



## The Society for Cardiovascular Angiography and Interventions

### SCAI President's Page



### The “Cancer”

**John McB. Hodgson, MD, FSCAI**  
Heart and Vascular Center  
MetroHealth Medical Center  
Cleveland, Ohio  
President  
Society for Cardiovascular Angiography and Interventions

I recall one of my first patients as a medical student newly assigned to the inpatient service. A man in his seventies was dying from colon cancer. Of course, my assignment to his case did little to change his situation, but it did a lot to change me. When he died a week or so later I felt angry and impotent. I am a bit embarrassed to tell you that the family ended up consoling me rather than the other way around! I'm certain much of my sadness was triggered by my own father's death due to cancer many years before. I think I briefly considered Oncology (for a nanosecond), but my love of physiology steered me instead to a career in Cardiology. Well, 25 years later I have come full circle. Let me explain how. I was invited to comment on the “late-breaking” presentation of the REVERSAL trial at the recent American Heart Association Scientific Sessions. This trial tested the hypothesis that aggressive statin therapy could stop the progression of coronary atheromatous disease as assessed by volumetric ultrasound [1].

As all of you are aware, I am an Interventional Cardiologist. While at first it may seem unusual for a catheterization lab-based physician to comment on a lipid therapy trial, I hope in the next pages to convince you that there is no inconsistency at all. For over 20 years, I have been mechanically treating coronary stenosis. For

over 15 years I have been using IVUS to study coronary atheroma. But for the past 7 years I have been preaching that the most important intervention that I perform in the cath lab each day is to place patients on statin therapy. The REVERSAL study results confirm that I am on the right track. No doubt you are aware that the trial was positive: the 80 mg daily of atorvastatin cohort had no change in their plaque volume 18 months later.

Several points about this trial should be emphasized. First, tomographic imaging of atheroma is an extremely effective method to diagnose, characterize and monitor the atherosclerotic process. Recent studies have nicely described the incredible power of volumetric IVUS analysis to assess drug effects on atheroma. In addition to the REVERSAL findings, Dr. Steven Nissen and colleagues reported drug-induced regression of atheroma after just 6 weeks of therapy with apo-A1 Milano [2]. Using volumetric IVUS this effect could be statistically verified

\*Correspondence to: John McB. Hodgson, MD, FSCAI, Heart and Vascular Center, MetroHealth Medical Center, 2500 MetroHealth Drive Cleveland, Ohio 44109. E-mail: [president@scai.org](mailto:president@scai.org)

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using fewer than 60 patients. Similar findings have been described with external ultrasonic measures of carotid intimal medial thickness [3], and with electron beam CT scanning. Based on the increasing number of positive trials, I expect that tomographic atheroma imaging, both using IVUS and non-invasive techniques, will become the standard for atheroma detection and therapeutic monitoring.

While the REVERSAL trial studied atheroma as a surrogate for clinical efficacy, ample clinical studies have documented patient benefit. The ASCOT trial reported in April 2003 in *The Lancet* was a primary prevention trial comparing atorvastatin 10 mg to placebo [4]. The trial was stopped 2 years early due to a 36% reduction in myocardial infarction and cardiac death seen in the statin group. The GREACE trial reported in late 2002 was a secondary prevention trial that randomized stable coronary patients to atorvastatin versus usual care [5]. At 3 years there was a 43% reduction in death and a 50% reduction in the need for revascularization procedures. Most alarming was that only 14% of the usual care group achieved NCEP goals for LDL [6]. The MIRACL trial reported in *JAMA* in 2001 studied acute coronary syndrome patients and demonstrated that high dose atorvastatin significantly reduced the composite endpoint after only 16 weeks [7]. Thus, aggressive statin therapy achieving LDL levels below the NCEP goal is clearly associated with clinical benefit in a wide range of primary or secondary prevention patients at all levels of clinical severity.

There also appear to be important pleiotropic effects of statins. In the REVERSAL trial CRP was lowered significantly during atorvastatin therapy. Similar inflammatory marker reductions have been seen in the MIRACL trial [8]. Knowing the critical role of inflammation in plaque stability, this non-LDL effect may be very important and deserves further study.

So what does this have to do with Oncology? I have told my coronary patients for years that they have "cancer" of the heart. Why not! This "cancer" is the number one cause of death in the Western world. We spend billions of dollars and countless hours battling it. In my opinion, our patients with atherosclerosis should be treated no less aggressively than a woman with breast cancer. Now, we have compelling evidence that aggressive statin therapy can arrest the atheromatous process. In this analogy, statins are our chemotherapy. This has been a year of fulfillment for me as an "oncologic interventional cardiologist."

Last April the FDA approved drug-eluting stents that have dramatically reduced restenosis after stenting. As an interventionalist, I now have the tools I need to put the atheromatous "cancer" into remission. On my first encounter with the patient, I can use drug-eluting stents to

alleviate the hemodynamic obstructions and then aggressive statin therapy to put their remaining disease in remission. While exciting, to be widely successful, our collective "usual care" must improve. Compliance rates of <20% for LDL lowering to NCEP III goals in patients with established coronary disease are shameful. We must all get with the guidelines!

