



Favorite Five Articles from Recent Medical Journals

Digoxin Is Best for Atrial Fibrillation

An editorial, **Rate control in permanent atrial fibrillation**, in the November 23, 2007 issue of the *British Medical Journal* by Theodora Nikolaidou came to these important conclusions about the treatment of patients with atrial fibrillation:¹

"In patients with chronic atrial fibrillation, digoxin has been the mainstay of treatment for many years, so new recommendations relegating digoxin should be evidence based and safe. We believe that little evidence exists that monotherapy with β blockers or calcium channel blockers improves exercise tolerance compared with digoxin. On the contrary, there is clear evidence that when β blockers are used alone, exercise capacity may worsen, especially in people with a history of heart failure... We believe that the combination of digoxin and a β blocker or calcium antagonist should be recommended as first line management. We would emphasise that it is safest to start treatment with digoxin first." (To relegate is to assign to an inferior position.)

Comment:

Atrial fibrillation is the most common heart arrhythmia in Western countries and occurs mostly in the elderly. In this condition, the patient sometimes notices an irregular heartbeat that is also often faster than normal. An EKG is used to make the diagnosis. In most cases this arrhythmia does not debilitate the patient and their life goes on normally as before.

There are many controversies surrounding the proper treatment of people with atrial fibrillation. These controversies, like the one discussed in the above article, have their roots in the profits of the pharmaceutical companies. Digoxin is an inexpensive, highly effective, relatively safe, time-honored, generic medication. With the introduction of expensive beta-blockers and calcium antagonists over the past four decades, doctors were told digoxin was inferior for the treatment of atrial fibrillation. But as this article explains, based on the research, digoxin is the drug of choice for this common condition.

When the heart rate is already normal or slow, there is no need for any medication to regulate the heart rate. In most cases, when rate control is needed, I prescribe digoxin first to slow the heartbeat. If this medication alone is inadequate, then I will add a beta-blocker medication. I do not prescribe calcium channel blockers because they are dangerous. (See my November 2004 newsletter lead article.)

I usually do not recommend "cardioversion" with drugs or electric shocks to the heart because research shows this aggressive approach gives results that, at best, temporarily restore normal (sinus) rhythm, and there are significant risks and side effects from cardioversion. My position on this matter is the same as the one held by the vast majority of the published research papers, and used as the guidelines for physicians to practice. For example, the Clinical Practice Guideline from the American Academy of Family Physicians and the American College of Physicians recommends medications to control the heart rate, rather than cardioversion.^{2,3} However, in everyday practice, cardioversion with drugs or shock is attempted shortly after diagnosis in most patients.

People with atrial fibrillation also have an increased risk of forming a blood clot in their heart, which can move to their brain and cause a stroke. Most physicians automatically prescribe a powerful blood thinner called Coumadin (warfarin). Coumadin is expensive—costing \$25 to \$50 for a month of pills, monthly blood tests, and frequent physician visits. The most important complication of this treatment is bleeding. I believe Coumadin therapy is too risky and inconvenient for many patients.

People with atrial fibrillation who are otherwise healthy, should not routinely be given Coumadin; for many, a baby aspirin daily may be a better choice.^{2,4} Patients with atrial fibrillation and valvular heart disease, or risk factors such as stroke, TIA, hypertension, cardiovascular disease or age older than 75 years, have a slightly greater reduction in the risk of stroke with Coumadin, compared to aspirin.⁴ The controversy surrounding the choice of aspirin over Coumadin can be especially important for elderly people who commonly fall, with resulting bleeding. Coumadin therapy also requires frequent monitoring of blood tests whereas aspirin therapy does not. Many doctors will prescribe both aspirin and Coumadin together for patients—this puts the patient at high risk of bleeding with no additional benefits from the combination.⁵ Aspirin plus Plavix (clopidogrel) is no better than aspirin alone at preventing strokes.⁶

The underlying cause of most cases of atrial fibrillation is closure of the small arteries to the heart muscle and nervous tissues, due to the Western diet and lifestyle.⁷ In addition to the judicious use of medications, I always recommend a healthy diet for someone with this condition in order to improve the overall health and reduce the risk for strokes and heart attacks. In most cases, once the rhythm of atrial fibrillation occurs it is permanent and a change in diet will not convert atrial fibrillation to normal rhythm.

