KATHY BERRA, MSN, NP-BC, FPCNA, FAHA, FAAN

# Atrial Fibrillation: an Emerging Epidemic

**ATRIAL FIBRILLATION (AF)** is the most common cardiac arrhythmia in the United States (US) and is one of our most challenging health conditions. AF affects between 0.4% and 1% of the general population and prevalence increases dramatically as the population ages.[1-4] It is estimated that 1% of adults <60 years of age and up to 12% of adults between the ages of 75-84 have AF. In 2030, there will be about 72.1 million persons over the age 65, representing 19% of the US population.[5]

The American Heart Association estimated that in 2010 there were ≈2.7 million to 6.1 million cases of AF. The incidence of AF is expected to increase by between ≈5.6 and 12 million by 2050.[6]

AF is strongly associated with age, gender, race and the presence of cardiovascular disease. In the Medicare population, numerous chronic conditions are associated with the incidence of AF. These include hypertension, obesity, diabetes, chronic kidney disease, hyperlipidemia, heart failure, valvular heart disease, chronic obstructive pulmonary disease, and Type 2 Diabetes.[1,2,4]

Atrial Fibrillation carries a high economic and personal burden to individuals and to society. AF increases the risk of ischemic stroke by five-fold.[4,7] Persons with AF, especially older individuals are at higher risk for hospitalizations, thromboembolic events, heart failure, dementia and higher mortality than those in sinus rhythm.[4]

Strokes caused by AF are generally more severe, more disabling, and more-frequently fatal than strokes in persons with normal sinus rhythm.[4,8] A systematic review of the economic cost of atrial fibrillation by Wolowacz and colleagues revealed that direct cost ranged from $2,000 to $14,200 per patient year in the United States. Inpatient care was estimated at 40-50% of the annual direct cost of care with total hospitalization cost estimated at $6.65 Billion. The cost for AF is projected to rise substantially with the increasing older population.[9]

Preventing the development of atrial fibrillation is a major challenge. Although many "predisposing factors" are associated with new onset atrial fibrillation, it is estimated that between 3-11% will develop AF without identifiable predisposing factors.[10] Advancing age is the most reliable predictor for the development of AF. Research efforts focusing on preventing AF are clearly needed.

In 2004, Harwell et al. evaluated perceived risk for stroke and knowledge of stroke risk factors in adults over the age of 45 years. They found that < 40% perceived themselves to be at risk with < 50% of those with greater than 3 stroke risk factors perceiving themselves to be at risk.[11] Zerwic et al., in 2007, evaluated how individuals interpreted symptoms for stroke and how this may be related to the delay in seeking treatment. They found that only 60.5% could accurately identify at least one stroke risk factor and only 55.3 % were able to identify one stroke symptom.[12] An important lesson from their study was that inability to recognize non-motor stroke symptoms and not accessing 911 emergency care resulted in a delay to seeking treatment of > 2 hours. This delay represents a greater risk of not receiving life and brain saving therapies and interventions. Language barriers also play a role in lack of knowledge regarding stroke symptoms.[5,13]

## NURSES AND ADVANCED PRACTICE NURSES – A CALL TO ACTION

AF is a common clinical problem with significant morbidity and mortality. Health care providers are being asked to define new ways to positively impact the health outcomes from AF. Get With The Guidelines-AFIB (GWTG AFIB) is a national hospital-based AF quality improvement program. It is designed to increase adherence to evidence-based guidelines for AF and is published by the American Heart Association/American College of Cardiology. This important hospital based quality improvement program will focus on health care provider initiation of guideline recommended optimal therapies. Patient education and patient support is the foundation GWTG AFIB. Nursing will play a critical role in this important healthcare initiative.[14]

The AHA/ACC and the Heart Rhythm Society, and in collaboration with the Society of Thoracic Surgeons, jointly published the most comprehensive evidence based guideline to date on AF, superseding the 2006 document.[14] This 2014 Guideline is based on science from published studies as well as other related guidelines and statements many from national and international professional societies. The authors stated in their introduction: "Because lack of patient understanding and adherence may adversely affect outcomes, clinicians should make every effort to engage the patient's active participation in prescribed medical regimens and lifestyles. In addition, patients should be informed of the risks, benefits, and alternatives to a particular treatment and should be involved in shared decision making whenever feasible."[15] This is another call to action for nursing as our roles include the initiation of recommended therapies supported by comprehensive patient centered education.

Given the enormous impact of AF on individuals and on society, the World Heart

Federation (WHF) created the Global AF Action (GAFA) campaign. This international campaign is designed improve the diagnosis and immediate care of patients with AF. This campaign includes educational materials for the public and for primary care providers and can be accessed at: http://www.world-heart-federation.org/what-we-do/awareness/atrial-fibrillation/tools-materials/toolkit-for-members.

October 29, 2013 was World Stroke Day. The "*Sign Against Stroke in Atrial Fibrillation*" supported the Global AF Action campaign. By the 29th of October, more than 500,000 individuals had signed onto the campaign calling for improved education to raise awareness of the signs of AF, earlier diagnosis of AF, and improved access to appropriate AF care. International efforts that will increase awareness of AF calls for increased efforts by nurses to initiate guideline based treatments and provide education for patients and their families regarding the prevention and management of AF. Given the identification and treatment complexities associated with AF, education is a critical component of patient care.

In support of the need for educational materials, the Preventive Cardiovascular Nurses Association developed a patient booklet for health care providers to use when counseling their patients with atrial fibrillation. This booklet is literacy appropriate and includes information about what AF is, why it is a problem, usual tests to expect with AF, types of AF, and what patients with AF can do to continue living a full life. Copies of the AF booklet, *The Beat Goes On*, are available free of charge at PCNA.net.

