Editorial

Saturated fat does not clog the arteries: coronary heart disease is a chronic inflammatory condition, the risk of which can be effectively reduced from healthy lifestyle interventions FREE

Compose a Response to This Article +

Other responses

Jump to comment:

The Author of the Inflammation and Heart Disease Theory Cautions - Cholesterol and Saturated Fat are an Integral part of the Inflammatory process we call Coronary Artery Disease.
Richard M Fleming, Matthew R Fleming and Tapan K Chaudhuri
Published on: 23 February 2020 BJSM 23 Feb 2020 to 51(15):1111.

A simple approach to a healthy lifestyle
Louisa Lam
Published on: 25 April 2017

Published on: 23 February 2020

The Author of the Inflammation and Heart Disease Theory Cautions - Cholesterol and Saturated Fat are an Integral part of the Inflammatory process we call Coronary Artery Disease.

Richard M Fleming, Physicist-Cardiologist FHHI-OI-Camelot
Other Contributors:
Matthew R Fleming, Physicist-Paramedic
Tapan K Chaudhuri, MD Eastern Virginia Medical School

In the mid-1990s, as one of the reviewers for the American Heart Association, the first author of this letter, Dr Richard M Fleming (RMF) introduced a then controversial theory stating that Coronary Artery Disease (CAD) is the result of an inflammatory process, which builds up within the walls of the arteries (Figure 1) impairing their ability to dilate and increase coronary blood flow when needed; thus producing regional blood flow differences resulting in angina [1-3] and ultimately myocardial infarction (MI) and death.

In recent years, people promoting various dietary and lifestyle practices – particularly those promoting LowCarb-Keto diets, have taken advantage of the obesity epidemic and focused everyone's attention on obesity and weight loss. These individuals have not determined the actual impact their diets have on CAD - which would require more than just looking at changes in weight or serum blood tests. It would require measurement of changes occurring within the walls of the coronary arteries themselves – not some other artery - and the resulting change in coronary artery function [1,4].

These individuals, including Dr. Aseem Malhotra [5] support their dietary recommendations by showing weight loss, and occasionally reductions in cholesterol levels – at least initially in some people. Over the years as it has been shown that cholesterol levels fail to fall, and frequently increase on such diets, their argument has changed and has been replaced with "saturated fat does not clog the (coronary or other) arteries" [5].

We argue that the claim by Malhotra, and others -- that saturated fat and LDL-cholesterol have nothing to do with the development of inflammatory CAD – demonstrates a complete failure to understand the "Inflammation and Heart Disease" Theory [3,6] as shown in Figure 1 and therefore cannot be taken seriously.

Their claims introduce yet another major misconception into the discussion of CAD. Specifically, the process of "clogging of the coronary arteries." The narrowing or "clogging" of the coronary artery lumen – where the blood flows - so frequently referred to as CAD, is actually a late process in the development of the inflammatory changes that are CAD [7-13].

CAD begins with the inflammatory process first distending the wall of the artery outward away from the lumen – impairing the function of the artery - and only later encroaching upon the lumen itself [1,3,7]. Recognition that the rupture of this inflammatory process may occur following minimal or no coronary lumen narrowing [1,3,7] has resulted in the recent acknowledgement by the Cardiology community that infarction of myocardium may occur with (Type I) or without (TYPE II) coronary lumen obstruction.

Fleming and Harrington's work – published in 2008 [14] - demonstrated that the relationship between weight loss, and changes in lipids and other blood tests reflecting inflammatory processes [3], are only mildly-to-moderately correlated (Figure 2) with actual changes occurring within the coronary arteries themselves. Thus further exposing the erroneous statement - using the results of blood tests - declaring that saturated fat and cholesterol are not involved in CAD.

To understand the impact LowCarb-Keto diets - or for that matter any diet - has on CAD, one needs to measure what is happening to the coronary arteries themselves [15-17] by using FMTVDM.

To state that Saturated fat and LDL-cholesterol has nothing to do with CAD and do not result in the "clogging" of coronary arteries, and then to state that CAD is a chronic inflammatory condition - raises serious concerns about the motivation of their arguments. It also raises serious questions about their actual understanding of the "Inflammation and Heart Disease" Theory. To which we acknowledge, "we can teach it to you but we cannot understand it for you."

