NCD
SYMPOSIUM

Women and ischemic heart disease: Discovering similarities and differences

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- Ischemic Heart disease (**IHD**) is a major public health problem worldwide.
- Classical well-known risk factors:
  - Dyslipidemia
  - AH
  - DM
  - Obesity
  - Smoking
  - Familial positive for CHD.

Curr Opin Lipidol. 2023 Mar 30.

Sex differences exist from the cardiac structure and function to the presentation and progression of cardiac diseases.

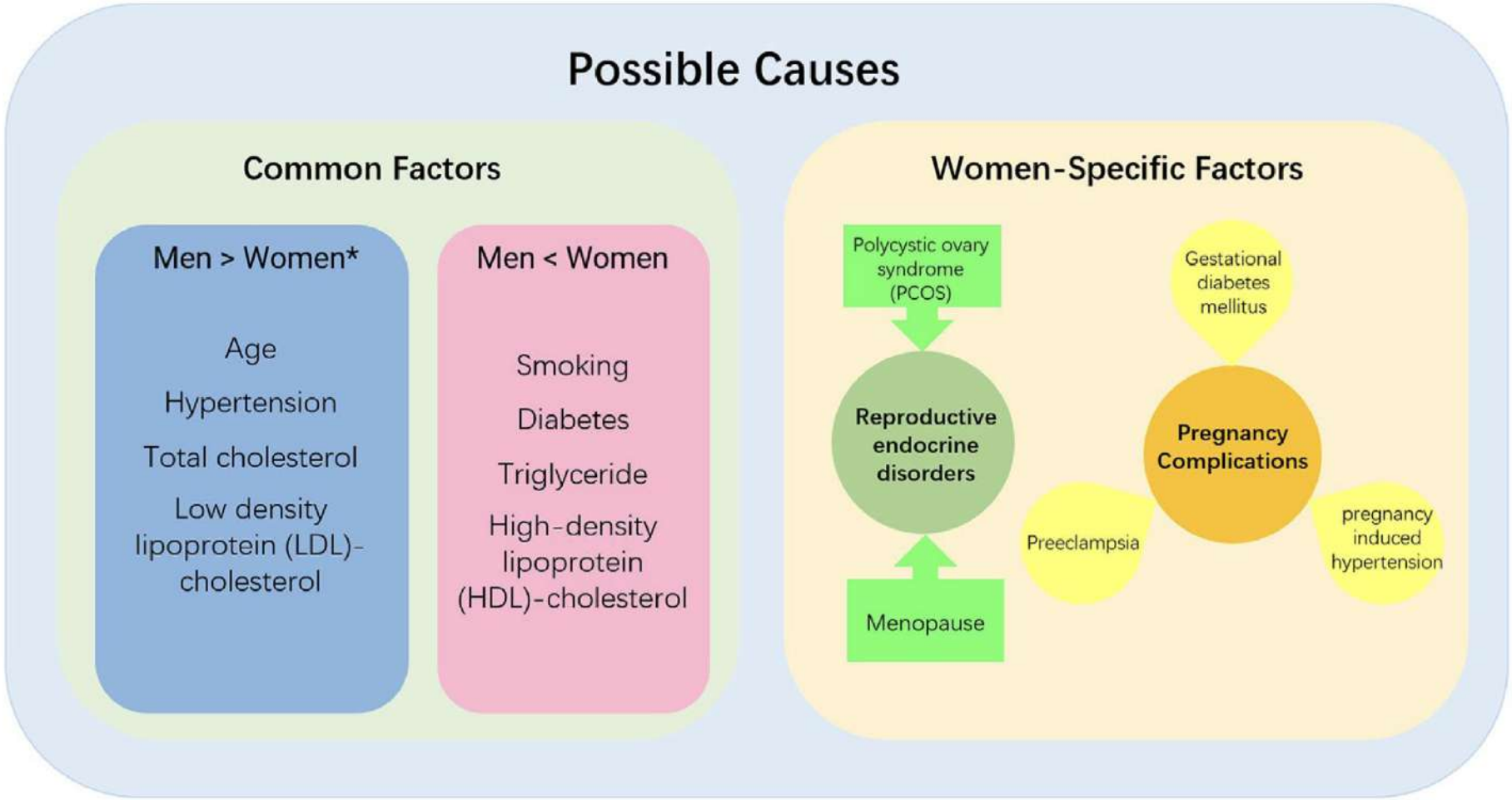
Sex hormones play an important role in the sex-specific differences mainly by affecting cardiac repolarization.

Gender differences

- Cardiac risk factors;
- Clinical assessment:
- Non invasive imaging for CAD;
- Treatment and Outcomes.

Eur Heart J. 2014; 35(32):2146-57.

Cardiac risk factors



Cardiac risk factors

Gender-wise biochemical characteristics of the study population.

Biochemical Parameters	Males (n = 36,490)	Females (n = 36,490)
Fasting plasma glucose (mg/dL)	176 ± 68	180 ± 73 *
Post prandial plasma glucose (mg/dL)	273 ± 94	274 ± 97 **
HbA1c (%)	8.8 ± 2	8.9 ± 2 *
Serum cholesterol (mg/dL)	177 ± 44	187 ± 45 *
Serum triglycerides (mg/dL)	179 ± 133	167 ± 105 *
Serum HDL cholesterol (mg/dL)	39 ± 9	44 ± 10 *
Serum LDL cholesterol (mg/dL)	102 ± 38	109 ± 38 *
Total cholesterol/HDL cholesterol ratio	4.7 ± 1.3	4.4 ± 1.2 *
Blood urea (mg/dL)	25 ± 11	23 ± 10 *
Serum creatinine (mg/dL)	0.9 ± 0.4	0.7 ± 0.6 *

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Clinical Assessment

The acknowledge of gender differences by physicians is crucial for ensuring the most appropriate treatment strategy in both sexes.

