Cardiovascular (CV) Risk Stratification By Primary Care Physicians (PCPs) Using Framingham Risk Score (FRS) and In-Office Carotid Ultrasound: Results From The Primary Care Audit Of Global Risk Management (PARADIGM) Study


1Canadian Cardiovascular Research Network, Brampton, ON; 2McMaster University, Hamilton, ON; 3Keenan Research Centre in the Li Ka Shing Knowledge Institute of St. Michael’s, Toronto, ON; 4University of Toronto, Toronto, ON; University of British Columbia, Vancouver, BC

BACKGROUND: Guidelines recommend the Framingham Risk Score (FRS) for CV risk stratification, but FRS is variably used in practice. Carotid imaging has been proposed as an alternate screening tool. The PARADIGM study prospectively assessed CV risk stratification in 3015 subjects by 105 Canadian Primary Care Physicians (PCPs) using FRS and in-office carotid imaging.

METHODS: Inclusion criteria were men >40y or women >50y, and absence of vascular disease, diabetes, known high FRS, and use of lipid-lowering drugs. Objectives were to examine agreement between central and PCP risk assessment and to test the feasibility of in-office carotid imaging for plaque detection. PCPs estimated CV risk using any method of choice. FRS was centrally determined. Thirty PCPs were trained to use a hand-held ultrasound device for detection of carotid plaque and enrolled 607 patients in the carotid sub-study. In-office carotid scans were over-read by a core lab for verification of PCP-determined plaque presence. Core lab reports were not provided to PCPs.

RESULTS: Patients with PCP-detected plaques were older, and more likely to be Caucasian, hypertensive or smokers compared to those without plaques. Using multivariate modeling, positive correlates of plaque were age, hypertension, smoking, and hs-CRP>2 mg/L; negative correlates were female gender and HDL. Patients with low, intermediate and high FRS had increasing prevalence of plaques (48, 63, 80% respectively, p<0.001 for trend). Concordance between PCP and central risk assessment by FRS was 57.9% (kappa = 0.27). In contrast, agreement between PCP and core lab carotid plaque assessment was 74% (kappa = 0.48).

CONCLUSION: Carotid imaging by PCPs demonstrates expected relationships with known determinants of carotid disease. Carotid plaque was noted in 48-63% of subjects with low or intermediate FRS. Agreement between in-office and core lab plaque assessment was superior to that between PCP and central risk assessment by FRS. In-office carotid screening may improve identification of low to intermediate FRS patients with atherosclerosis who warrant initiation of preventive therapies.

CONFLICTS OF INTEREST

The author declares honoraria and/or consultancy fees received from Merck Canada, GSK, Pfizer and astra-zeneca (< $10k) and a research grant from Merck Canada (> $10k).

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