including myself now at 7+ years freedom from a highly aggressive and symptomatic persistent AFIB, and having no arrhythmia of any kind now after having had this very same procedural protocol, including LAA isolation, in a 2 part expert ablation process that began in 2008.

The one known impact with LAA isolation that must be considered and understood up front is the 60% to 70% chance of having a decreased LAA mechanical function as a result of a fully successful LAA electrical isolation. When this occurs, one's LAA emptying velocity plus Doppler A-wave measurement into the mitral inflow must remain robust and consistent enough to allow possibly stopping OAC drugs.

This factor is also why LAA isolation is reserved only for those with more significant atrial disease who are found to have defined LAA triggers and whose arrhythmia is either strongly driven by this source, or in some cases, for whom the LAA remains the only source of triggers post-PVAI during index ablation.

For the majority of such cases, going for the LAA isolation when it is deemed advisable remains the best chance to actually gain freedom from OAC drugs, as at least is possible for some of the 30% to 40% who sustain adequate LAA mechanical function and emptying velocity at a required 6 month post LAA isolation TEE scan. To be sure, it is imperative that OAC drugs only be stopped at all (and no sooner than 6 months post LAA isolation), when, and if, clear evidence of sufficient and consistent remaining LAA mechanical function has been established and no CHADS2VASc risk scores remain ≥ 2 .

The bottom-line here, is that for the vast majority of afibbers whether with persistent AF (and certainly with LSPAF) whose structural remodeling has progressed to the point where LAA triggers are a key driver of their arrhythmia; it is exceedingly unlikely that such patients will be able to avoid long term OAC therapy. Even those who may initially have low stroke risk scores of 0 – 1 will almost certainly require ongoing OAC therapy sooner or later, so long as active LSPAF casts it's long shadow over their lives.

New mechanical LAA closure devices and procedures are on the verge of likely FDA approval as well, and others are undergoing ongoing evolution, such that many of those who must address life long anti-coagulation due to LAA mechanical insufficiency might still be able to safely avoid taking those drugs after all. Including those with low LAA velocity who are nevertheless enjoying the blessing of pure NSR from such a successful advanced ablation process.

Combined Impact of Healthy lifestyle factors on AFIB risk: Prospective study in men and women

STOCKHOLM, SWEDEN. Once again from the famed Karolinska Institute in Sweden, renowned for their valuable population-based health and epidemiology studies, we share a new report summary examining the impact of healthy lifestyles on long-term development of AFIB ... right up our alley.

As noted in previous reviews from this institute in *The AFIB Report*, what makes their data so robust and useful for such extended population investigations is Sweden's homogeneous and carefully maintained health record database on nearly all of its citizens. Such a reliable data source greatly helps minimize the impact on outcomes and results derived from that data compared to less well-documented sources.

This prospective study's aim was to investigate the impact of multiple lifestyle factors on incidence of AFIB by looking at four generally modifiable lifestyle factor choices. Combined data from two prospective cohort studies were used, including 39,300 (aptly named 'Cohort of Swedish Men') and 33,090 women (from Swedish Mammography Cohort) with an age range of 45-83 years and free of AFIB at baseline during a mean follow-up of 10.9 years.

The four healthy lifestyle factors used in this study were Body Mass Index (BMI ≤ 25 kg/m³), regular exercise ≥ 20 minutes/day, no or light-to-moderate alcohol consumption (≤ 2 drinks/day for men and ≤ 1 drink/day for women), and absence of smoking. And when combined were deemed healthy lifestyle factor living. Incident AFIB was identified through linkage with the Swedish National Inpatient Register. In addition, further gradation of AFIB risk by lifestyle factor was noted based on just one, two, three or all four of these healthy factors being adopted by given subgroups of these cohorts over a 10.9 year period.

Healthy lifestyle scores were generated by dichotomizing each lifestyle factor into a predefined healthy lifestyle alternative and a less healthy behavior... for example: BMI (<25kg/m³ versus ≥ 25 kg/m³ [overweight]): regular exercise during last year defined as walking or bicycling at least 20 min/day versus <20 min/day: alcohol consumption - no or light to moderate [≤ 2 drinks/day men & ≤ 1 drink/day women] versus high consumption): and not smoking [never & past] versus current smoking). Participants were followed from January 1, 1998 until either date of AFIB diagnosis, death (ascertained via linkage to Swedish Death Register) or end of follow-up on December 31, 2009, or which ever came first.