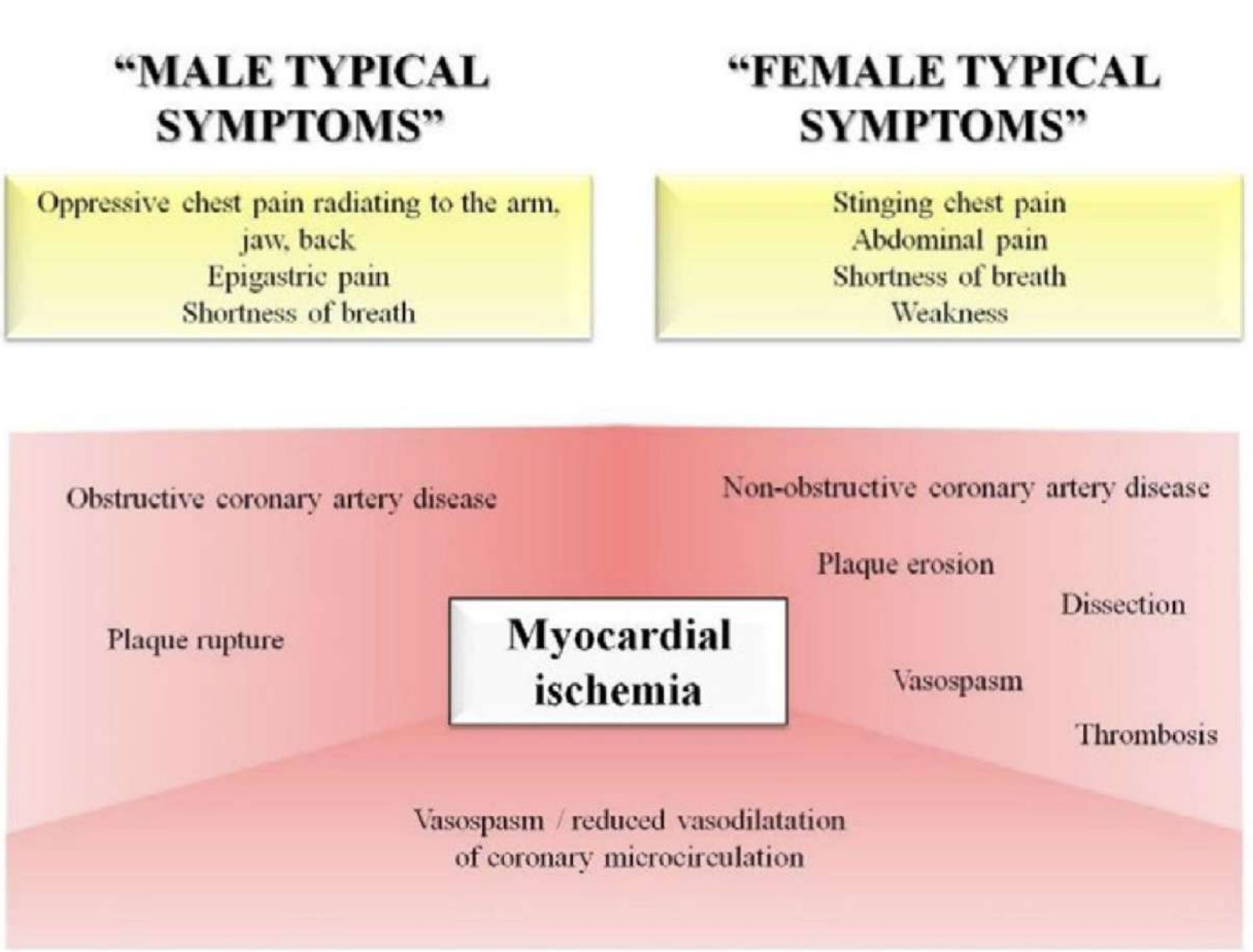


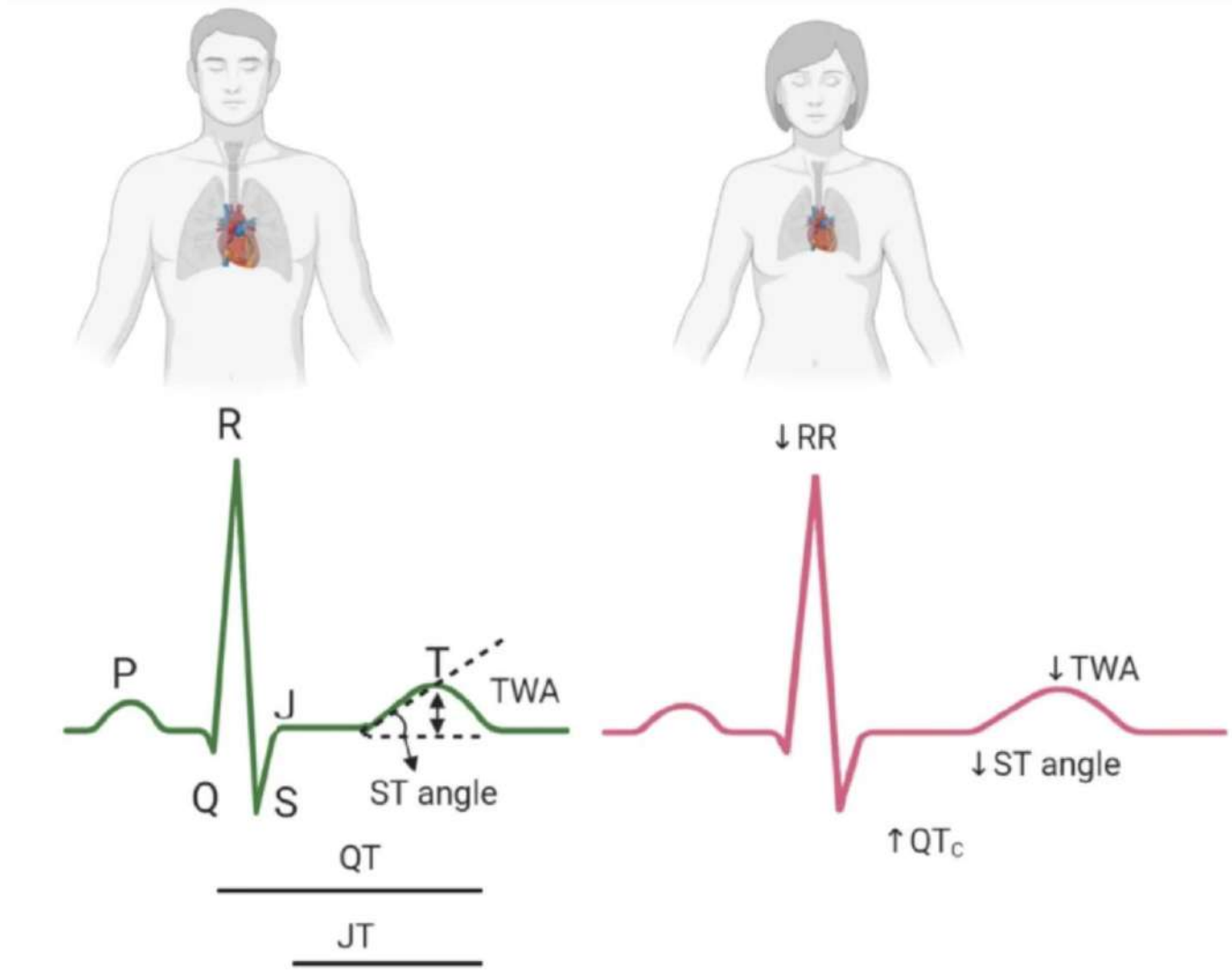
Figure 2. Schematic representation of symptoms, usually occurring in men and women, and pathophysiological mechanisms underlying