Contemporary Trends in Hypertension in Canada: Insights from the Primary Care Audit of Global Risk Management (PARADIGM) Study

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BACKGROUND
The PARADIGM study is an observational registry, the primary objective of which is to evaluate primary care physician assessment of global cardiovascular risk in healthy individuals.

METHODS
The PARADIGM study enrolled 3015 generally healthy, middle-aged patients in an observational registry.

Inclusion Criteria
- Men ≥40y, women ≥50y
- Absence of known high Framingham Risk Score
- Non-diabetic
- Absence of lipid lowering treatment (current or past)
- No previous history of atherosclerosis (angina, TIA, myocardial infarction, stroke, peripheral arterial disease)
- Willingness to give informed consent

STUDY SETTING AND ENROLMENT
3015 healthy middle-aged adults were enrolled in PARADIGM by primary care physician investigators from 105 sites across Canada. This analysis reports on 917 PARADIGM subjects with either treated (88%) or untreated hypertension.

RESULTS

BASELINE DEMOGRAPHICS

Para 17 Mean or %
Age (yrs) 59 +/- 9
Female 46%
Ethnicity
  Caucasian 68%
  Non Caucasian 32%
Mean BP in treated patients
  Systolic (mm Hg) 133 +/- 14
  Diastolic (mm Hg) 81 +/- 9
Mean BP in untreated patients
  Systolic (mm Hg) 145 +/- 13
  Diastolic (mm Hg) 91 +/- 9
Total CV Framingham Risk Score
  Low 20%
  Intermediate 41%
  High 39%

OBJECTIVES OF HYPERTENSION SUBANALYSIS

Objectives of hypertension subanalysis
- To determine prevalence of coexisting CV risk factors in otherwise healthy hypertensive patients
- To evaluate the risk category of hypertensive subjects based on the Total CV Framingham Risk Score
- To assess the choices of antihypertensive agents in the management of hypertension

OBJECTIVES OF HYPERTENSION SUBANALYSIS

Para 17 Mean or %
Smoking (past/current) 36%
Family Hx 27%
Abdominal obesity 63%
Dyslipidemia 33%
LDL (mmol/L) 3.6/139 +/- 0.8/31
HsCRP (mg/L) 3.7 +/- 5
HbA1C 0.06 +/- 0.01
Creatinine (umol/L/mg/dL) 80/0.91 +/- 17/0.19
eGFR 76 +/- 17

CONCLUSIONS
In patients with uncomplicated hypertension:
- The majority require combination antihypertensive therapy
- BP control is quite reasonable
- 2/3 have abdominal obesity and 1/3 have dyslipidemia
- Despite good BP control, 80% of patients have an intermediate to high FRS
- In monotherapy, ACEi was the most frequently used class followed by ARB
- The most common combination therapy employed was ARB and diuretic followed by ACE inhibitor and diuretic
- Combination therapies employing a CCB were fairly uncommon

IMPLICATIONS
- Despite reasonable BP control, Canadians with uncomplicated hypertension remain at increased cardiovascular risk
- Despite recent data suggesting that RAS/CCB combinations may provide better CV protection than RAS/diuretic combinations (ASCOT, ACCOMPLISH), the use of this combination is quite low

CONFLICTS OF INTEREST
The authors report no conflicts of interest to disclose

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