- 1) Nikolaidou T, Channer KS. Rate control in permanent atrial fibrillation. *BMJ*. 2007 Nov 24;335(7629):1057-8.
- 2) Snow V, Weiss KB, LeFevre M, McNamara R, Bass E, Green LA, Michl K, Owens DK, Susman J, Allen DI, Mottur-Pilson C; AAFP Panel on Atrial Fibrillation; ACP Panel on Atrial Fibrillation. Management of newly detected atrial fibrillation: a clinical practice guideline from the American Academy of Family Physicians and the American College of Physicians. *Ann Intern Med*. 2003 Dec 16;139(12):1009-17.
- 3) Nattel S, Opie LH. Controversies in atrial fibrillation. *Lancet*. 2006 Jan 21;367(9506):262-72.
- 4) Stern S, Altkorn D, Levinson W. Anticoagulation for chronic atrial fibrillation. *JAMA*. 2000 Jun 14;283(22):2901-3.
- 5) Lip GY. Don't add aspirin for associated stable vascular disease in a patient with atrial fibrillation receiving anticoagulation. *BMJ*. 2008 Mar 15;336(7644):614-5.
- 6) Hart RG, Bhatt DL, Hacke W, Fox KA, Hankey GJ, Berger PB, Hu T, Topol EJ. Clopidogrel and Aspirin versus Aspirin Alone for the Prevention of Stroke in Patients with a History of Atrial Fibrillation: Subgroup Analysis of the CHARISMA Randomized Trial. *Cerebrovasc Dis*. 2008 Feb 27;25(4):344-347
- 7) Heeringa J, van der Kuip DA, Hofman A, Kors JA, van Rooij FJ, Lip GY, Witteman JC. Subclinical atherosclerosis and risk of atrial fibrillation: the rotterdam study. *Arch Intern Med*. 2007 Feb 26;167(4):382-7.

Mad Cow Proteins Detected in Dairy Products

Prion protein in milk by Nicola Frascini published in the December 2006 issue of *PLoS ONE* (Public Library of Science) found prion proteins in Swiss off-the-shelf milk and fresh milk.¹ Prions are the cause of transmissible spongiform encephalopathies (TSE), such as bovine spongiform encephalopathy (BSE) in cattle and humans, and Creutzfeldt-Jakob disease (CJD) in humans. About the same concentration of prion protein was measured for organic farm milk and non-organic farm milk as well as for pasteurized (heating for 30 seconds to 72°C) and ultra-high temperature (UHT) treated (heating for 1–4 seconds to 135°C) milk.¹ Prions were also found in the milk of humans, sheep, and goats.

Comment:

Prion protein is the agent that causes mad cow disease in cattle, people, deer, sheep, and many other animals. These infectious proteins accumulate for years before illness appears. Transmission from food

to people is of great concern. Prior to the use of the latest technology, this infectious agent was hard to detect in milk. However, that changed with the use by these investigators of new methods employing the Aicon PrioTrap®. This technology is so effective that prion proteins can even be found in human milk.

A similar story can be told about bovine leukemia viruses found in cow's milk. This virus was discovered in cattle in 1969, but studies using older technology (agar gel immunodiffusion and complement fixation assays) failed to find antibodies to bovine leukemia viruses in people. As a result, the prevailing opinion was exposure of humans to bovine leukemia viruses by eating beef and drinking cow's milk was not important; therefore, the presence of this virus in our food supply was not a public health hazard.² However, in 2003 researchers reported finding evidence of infection with bovine leukemia viruses in 74% of people tested by using more modern technology (immunoblotting).² Still, almost no one has heard that 9 out of 10 cattle herds in the US are infected with bovine leukemia viruses and that three-fourths of people show immunologic signs suggesting infection.²

You should assume cow's milk off-the-shelf contains infectious agents (prions, viruses, and microbes), which can impose a health risk to you and your family. Cow's milk is also high in saturated fat, cholesterol, and animal protein; factors known to cause serious human disease. There is no risk in avoiding cow's milk—it provides no nutrients, specifically calcium and protein, which could not be better obtained from plant sources. (See these recent newsletters for further information: February 2007: When Friends Ask: "Where Do You Get Your Calcium?"; March 2007: When Friends Ask: "Why Don't You Drink Milk?")

