Fasting time prior to blood lipid tests appears to have limited association with lipid levels

November 12 2012

Fasting prior to blood lipid tests appears to have limited association with lipid subclass levels, suggesting that fasting for routine lipid level determinations may be unnecessary, according to a report published Online First by *Archives of Internal Medicine*.

"Although current guidelines recommend measuring lipid levels in a fasting state, recent studies suggest that nonfasting lipid profiles change minimally in response to food intake and may be superior to fasting levels in predicting adverse cardiovascular outcomes," write Davinder Sidhu, M.D., L.L.B, and Christopher Naugler, M.Sc., M.D., C.C.F.P., F.C.F.P., F.R.C.P.C., with the University of Calgary, Alberta, Canada.

The authors conducted a cross-sectional examination of laboratory data, which included fasting duration (in hours) and lipid results, over a 6-month period in 2011 of a large community-based cohort. A total of 209,180 participants (111,048 women) were included in the analysis.

In general, the authors found that among average cholesterol levels, the mean (average) levels of total cholesterol and high-density lipoprotein (HDL) differed little among individuals with various fasting times. Specifically, these levels varied by less than 2 percent for total cholesterol and HDL cholesterol, less than 10 percent for calculated low-density lipoprotein (LDL) cholesterol, and by less than 20 percent for triglycerides.

"We found that fasting time showed little association with lipid subclass

levels in a large community-based cohort," the authors conclude. "This finding suggests that fasting for routine lipid level determinations is largely unnecessary."

In an accompanying editorial, J. Michael Gaziano, M.D., M.P.H., of Brigham and Women's Hospital, Harvard Medical School and VA Boston Healthcare System, writes: "What are the pros and cons of obtaining a fasting lipid profile? …This question is addressed by Sidhu and Naugler in this issue."

"In summary, most of the reasons that we measure a lipid profile depend on total and HDL cholesterol levels for most of our decision making. The incremental gain in information of a fasting profile is exceedingly small for total and HDL cholesterol values and likely does not offset the logistic impositions placed on our patients, the laboratories, and our ability to provide timely counseling to our patients. This, in my opinion, tips the balance toward relying on nonfasting lipid profiles as the preferred practice," Gaziano concludes.

In an invited commentary, Amit V. Khera, M.D., and Samia Mora, M.D., M.H.S., of Brigham and Women's Hospital and Harvard Medical School, Boston, write: "A report by Sidhu and Naugler in this issue challenges the necessity of fasting before blood collection."

The authors also note that, "a growing body of evidence from observational studies and statin clinical trials suggests that non-fasting or fasting blood draws may be used for cardiovascular risk assessment and therapeutic decisions, especially when lipid subfractions other than LDL-C (e.g., the total HDL-C ratio or non-HDL-C) are emphasized."

"Additional prospective studies that directly compare the association of fasting and nonfasting lipid levels with cardiovascular outcomes in the same individuals would be informative. Further validation studies are

needed before a nonfasting lipid testing strategy is universally endorsed," the authors conclude.

More information: *Arch Intern Med*. Published online November 12, 2012. doi:10.1001/archinternmed.2012.3708
Arch Intern Med. Published online November 12, 2012. doi:10.1001/jamainternmed.2013.1771
Arch Intern Med. Published online November 12, 2012. doi:10.1001/2013.jamainternmed.263