myocardial ischemia in both sexes.

Non invasive imaging for CAD

ECG……
Exercise ECG…
Stress Echocardiography….
MPI….
Cardiac MRI…
CTCA….

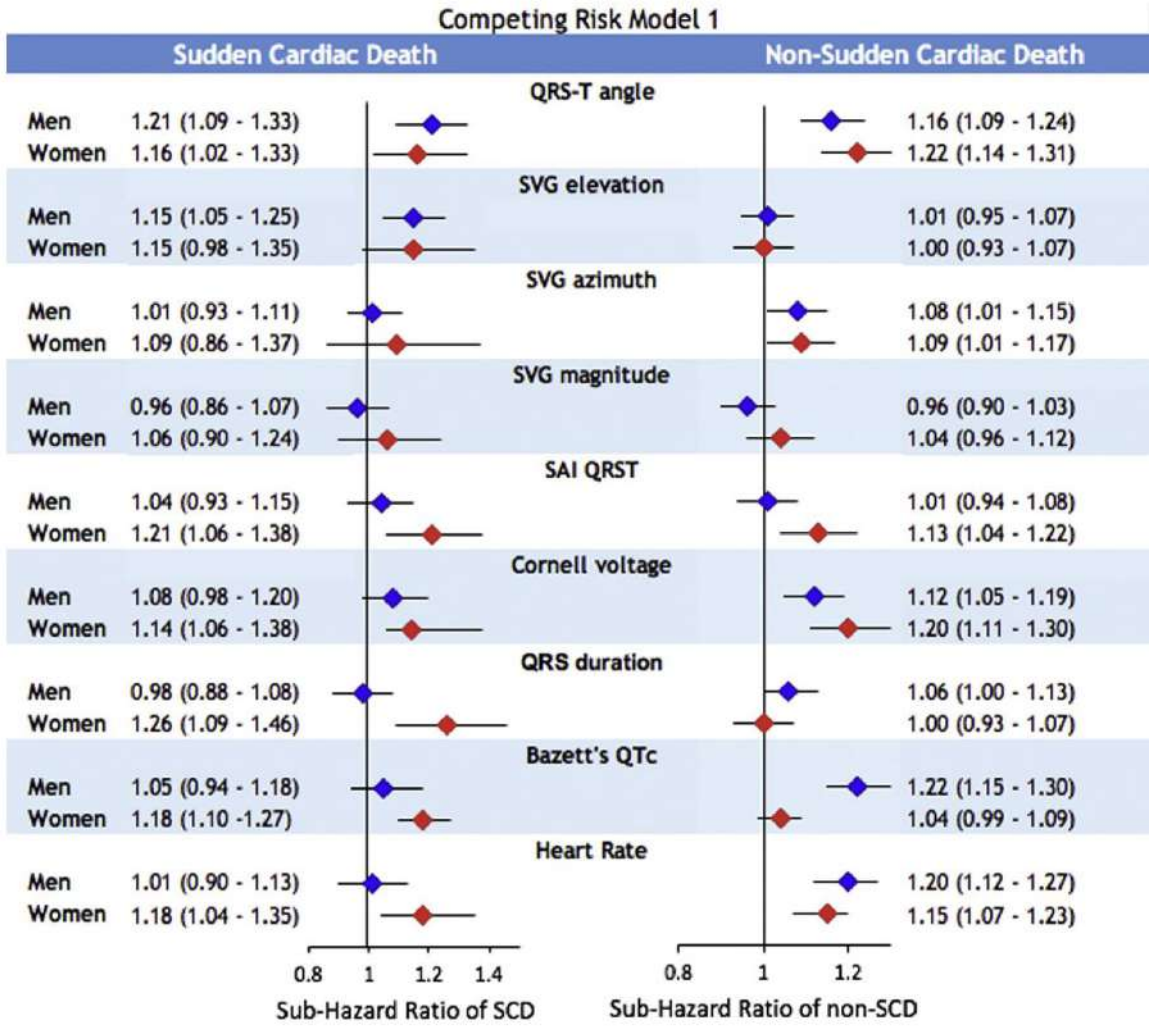
Eur Heart J. 2014; 35(32):2146-57.

