

LIPID CASE 253 President Obama's CV exam

I would like to chime in on the data just released (Feb 2010) after the president had an executive physical.

Current data: TG 46 HDL-C 62 LDL-C 138 (all in mg/dL) A CAC study reported as "negative"

Glucose was normal Still smokes an occasional cigarette

2007 lipid data TG 44 HDL-C 68 LDL-C 96 BP 105/62

Comments: Even though it was not reported we can easily calculate the TC and non-HDL-C. values

$TC = VLDL-C (TG/5) + LDL-C + HDL-C$
So $TC = 44/5 + 138 + 62 = 209$

Thus the Non HDL-C = 147 $TC/HDL-C = 3.3$ $TG/HDL-C = 0.7$

Using NCEP criteria the President is low risk and with the current lipid levels does not qualify for drug therapy. His LDL-C goal is 160 mg/dL and non-HDL-C is 190 mg/dL.

As we now know from the study and editorial in a recent JACC issue, total coronary occlusion frequently occurs in the absence of any detectable calcification (J Am Coll Cardiol 2010;55:627–34 and J Am Coll Cardiol 2010;55:635–36. A negative CAC has many false negatives. So the negative CAC is not very helpful. Using the lipid concentrations as surrogates of atherogenic apoB-containing lipoproteins (LDL-P), one would not think the president has much risk.

Although it would not be recommended by any current guidelines except perhaps the 2009 American Association of Clinical Chemistry statement, (Clinical Chemistry 55:3 407–419 (2009), I believe one should indeed quantify the number of atherogenic particles by apoB (using actual measurement) or LDL-P via NMR spectroscopy. Interestingly, although there does not seem to be any signs indicative of insulin resistance (which might cause an LDL-P / LDL-C discordance or disconnect), African-Americans who are insulin resistant (IR) typically do not have high TG or low HDL-C and TG/HDL ratios have no predictive value for IR as it does in Caucasian populations (Metabolism Clinical and Experimental 59 (2010) 299–304, Arch Intern Med. 2005;165:1395-1400).

Are there ethnic differences among lipoproteins: for sure. In the Studies of a Targeted Risk Reduction Intervention through Defined Exercise (STRRIDE) study: Whites had significantly more IDL, small LDL, medium VLDL, and large VLDL with lower levels of large LDL than blacks. HDL and LDL size were larger among blacks and women (Atherosclerosis 176 (2004) 371–377). So one might conjecture even with the potentially elevated LDL-C of 138, if the president has large LDL particles his LDL-P is likely

normal. As a lipidologist I would not bet his CV risk on a lipid concentration, I would do the LDL-P.

I cannot advise for or against a statin or any other drug until I see the atherogenic particle count. The president must be told to stop smoking.