1) Franscini N, El Gedaily A, Matthey U, Franitza S, Sy MS, Bürkle A, Groschup M, Braun U, Zahn R. Prion protein in milk. *PLoS ONE*. 2006 Dec 20;1:e71.

2) Buehring GC, Philpott SM, Choi KY. Humans have antibodies reactive with Bovine leukemia virus. *AIDS Res Hum Retroviruses*. 2003 Dec;19(12):1105-13.

Diet, Fertility and Birth Defects

Protein intake and ovulatory infertility by Jorge Chavarro published in the February 2008 issue of the *American Journal of Obstetrics and Gynecology* found, "Consuming 5% of total energy intake as vegetable protein rather than as animal protein was associated with a more than 50% lower risk of ovulatory infertility."¹ These results were based on a total of 18,555 married women without a history of infertility followed up as they attempted a pregnancy or became pregnant during an 8-year period.

The association of folate, zinc and antioxidant intake with sperm aneuploidy in healthy non-smoking men by S.S. Young reported in the March 2008 issue of *Human Reproduction* found, "Men with high folate intake had lower overall frequencies of several types of aneuploid sperm."²

Folate (folic acid) is made by plants. Aneuploidy is a condition where one or a few chromosomes are above or below the normal chromosome number, and is associated with birth defects, like Down syndrome. Decreased folate metabolism in mothers has also been associated with increased risk of having an infant with Down syndrome.² Chemotherapy treatment and exposure to certain pesticides, including organophosphates, have been associated with higher frequency of aneuploidy in human sperm.

Comment:

Over my 35 years of practice I have had many apparently infertile women become pregnant after changing to the McDougall diet—they believed diet change was partially responsible. Infertility affects one in six couples in Western countries. Obesity associated with Polycystic Ovary Syndrome (PCOS) is the primary cause of infertility in women living in developed countries and both are caused by the Western diet. Weight loss will correct PCOS. The most effective way to permanently lose weight is to change the composition of the diet to low-fat, plant foods and add a regular exercise program. This re-

search by Chavarro showed the source of dietary protein (vegetable vs. animal) has additional effects on infertility beyond body weight.

Many couples are delaying starting a family until later in life. Because of their advanced age they worry about an increased risk of birth defects, particularly Down syndrome. Normally, a woman's reproductive years last until about age 50. This was not a mistake of nature. Women should expect to be able to have normal babies during all of their reproductive years if they eat a healthy diet and follow a supportive lifestyle. The most important reason birth defects become more common as people get older is because of the damage to their bodies, and more specifically to their eggs and sperm, caused by unhealthy food choices. Animal foods lack folate, an essential ingredient for DNA (genetic) metabolism, and other nutrients needed for reproduction found in plants. Plus, because they are high on the food chain, meat and dairy products are contaminated with significant amounts of environmental chemicals, including organophosphate pesticides.

We communicate our state of health by our personal appearance, which gives strong signals about our ability to reproduce successfully. Being healthy makes a man or woman appear attractive. Thus, we are by design encouraged to mate—share our genetic materials—with those people who are most likely to produce the best children from this union. Sickness is unattractive—such recognition warns us that union with a sick person is unwise; resulting in greater risk of infertility and genetically defective children.

The Western diet causes people to become overweight with a sickly look, expressed in many subtle ways, such as a gray complexion and puffy skin. Body odor also communicates our state of health. Animal foods contain large amounts of foul-smelling sulfur and also make us sick. The connection of health and attractiveness is important because ultimately, good health promotes preservation of the species. In order to clean up your appearance you need to eat a clean diet based on plant foods.

1) Chavarro JE, Rich-Edwards JW, Rosner BA, Willett WC. Protein intake and ovulatory infertility. *Am J Obstet Gynecol.* 2008 Feb;198(2):210.e1-7.

