1. Statins for primary prevention among elderly men and women

**Aims**

We undertook a propensity match-weighted cohort study to investigate whether statin treatment recommendations for statins translate into improved cardiovascular (CV) outcomes in the current routine clinical care of the elderly.

**Methods and results**

We included in our analysis (ISACS Archives -NCT04008173) a total of 5619 Caucasian patients with no known prior history of CV disease who presented to hospital with a first manifestation of CV disease with age of 65 years or older. The risk of ST-segment elevation myocardial infarction (STEMI) was much lower in statin users than in non-users in both patients aged 65–75 years [14.7% absolute risk reduction; relative risk (RR): 0.55, 95% CI 0.45–0.66] and those aged 76 years and older (13.3% absolute risk reduction; RR: 0.58, 95% CI 0.46–0.72). Estimates were similar in patients with and without history of hypercholesterolaemia (interaction test; P-values = 0.24 and 0.35). Proportional reductions in STEMI diminished with female sex in the old (P for interaction = 0.002), but not in the very old age (P for interaction = 0.26). We also observed a remarkable reduction in the risk of 30 day mortality from STEMI with statin therapy in both age groups (10.2% absolute risk reduction; RR: 0.39; 95% CI 0.23–0.68 for patients aged 76 or over and 3.8% absolute risk reduction; RR 0.37; 95% CI 0.17–0.82 for patients aged 65–75 years old; interaction test, P-value = 0.46).

**Conclusions**

Preventive statin therapy in the elderly reduces the risk of STEMI with benefits in mortality from STEMI, irrespective of the presence of a history of hypercholesterolaemia. This effect persists after the age of 76 years. Benefits are less pronounced in women. Randomized clinical trials may contribute to more definitively determine the role of statin therapy in the elderly.
2. High-Intensity Interval Training Plus Intensive Lower-Extremity Resistance Training for Women in Cardiac Rehab

IMPORTANCE

Despite lower baseline fitness levels, women in cardiac rehabilitation (CR) do not typically improve peak aerobic exercise capacity (defined as peak oxygen uptake [peak Vo2]) compared with men in CR.

OBJECTIVE

To evaluate the effect of high-intensity interval training (HIIT) and intensive lower extremity resistance training (RT) compared with standard moderate intensity continuous training (MCT) on peak Vo2 among women in CR.

DESIGN, SETTING, AND PARTICIPANTS

This randomized clinical trial conducted from July 2017 to February 2020 included women from a community-based cardiac rehabilitation program affiliated with a

INTERVENTIONS

MCT (70% to 85% of peak heart rate [HR]) with moderate intensive RT or HIIT (90% to 95% of peak HR) along with higher-intensity lower extremity RT 3 times per week over 12 weeks.

MAIN OUTCOMES AND MEASURES

The primary outcome was the between-group difference in change in peak Vo2 (L/min) from baseline to 12 weeks.

RESULTS

Peak Vo2 increased to a greater degree in the HIIT group (+23%) than in the control group (+7%) (mean [SD] increase, 0.3 [0.2] L/min vs 0.1 [0.2] L/min; P = .03). Similarly, the change in leg strength was greater in the HIIT-RT group compared with the control group (mean [SD] increase, 15.3 [0.3] kg vs 6.4 [1.1] kg; P = .004).

CONCLUSIONS AND RELEVANCE

An exercise protocol combining HIIT and intensive lower extremity RT enhanced exercise training response for women in CR compared with standard CR exercise training. Women randomized to HIIT experienced significantly greater improvements in both peak Vo2 and leg strength during CR.

3. Preterm Delivery and Long-Term Risk of Heart Failure in Women

AIMS

Women who deliver pre-term have higher future risks of hypertension and ischaemic heart disease, but long-term risks of heart failure (HF) are unknown. We examined these risks in a large national cohort.

METHODS AND RESULTS

All 2 201 284 women with a singleton delivery in Sweden during 1973–2015 were followed up for inpatient or outpatient HF diagnoses through 2015. Cox regression was used to compute hazard ratios (HRs) for HF associated with pregnancy duration, adjusting for other maternal factors. Co-sibling analyses assessed for confounding by shared familial (genetic and/or environmental) factors. In 48.2 million person-years of follow-up, 19 922 women were diagnosed with HF (median age: 60.7 years). Within 10 years after delivery, the adjusted HR was 2.96 [95% confidence interval (CI): 2.48–3.53] for HF associated with pre-term (gestational age: <37 weeks) compared with full-term
(39–41 weeks) delivery. Stratified HRs were 4.27 (2.54–7.17) for extremely pre-term (22–27 weeks), 3.39 (2.57–4.48) for moderately pre-term (28–33 weeks), 2.70 (2.19–3.32) for late pre-term (34–36 weeks), and 1.70 (1.45–1.98) for early term (37–38 weeks). These HRs declined but remained elevated at 10–19 years (pre-term vs. full term: HR: 2.19; 95% CI: 1.94–2.46), 20–29 years (1.80; 1.67–1.95), and 30–43 years (1.56; 1.47–1.66) after delivery, and were not explained by shared familial factors.

CONCLUSION

Pre-term and early term delivery were associated with markedly increased future hazards for HF, which persisted after adjusting for other maternal and familial factors and remained elevated 40 years later. Pre-term and early-term delivery should be recognized as risk factors for HF across the life course.

4. Factors for Nativity-Related Disparities in Preeclampsia May Vary by Race

After adjustment for sociodemographic and cardiovascular risk factors, nativity-related disparities in preeclampsia persist among non-Hispanic Black women but not among Hispanic and non-Hispanic White women, according to a study published online Dec. 20 in JAMA Network Open.

Ellen Boakye, M.D., M.P.H., from the Johns Hopkins School of Medicine in Baltimore, and colleagues examined differences in cardiovascular risk factors and preeclampsia prevalence by race and ethnicity, nativity, and duration of U.S. residence in a racially diverse cohort of women who had singleton deliveries at the Boston Medical Center from Oct. 1, 1998, to Feb. 15, 2016. The study sample included 6,096 women (2,400 Hispanic; 2,699 non-Hispanic Black; and 997 non-Hispanic White).

The researchers found that non-Hispanic Black women had the highest prevalence of chronic hypertension, obesity, and preeclampsia compared with Hispanic and non-Hispanic White women. U.S.-born women of all three racial and ethnic groups had a higher prevalence of obesity, smoking, and severe stress compared with their counterparts born outside the United States. Birth status outside the United States (adjusted odds ratio, 0.74; 95 percent confidence interval, 0.55 to 1.00) and shorter duration of U.S. residence (adjusted odds ratio, 0.62; 95 percent confidence interval, 0.41 to 0.93) were associated with lower odds of preeclampsia among non-Hispanic Black women, but not among Hispanic and non-Hispanic White women, after adjustment for sociodemographic and cardiovascular risk factors.

"The findings of this cross-sectional study suggest that factors contributing to nativity-related disparities in preeclampsia may differ by race and ethnicity," the authors write.