Women’s ECG ?!?



Sex differences in electrocardiogram (ECG). Interval between two consecutive Rs (RR), interval between Q and T wave (QT); interval between J and T wave (JT), rate-corrected QT interval (QT_C,); angle of ST elevation (ST angle) and T-wave amplitude (TWA). Green and red ECGs from men and women, respectively

Treatment and Outcome



Men (n=8089)

Women (n=11 369)

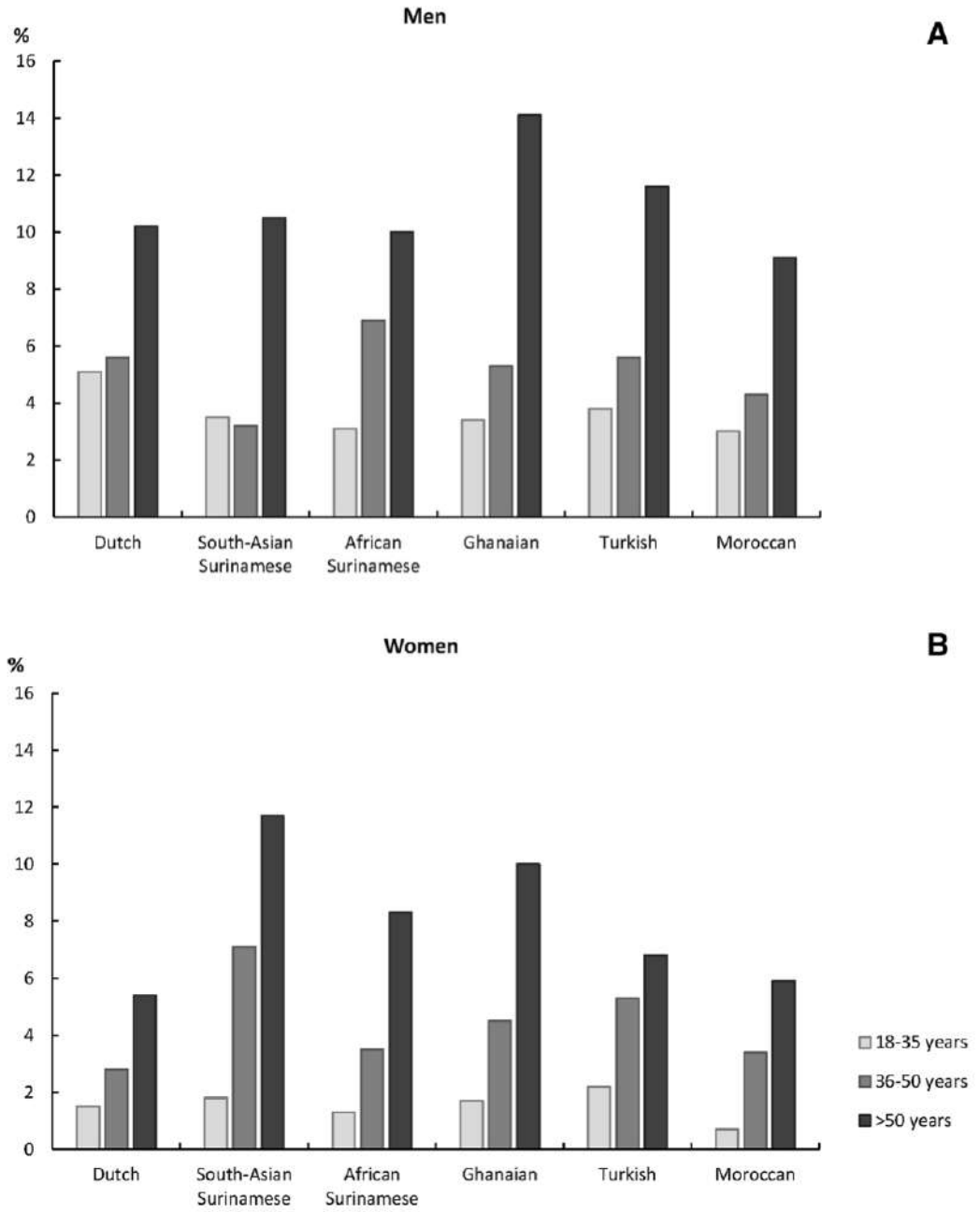
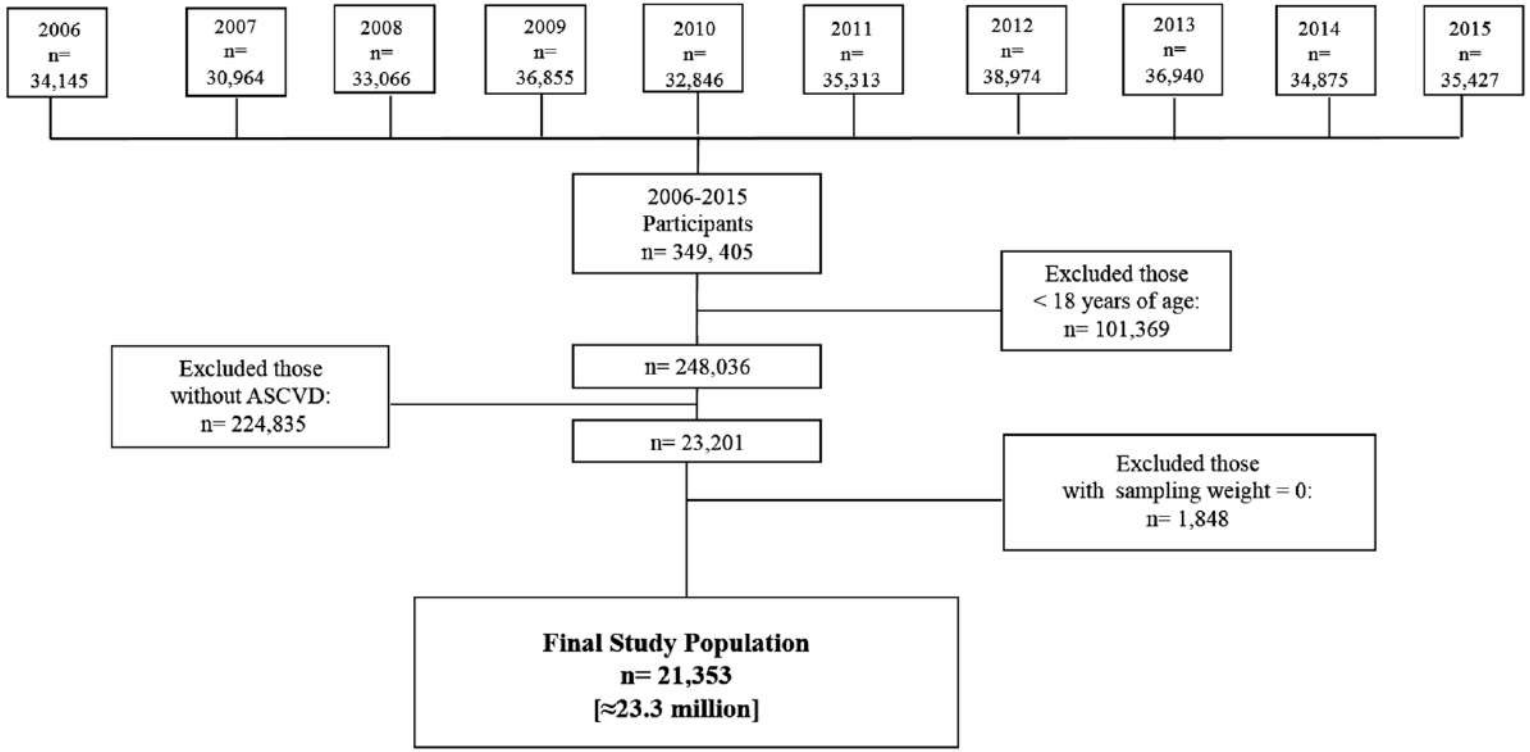
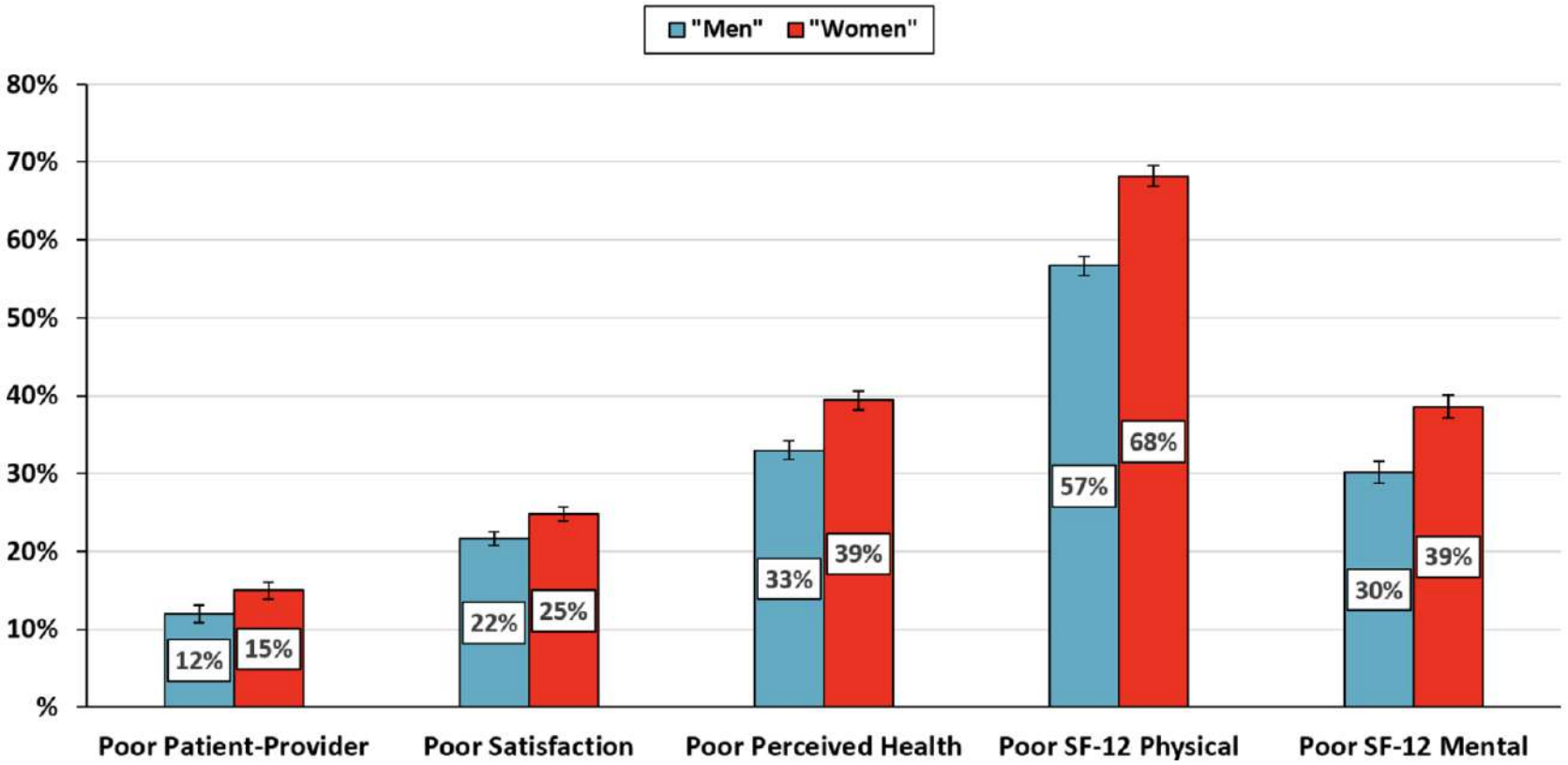