2) Young SS, Eskenazi B, Marchetti FM, Block G, Wyrobek AJ. The association of folate, zinc and antioxidant intake with sperm aneuploidy in healthy non-smoking men.

Hum Reprod. 2008 Mar 19; [Epub ahead of print]

Antacids Reduce Vitamin B12

Do Acid-lowering agents affect vitamin B12 status in older adults? by T.S Dharmarajan, published in the March 2008 issue of the *Journal of the American Medical Directors Association* found, "B12 status declines during prolonged PPI (proton-pump inhibitors) use in older adults, but not with prolonged H2 blocker (histamine2-receptor antagonists) use; supplementation with RDA amounts of B12 do not prevent this decline." This report reinforces that B12 deficiency is common in the elderly and suggests that it is important to monitor B12 status periodically during prolonged PPI use. During digestion, B12 must be released from a protein-bound state, a process requiring the presence of gastric acid and gastric peptic activity. These pharmaceuticals block acid formation in the stomach.

Comment:

Vitamin B12 deficiency is a well-publicized concern for people following a vegan diet. I have addressed these issues thoroughly in my November 2007 newsletter. Knowing the effects of antacid medication on the risk of B12 deficiency will help avoid further confusion and the risk of people developing B12 deficiency while on any diet.

Proton pump inhibitors are one of the most commonly prescribed drugs in the Western world—they are effective, well tolerated, and profitable. However, they do have serious side effects, including an increased risk of pneumonia, intestinal infections, kidney disease (nephritis), and osteoporosis.

Common Antacids

histamine2-receptor antagonists:

Cimetidine (Tagamet)

Ranitidine (Zantac)

Famotidine (Pepcid)

Nizatidine (Axid)

Not to be overlooked is my observation that most people taking antacids are able to resolve their problems by switching to a low-fat, plant-food based diet, giving up coffee (including decaf), and avoiding the irritating acids found in wine and beer. Raising the head of the bed also prevents reflux of stomach acids into the esophagus. When indicated, less costly, over the counter antacids, such as wafers (TUMS) and histamine2-receptor antagonists should be used before proton pump inhibitors—and used only as needed in most cases. See the February and March 2002 McDougall Newsletters for more information.

Proton pump inhibitors:

Lansoprazole (Prevacid, Zoton, Inhibitol)

Omeprazole (Losec, Prilosec, Zegerid)

Esomeprazole (Nexium)

Rabeprazole (Rabecid, Aciphex, Pariet)

Dharmarajan TS, Kanagala MR, Murakonda P, Lebelt AS, Norkus EP. Do Acid-lowering agents affect vitamin B12 status in older adults? *J Am Med Dir Assoc.* 2008 Mar;9(3):162-7.

You Can Control Your Future

Combined impact of health behaviours and mortality in men and women: the EPIC-Norfolk prospective population study by Kay-Tee Khaw published in the January 2008 issue of the *PLoS Medicine* journal (Public Library of Science Medicine) found, "Four health behaviours combined predict a 4

-fold difference in total mortality in men and women, with an estimated impact equivalent to 14 y in chronological age." The four behaviors were current non-smoking, not physically inactive, moderate alcohol intake (1-14 units a week) and plasma vitamin C >50 mmol/l indicating fruit and vegetable intake of at least five servings a day, for a total score ranging from zero to four. The study was on 20,244 men and women aged 45-79 years with no known cardiovascular disease or cancer, over an average period of 11 years. Even people who already had chronic diseases showed benefits from a healthier diet and lifestyle.

Comments:

"You won't live any longer if you eat and live healthier, it will only seem longer." That's what many people believe, especially those who are slovenly and gluttonous. This is one of many studies that tell the truth—you do have control of your destiny. Life is short, so take that walk today after eating your bean and rice burrito.

Khaw KT, Wareham N, Bingham S, Welch A, Luben R, Day N. Combined impact of health behaviours and mortality in men and women: the EPIC-Norfolk prospective population study. *PLoS Med.* 2008 Jan 8;5(1):e12.