Results

Over the follow up period of 10.9 years, 4,028 men and 2,539 women were diagnosed with AFIB. In both sexes, the risk of developing AFIB over this time period decreased in a dose-response manner with increasing number of the four healthy lifestyle factors adopted, as defined in the study.

Compared with men and women with none of the four healthy lifestyle habits, those who incorporated all four healthy factor into their routine lives had a 50% (95% CI [36% to 61%]) lower risk of developing AFIB over this prolonged period after adjustment for other risk factors. Of note too, the association between a healthy lifestyle and AFIB was not modified by a history of cardiac disease (P for interaction = 0.39).

The four lifestyle factors are inter-related and did not contribute equally to the observed inverse association between the lifestyle score and risk of AFIB. Of these modifiable healthy lifestyle choices, BMI <25kg/m³ had the largest impact on reduction of AFIB risk, which comes as no surprise to our readership. And as discussed here many times previously, exercise has more of a U-shaped curve, with both little to no exercise, and far too long and intensive exercise, at either end of the 'U' associated with increased risk for AFIB ... the sweet spot of moderation rules; such as regular long walks and biking.

Regarding alcohol, a meta-analysis from this same group summarized in a recent issue of our newsletter showed a positive association of alcohol intake and increased risk of AFIB in a dose-response fashion, with an 8% increase in AFIB risk for each 1 drink/day increase in consumption. While smoking has been shown to be a modifiable risk factor for heart attacks (MI) and stroke, interestingly, the present study found no association between smoking and AFIB risk.

Larsson, SC, Drca, N, Jensen-Urstad M, Wolk, A. *International Journal of Cardiology*. 2016/203; 46-49 <http://dx.doi.org/10.1016/j.ijcard.2015.10.106>

Editors comments: By now its old news that adopting a healthy life-style can be a key step toward minimizing the chance for developing AFIB. This study highlights a possible reduction of AFIB risk of up to 50%. And a growing list of centers around the world have shown that adopting risk factor management (RFM) can help reduce overall AFIB burden too, even for many of those for whom prevention of AFIB remains too tall an order even for dedicated RFM to achieve alone. All of which underscores our long time mantra of first adopting appropriate healthy lifestyle choices, and if anything less that near total control of AFIB is achieved in a maximum of one year of devoted effort, then by all means add in an expert ablation process to the equation for best outcome.

AF Detection and Cryptogenic Stroke

MEDSCAPE MEDICAL NEWS. Our last review of relevant studies in this issue summarizes two important complimentary investigations looking at high detection rate methods for AFIB with prolonged electrocardiography (ECG) monitoring in patients who have had cryptogenic strokes; defined as strokes with no clear origin based on typical 'standard of care' shorter-term evaluation. Excerpts are as reported by Sue Hughes of Medscape News. While Ms. Hughes' report on these studies dates from June 25, 2014 edition of Medscape News online, nonetheless it is just as timely and important now.

In essence, both studies, including the 30-Day **Cardiac Event Monitor for Recording AFIB after Cerebral Ischemic Event (EMBRACE)** trial and the **Cryptogenic Stroke and Underlying AFIB (CRYSTAL-AF)** trial, seek to better define the long-assumed association between cryptogenic strokes and underlying undiagnosed AFIB that most cardiologist and EP's have taken for granted for years as an obvious connection, but until recently has been poorly detected and documented.

The *EMBRACE* trial tested a non-invasive external device with electrodes built into a belt worn around the chest for a month, according to Medscape News' report. They found a 16% AFIB incidence over just 30 days. This, compared to just 3.2% AFIB detected among the control group via the typical standard 24-hour Holter monitoring most such stroke patients receive. And before being assigned to either arm of the study, all participants underwent 24-hour Holter monitoring with no AFIB detected in any participant. The highest detection rate for AFIB, equaling 75% of the total, was in the first two weeks of detection.

CRYSTAL-AF trial was a randomized-controlled trial looking over much longer time frames via ICM (insertable cardiac monitor) while comparing results with conventional follow-up in patients with recent cryptogenic stroke. Those cryptogenic stroke patients with ICM monitoring had significantly higher rates of AFIB detected; and with greater use of OAC drugs and thus with fewer patients having a subsequent TIA than in the conventional follow-up patient group.