Figure 1 Prevalence of any major ECG abnormalities in men (A) and women (B) by age-groups and ethnicity.

Treatment and Outcomes



Treatment and Outcomes



Treatment and Outcomes

"Women's Health Research—Progress, Pitfalls, and Promise,"

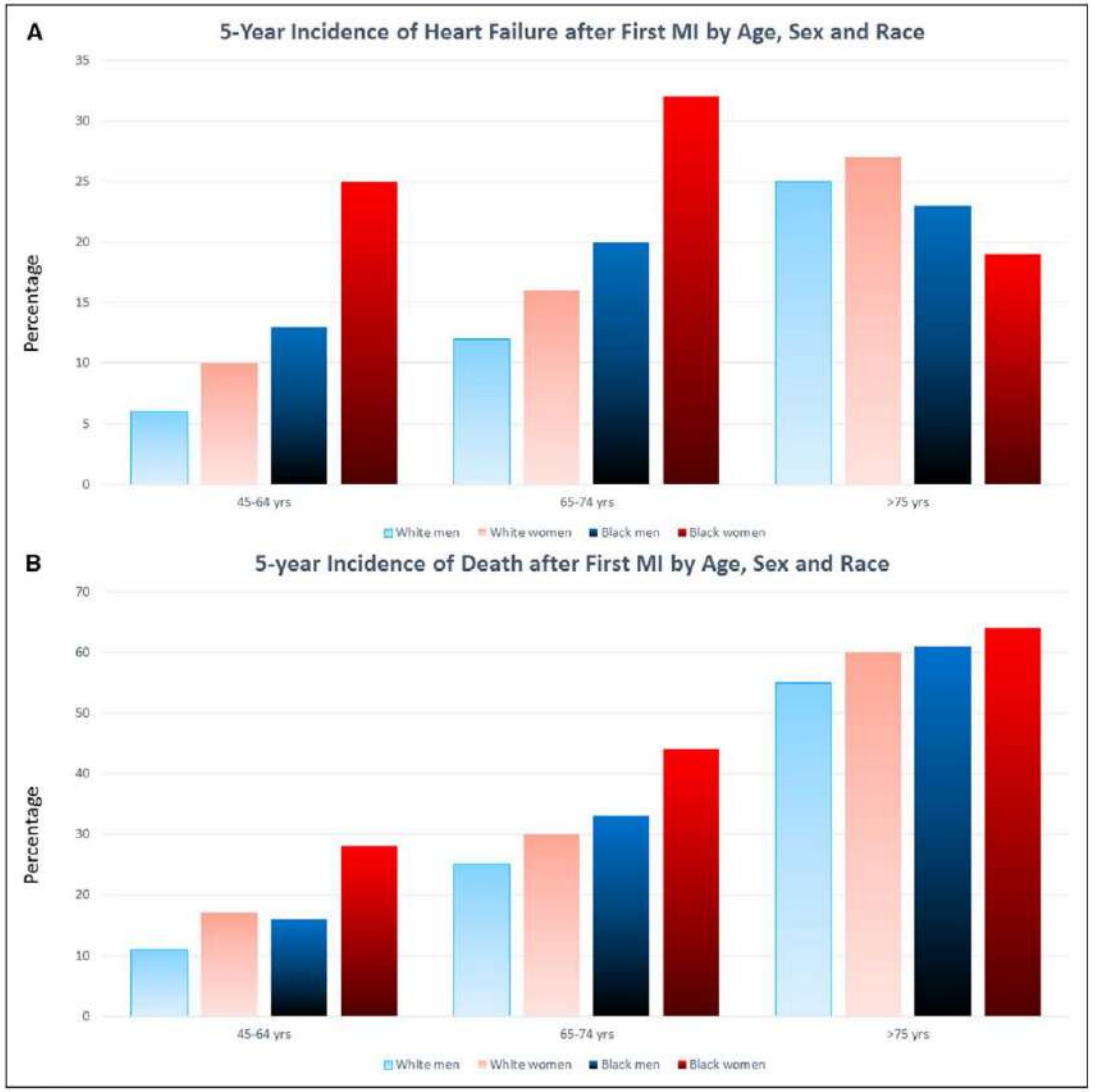


Figure 1. Five-year risk of heart failure and death after first MI by age, sex, and race.
Percentage of patients having (**A**) heart failure and (**B**) death 5 years after their first myocardial infarction, by age, sex and race. MI indicates myocardial infarction. Adapted from Benjamin et al.[2]

What about Kosovo?