Acknowledged potential COI: FMTVDM (The Fleming Method for Tissue and Vascular Differentiation and Metabolism) [4] is issued to the first author. The first author authored the Inflammation and Heart Disease and Angina Theories.

Figures available upon reasonable request:

Figure 1. Fleming Inflammation and Heart Disease Theory first introduced in the 1990s [3].

Figure 2. Changes in weight loss and serum markers of lipids and other inflammatory blood tests correlate only mildly-to-moderately with actual measured changes in coronary artery disease [14].

References:

1. Fleming RM. Chapter 29. Atherosclerosis: Understanding the relationship between coronary artery disease and stenosis flow reserve. Textbook of Angiology. John C. Chang Editor, Springer-Verlag, New York, NY. 1999. pp. 381-387.
2. Fleming RM. Chapter 30. Cholesterol, Triglycerides and the treatment of hyperlipidemias. Textbook of Angiology. John C. Chang Editor, Springer-Verlag, New York, NY. 1999, pp. 388-396.
3. Fleming RM. Chapter 64. The Pathogenesis of Vascular Disease. Textbook of Angiology. John C. Chang Editor, Springer-Verlag New York, NY. 1999, pp. 787-798.
4. The Fleming Method for Tissue and Vascular Differentiation and Metabolism (FMTVDM) using same state single or sequential quantification comparisons. Patent Number 9566037. Issued 02/14/2017.
5. Malhotra A, Redberg R, Meier P. Saturated fat does not clog the arteries: coronary heart disease is a chronic inflammatory condition, the risk of which can be effectively reduced from healthy lifestyle interventions. British J Sports Med 2017;51:1111-1112.
6. 20/20 Segment on Heart Disease and Inflammation. https://www.youtube.com/watch?v=Hvb_Ced7KyA&t=22s
7. Glagov S, Weisenberg E, Zarins CK, Stankunavicius R, Kolettis GJ. Compensatory enlargement of human atherosclerotic coronary arteries. N Engl J Med 1987;316(22):1371-1375.
8. Fleming RM., Kirkeeide RL, Smalling RW, Gould KL. Patterns in Visual Interpretation of Coronary Arteriograms as Detected by Quantitative Coronary Arteriography. J Am Coll. Cardiol. 1991;18:945- 951.
9. Fleming RM, Harrington GM. Quantitative Coronary Arteriography and its Assessment of Atherosclerosis. Part 1. Examining the Independent Variables. Angiology 1994;45(10):829-833.
10. Fleming RM, Harrington GM. Quantitative Coronary Arteriography and its Assessment of Atherosclerosis. Part 2. Calculating Stenosis Flow Reserve Directly from Percent Diameter Stenosis. Angiology 1994;45(10):835-840.
11. Fleming RM. Shortcomings of coronary angiography. Letter to the Editor. Cleve Clin J Med 2000;67:450.
12. Fleming RM. Coronary Artery Disease is More than Just Coronary Lumen Disease. Amer J Card 2001;88:599-600.
13. Fleming RM, Harrington GM. TAM-A.7 Sestamibi redistribution measurement defines ischemic coronary artery lumen disease. 56th Annual Meeting of the Health Physics Society. (American Conference of Radiological Safety) West Palm Beach, FL, USA, 30 June 2011. http://hpschapters.org/2011AM/program/singlesession.php3?sessid=TAM-A
14. Fleming RM, Harrington GM. What is the Relationship between Myocardial Perfusion Imaging and Coronary Artery Disease Risk Factors and Markers of Inflammation? Angiology 2008;59:16-25.
15. Fleming RM, Fleming MR, Chaudhuri TK. Replacing Cardiovascular Risk Factors with True AI and Absolute Quantifiable Measurement (FMTVDM) of Coronary Artery Disease. Inter J Res Studies Med & Health Sci. 2019;4(11):11- 13. ISSN:2456-6373.
16. Fleming RM, Fleming MR, Chaudhuri TK. Are we prescribing the right diets and drugs for CAD, T2D, Cancer and Obesity? Int J Nuclear Med Radioactive Subs 2019;2(2):000115.
17. Fleming RM, Fleming MR, Chaudhuri TK, Harrington GM. Cardiovascular Outcomes of Diet Counseling. Edel J Biomed Res Rev. 2019;1(1):20-29.

Show Less

Conflict of Interest:

FMTVDM is issued to the first author. The first author authored the Inflammation and Heart Disease and Angina Theories.

References:

Back to top