Detection rates of AFIB were 8.9% at 6 months versus 1.4% of control patients, 12.4% had AFIB detected by 12 months, and 30% over 3 years of ICM implanted ECG monitoring.

The higher relative detection rate with *EMBRACE* trial likely had to do with the older population study group compared to *CRYSTAL-AF*, according to Dr. David Gladstone of University of Toronto. And Dr. Hooman Kamel at Weill Cornell Medical College in New York told Medscape News' Ms. Hughes that: "The weight of current evidence suggests subclinical AFIB is a modifiable risk factor for stroke recurrence, and it's presence should be thoroughly ruled out in high risk populations. Therefore, cryptogenic stroke or TIA patients should undergo at least several weeks of rhythm monitoring." Advice that seems very prudent, indeed.

Of interest, too, is that during longer term ICM monitoring, the rate of detection did not plateau over time, according to Dr Gladstone: "... so we would have found even more (AFIB) patients if we continued monitoring longer, and this is exactly what the *CRYSTAL-AF* study found."

Dr Gladstone advocated a stepped approach to monitoring, moving from less invasive with 30-day - 24/7 devices similar to that used in *EMBRACE* or Zeo-Patch, to more costly and invasive methods if AFIB is still not detected at 30 days in patients with a high suspicion of underlying AFIB behind their CVA.

Medscape News June 25, 2014, AF Detection Should Take Priority After Cryptogenic Stroke, Sue Hughes

Editors comments: With the advent of more effective and easy to use longer term ECM devices like the non-invasive Zeo-Patch and 'under the skin' LINQ for on-going AFIB monitoring, stroke rates attributed accurately to AFIB will surely rise significantly, and thus more patients will be offered earlier intervention. While some will assume that mostly the OAC makers will be the big beneficiary here; note too, the patients who may better avoid strokes after confirmed on-going AFIB who also have cardiovascular risk scores high enough to warrant anti-coagulation in the first place.

I envision a real benefit as well, from encouraging more folks with previously undetected AFIB to become good candidates for abatement and even elimination of their AFIB via combined life-style risk factor management and, when RFM proves insufficient, adding the often critical step of an expert ablation process for truly improving afibbers lives for the long term. And not simply keeping the fingers in the dyke of ongoing AFIB via anti-coagulation alone ... even though that too, could save many lives over time if, and when, OAC therapy is carefully applied and not overused in cases that don't call for it based on well-established stroke risk guidelines.

An Expression of Thanks

I would be remiss in closing this belated August/September 2015 issue of our newsletter without expressing my sincere gratitude to renowned EP and expert AFIB ablationist, Dr. DJ Lakkireddy and his very able assistant, Donita Atkins, of the highly respected University of Kansas Heart Rhythm Center, for inviting me to attend the annual Global Alliance for Atrial Fibrillation (GAFA) AFIB awareness celebration in Kansas City on this most recent second weekend of September.

Being selected as this years 'Patient Advocate Ambassador for AFIB 2015' by GAFA, I had the pleasure to share during a talk to a large group of EPs, cardiologists and regional afibbers at the dinner event, a summary of my nearly quarter century experiences of dancing with the beast of AFIB. The group gathered for the event and to honor, very appropriately Dr. Andrea Natale, who was selected this years 'Physician Ambassador for AFIB'. Dr. Natale also gave an interesting talk about recent advances in AFIB treatment and ablation insights. A 5K Fun Run the next day brought a good crowd of physicians, staff and local afibbers to raise public awareness of the AFIB epidemic.

This award really represents all of us who frequent the forum at afibbers.org, and for all subscribers to this newsletter, who collectively sustain the spirit of caring and support for every afibber who is lucky enough to find our little oasis in the AFIB universe. And foremost, to Hans and Judi Larsen for their many years of effort at creating and nurturing these wonderful AFIB resources into among the best and most valuable on the web. A sentiment shared by Dr. Lakkireddy who noted that our forum, website and newsletter represented the real 'myth-busters' of solid, reliable and insightful AFIB information available online. I was pleasantly surprised too, how well known our presence was among not only some of the local afibbers, but among some of the regional EPs attending.

It was a real treat for me to enjoy the company of these top tier EPs and great people too, and many thanks, once again, to all who made it happen and support this worthy event each year!

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