How big is this problem in Kosovo?

Epidemiology of CAD in Kosovo

Gender differences in in-hospital outcome of patients with acute myocardial infarction undergoing percutaneous coronary intervention in Kosovo

HF Congress, Prague, Czech Republic, May 2023

Epidemiology of CAD in Kosovo

Type of study: Cross sectional descriptive study conducted at the Clinic of Cardiology of the University Clinical Centre of Kosovo;

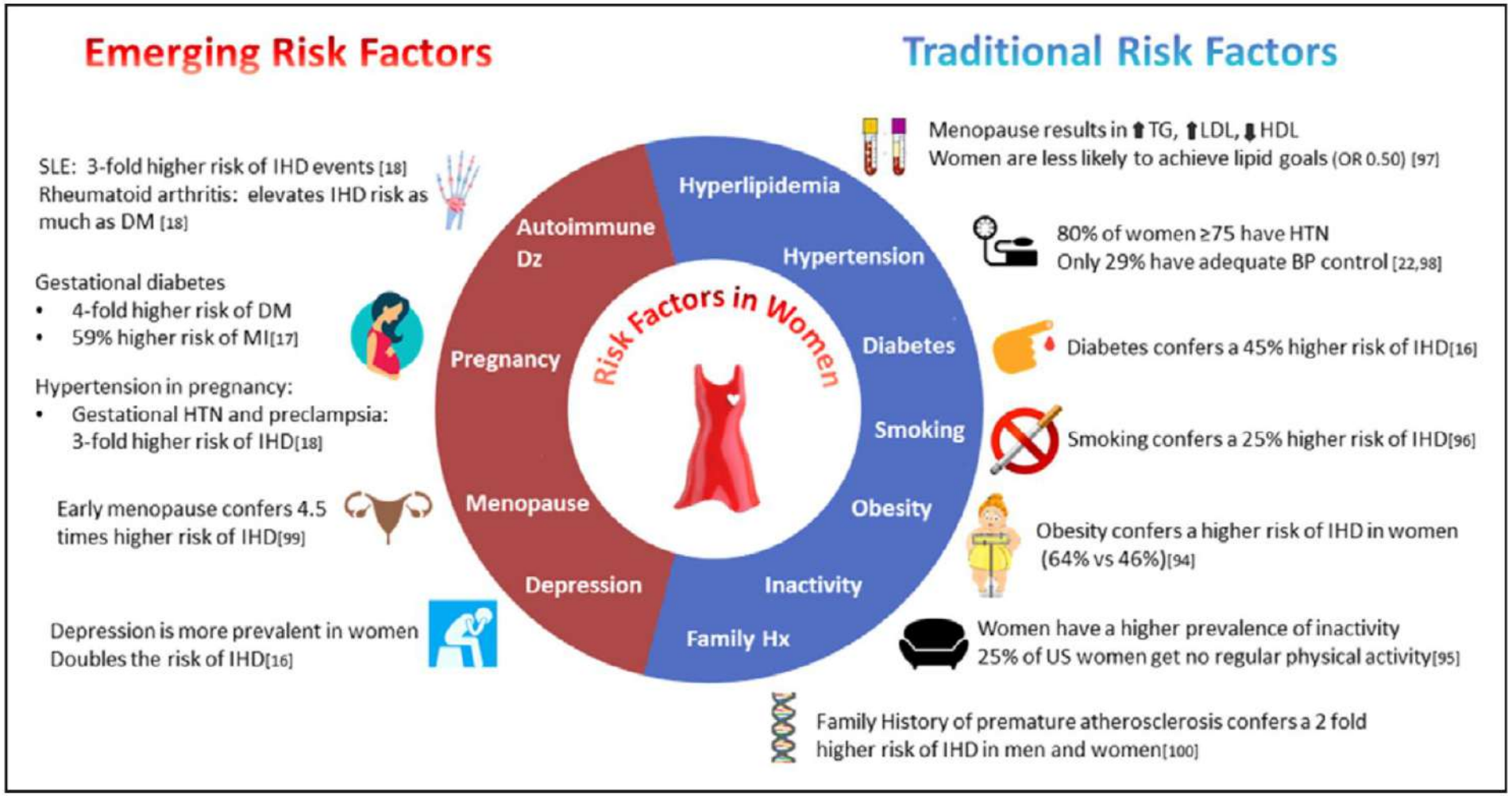
Collected data: 2014-2020

N =7353 admitted patients with MI (mean age 63±2 years, 29% female)