Statin therapy is approved, simple and safe. A meta-analysis of nearly 10,000 patients treated with atorvastatin was recently published by Newman et al. [9]. Only 3% discontinued the drug, mainly for GI distress. Only 0.5% had persistent elevation of liver enzymes and only 1.9% had myalgias. In an accompanying editorial by Waters [10], it was noted that despite this incredible safety profile, over 50% of patients in everyday clinical care stop their statin by year 2, even when it is paid for. This needs to be corrected! Additionally, new pharmacologic agents that can dramatically raise HDL cholesterol are now under investigation (again using IVUS to detect atheromatous regression). If successful, these drugs will further enable us to affect the disease.

I suggest that the REVERSAL data is compelling enough that we all need to consider ourselves oncologists in the fight against atherosclerotic heart disease. We interventional cardiologists should lead the medical community. We need to think outside of the cath lab! Aggressive, coordinated atheroma monitoring programs should be established to ensure accurate early detection, patient compliance with prescribed therapy, and that treated patients actually achieve the NCEP III goals. I am increasingly optimistic for my patients with the "cancer" of atherosclerotic disease. I am optimistic for my children as well. Our collective efforts may spare them the ravages of atherosclerosis. I invite all of you to become "oncologists" with me as we work to put our atherosclerotic patients into remission! For the good of the patients, let's put ourselves out of business!

## REFERENCES

1. Nissen SE, REVERSAL Trial Results. Presented on 11-12-2003 at American Heart Association Scientific Sessions, Orlando, Florida ([http://www.clevelandclinic.org/heartcenter/pub/news/archive/2003/reversal11\\_13.asp](http://www.clevelandclinic.org/heartcenter/pub/news/archive/2003/reversal11_13.asp))
2. Nissen SE, Tsunoda T, Tuzcu EM, Schoenhagen P, Cooper CJ, Yasin M, Eaton GM, Lauer MA, Sheldon WS, Grines CL, Halpern S, Crowe T, Blankenship JC, Kerensky R. Effect of recombinant apoA-I Milano on coronary atherosclerosis in patients with acute coronary syndromes. A randomized controlled trial. *JAMA* 2003;290:2292-2300.
3. Taylor AJ, Kent SM, Flaherty PJ, Coyle LC, Markwood TT, Vernalis MN. ARBITER: Arterial biology for the investigation of the treatment effects of reducing cholesterol. A randomized trial comparing the effects of atorvastatin and pravastatin on carotid intimal medial thickness. *Circulation* 2002;106:2055-2060.

4. Sever PS, Björn-Dahlöf, Poulter NR, Wedel H, Beevers G, Caulfield M, Collins R, Kjeldsen SE, Kristinsson A, McInnes GT, Mehlsen J, Nieminen M, O'Brien E, Östergren J for the ASCOT investigators. Prevention of coronary and stroke events with atorvastatin in hypertensive patients who have average or lower-than-average cholesterol concentrations, in the Anglo-Scandinavian Cardiac Outcomes Trial-Lipid Lowering Arm (ASCOT-LLA): a multicentre randomized controlled trial. *The Lancet* 2003;361:1149–1158.
5. Athyros VG, Papaageorgiou AA, Mercouris BR, Athyrou VV, Symeonidis AN, Basayannis EO, Dimitriadis DS, Kontopoulos AG. Treatment with atorvastatin to the National Cholesterol Educational Program goal versus "usual" care in secondary coronary heart disease prevention. The GREek Atorvastatin and Coronary-heart-disease Evaluation (GREACE) study. *Curr Med Res Opin* 2002;18:220–228.
6. Executive summary of the third report of the National Cholesterol Education Program (NCEP) expert panel on detection, evaluation, and treatment of high blood cholesterol in adults (adult treatment panel III). *JAMA* 2001;285:2486–2497.
7. Schwartz GG, Olsson AG, Ezekowitz MD, et al. Effects of atorvastatin on early recurrent ischemic events in acute coronary syndromes: the MIRACL study: a randomized controlled trial. *JAMA* 2001;285:1711–1718.
8. Kinlay S, Schwartz GG, Olsson AG, Rifai N, Leslie SJ, Sasiela WJ, Szarek M, Libby P, Ganz P. High-dose atorvastatin enhances the decline in inflammatory markers in patients with acute coronary syndromes in the MIRACL study. *Circulation* 2003;108:1560–1566.
9. Newman CB, Palmer G, Silberschatz H, Szarek M. Safety of atorvastatin derived from analysis of 44 completed trials in 9,416 patients. *Am J Cardiol* 2003;92:670–676.
10. Waters D. Statins and safety: applying the results of randomized trials to clinical practice. *Am J Cardiol* 2003;92:692–695.