Hendriks and colleagues evaluated a nurse based, guideline adherent, chronic care program (ICCP). They followed 111 patients assigned to the ICCP group compared to an historical control group and concluded that "a nurse-driven, guideline based ICCP program for AF patients was feasible." Their results showed that the average number of patients who were treated based on guideline recommendations was 96% in the ICCP group compared to 70% in the control group ($p<0.001$). Hendriks and colleagues followed their initial evaluation with a larger study of 712 patients with AF who were randomly assigned to nurse-led care (ICCP) versus usual care. They found a significant reduction in hospitalizations and cardiovascular mortality in the nurse-led program versus usual care. In addition, they found that guideline adherence was also significantly better within the nurse-led ICCP program.[16,17] These results support the critical role of nursing in the management of AF. It is our job to work with our medical colleagues to incorporate guideline-based evaluation and care for all persons at risk for and with AF.

The goal of this special issue of the *Journal of Cardiovascular Nursing* is to provide you with a detailed summary of "*Evidence-Based Care for the Patient with Atrial Fibrillation: A Call to Action for Nurses and Advanced Practice Nurses.*" ■

## REFERENCES


1. Go AS, Hylek EM, Phillips KA, et al. Prevalence of diagnosed atrial fibrillation in adults. National implications for rhythm management and stroke prevention: the Anticoagulation and Risk Factors in Atrial Fibrillation (ATRIA) Study. *JAMA*. 2001;285:2370–2375.
2. Fuster V, Rydén LE, Cannom DS, et al. 2011 ACCF/AHA/HRS focused updates incorporated into the ACC/AHA/ESC 2006 Guidelines for the management of patients with atrial fibrillation: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines developed in partnership with the European Society of Cardiology and in collaboration with the European Heart Rhythm Association and the Heart Rhythm Society. *J Am Coll Cardiol*. 2011 Mar 15;57(11):e101–e198.
3. Naccarelli GV, Varker H, Lin J, Schulman KL. Increasing prevalence of atrial fibrillation and flutter in the United States. *Am J Cardiol*. 2009;104(11):1534–1539.
4. January CT, Wann LS, Alpert JS, Field ME, Calkins H, Murray KT,Cleveland Jr JC, Sacco RL, Cigarroa JE, Stevenson WG, Conti JB, Tchou PJ, Ellinor PT, Tracy CM, Ezekowitz MD, Yancy CW, 2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation: Executive Summary, *Journal of the American College of Cardiology* (2014), doi: 10.1016/j.jacc.2014.03.021.
5. Administration on Aging: Aging Statistics. U.S. Department of Health & Human Services. Available at: http://www.aoa.acl.gov/Aging_Statistics/index.aspx.Accessed November 23, 2014.
6. Go AS, Mozaffarian D, Roger VL, et al. Heart disease and stroke statistics—2014 update: a report from the American Heart Association. *Circulation*. 2014;129(3):e28–292.
7. Roger VL, Go AS, Lloyd-Jones DM, et al. Heart disease and stroke statistics—2012 update: a report from the American Heart Association. *Circulation*. 2012;125(1):e2–220.
8. Jørgensen HS, Nakayama H, Reith J, Raaschou HO, Olsen TS. Acute stroke with atrial fibrillation: The Copenhagen Stroke Study. *Stroke*. 1996;27(10):1765–1769.
9. Wolowacz SE, Samuel M, Brennan VK, Jasso-Mosqueda J-G, Van Gelder IC. The cost of illness of atrial fibrillation: a systematic review of the recent literature. *Europace*. 2011;13:1375–1385.
10. Rosiak M, Dziuba M, Chudzik M, et al. Risk factors for atrial fibrillation: not always severe heart disease, not always so 'lonely.' *Cardiol J*. 2010;17(5):437–442.
11. Harwell TS, Blades LL, Oser CS, et al. Perceived risk for developing stroke among older adults. *Prev Med*. 2005;41(3–4):791–794.
12. Zerwic J, Young Hwang S, Tucco L. Interpretation of symptoms and delay in seeking treatment by patients who have had a stroke: exploratory study. *Heart Lung*. 2007;36:25–34.
13 DuBard CA, Garrett J, Gizlice Z. Effect of language on heart attack and stroke awareness among US Hispanics. *Am J Prev Med*. 2006;30:189–196.
14 Lewis WR, Piccini JP, Turakhia MP, et al. Get With The Guidelines AFIB: novel quality improvement registry for hospitalized patients with atrial fibrillation. *Circ Cardiovasc Qual Outcomes*. 2014;7(5):770–777.
15 January CT, Wann LS, Alpert JS, Calkins H, Cleveland Jr JC, Cigarroa JE, Conti JB, Ellinor PT, Ezekowitz MD, Field ME, Murray KT, Sacco RL, Stevenson WG, Tchou PJ, Tracy CM, Yancy CW. 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. *J Am Coll Cardiol* 2014.
16 Hendriks JML, Nieuwlaat R, Vrijhoef HJM, et al. Improving guideline adherence in the treatment of atrial fibrillation by implementing an integrated chronic care program. *Neth Heart J*. 2010;18(10):471–477.
17 Hendriks JML, de Wit R, Crijns HJGM, et al. Nurse-led care vs. usual care for patients with atrial fibrillation: results of a randomized trial of integrated chronic care vs. routine clinical care in ambulatory patients with atrial fibrillation. *European Heart Journal*. 2012;33:2692–2699.