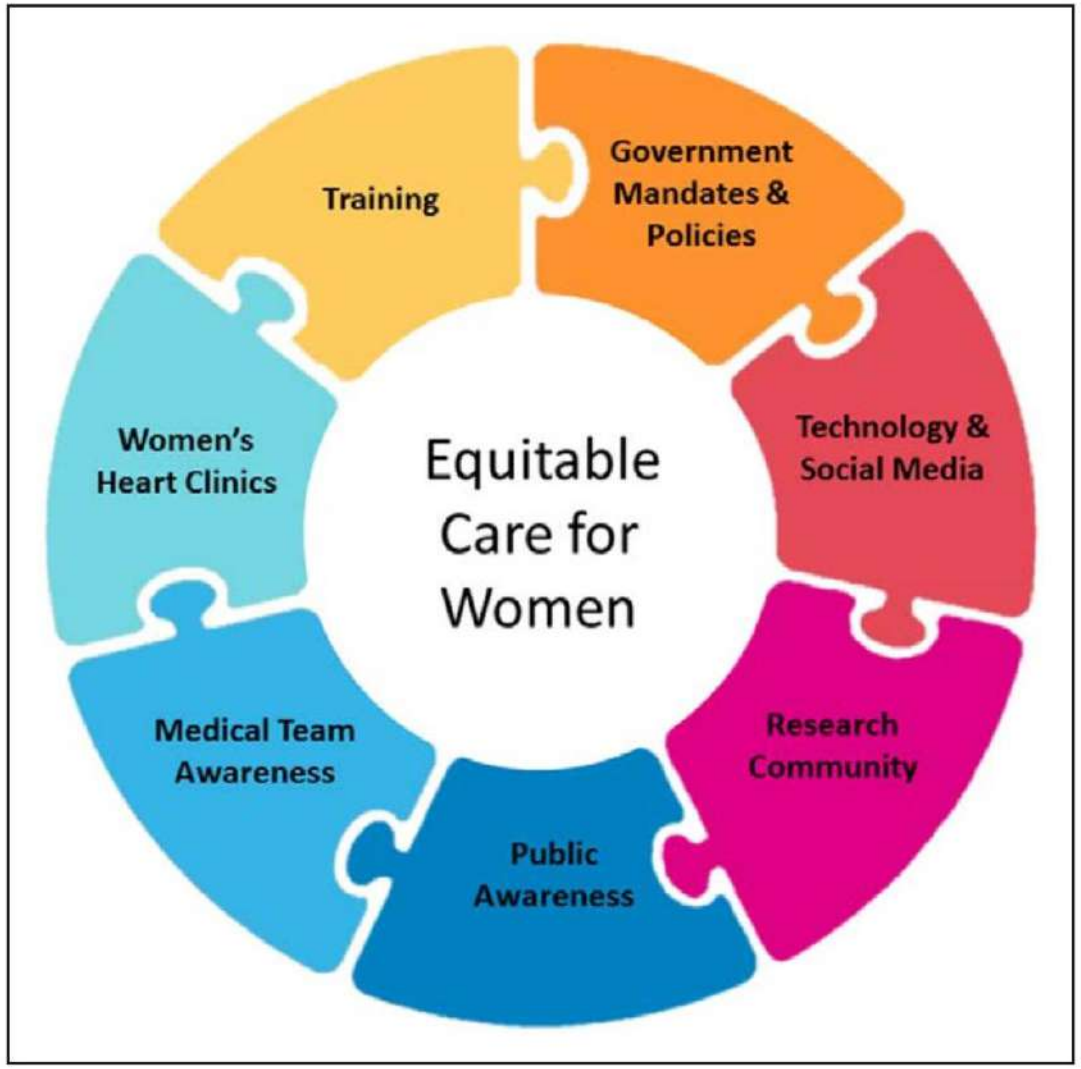
Results: Women were older (70±11 vs. 64±11 years, p<0.001), had more diabetes (49% vs. 38%, p<0.001), less smokers (26% vs. 61%, p<0.001), more presented with NSTEMI (43.6% vs. 36%, p<0.001) and with cardiogenic shock (5.9% vs. 2.9%, p<0.001).

Conclusions: Women hospitalized for acute MI and undergoing primary PCI in Kosovo are older, are more presented with NSTEMI, ↑ rate of cardiogenic shock and **↑rate of in-hospital death**, as compared with men.

Problemes….?


Emerging Risk Factors
SLE: 3-fold higher risk of IHD events [18]
Rheumatoid arthritis: elevates IHD risk as much as DM [18]
Gestational diabetes
• 4-fold higher risk of DM
• 59% higher risk of MI[17]
Hypertension in pregnancy:
• Gestational HTN and preclampsia: 3-fold higher risk of IHD[18]
Early menopause confers 4.5 times higher risk of IHD[99]
Depression is more prevalent in women
Doubles the risk of IHD[16]
Risk Factors in Women
Autoimmune Dz
Pregnancy
Menopause
Depression
Hyperlipidemia
Hypertension
Diabetes
Smoking
Obesity
Inactivity
Family Hx
Traditional Risk Factors
Menopause results in ↑TG, ↑LDL, ↓HDL
Women are less likely to achieve lipid goals (OR 0.50) [97]
80% of women ≥75 have HTN
Only 29% have adequate BP control [22,98]
Diabetes confers a 45% higher risk of IHD[16]
Smoking confers a 25% higher risk of IHD[96]
Obesity confers a higher risk of IHD in women (64% vs 46%)[94]
Women have a higher prevalence of inactivity
25% of US women get no regular physical activity[95]
Family History of premature atherosclerosis confers a 2 fold higher risk of IHD in men and women[100]

Solutions to equitable care for women



Take home message

- Highlight the necessity of taking into account **gender differences** in determination of the **cardiovascular risk profile**;

- A re-definition of clinical manifestations as “**typical of men**” and “**typical of women**” urges and might potentially improve prognosis

- **Psychosocial variables**, including perceived social support, depressive symptoms, and caretaking responsibilities, play an important role in influencing health-seeking behaviors and clinical outcomes in women.

- **Increased awareness of ischemic heart disease in women**, attention to social determinants of health, health and cultural literacy, improved adherence to sex-specific guidelines, and adequate inclusion of women in trials and clinical care.

Awareness of ischemic heart disease in women

Thank you