

## Cardiovascular risk factors and underlying pathology and prevalence of lipid plaques in women with acute coronary syndromes in different age groups

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**Background:** An incidence of cardiovascular events increases with age in women. The relationship between cardiovascular risk factors, and the underlying pathology and the prevalence of lipid plaques has not been systematically studied in different age groups in women presented with acute coronary syndromes (ACS).

**Purpose:** We investigated the underlying pathology and the prevalence of lipid plaques in the culprit lesion by optical coherence tomography (OCT) in women with different risk factors.

**Methods:** A total of 382 women who underwent pre-intervention OCT imaging were included. The underlying pathology and the prevalence of lipid plaques in the culprit lesion was compared between women with and without cardiovascular risk factors (i.e. hypertension, smoking, hyperlipidemia, diabetes mellitus, family history and chronic kidney disease) in three different age groups (<60 yr, 60–70 yr, >70 yr).

**Results:** The relative prevalence of plaque erosion was higher in younger women (<60 yr) and decreased with age (from 51% to 28%,  $p<0.001$ ).

There was no significant difference in the prevalence of lipid plaques between women with and without risk factors, except a higher prevalence of lipid plaques in current smokers compared to non-smokers (79% vs. 63%,  $p=0.003$ ). In women with hyperlipidemia, the prevalence of lipid plaques was modest in young ages (<60 yr), but increased steeply with age ( $p<0.001$ ). The increasing age trend for lipid plaque was also observed in women with hypertension ( $p=0.03$ ) and current smokers ( $p=0.01$ ). In women with diabetes mellitus and family history, the prevalence of lipid plaques was high even in young ages (<60 yr) and did not increase with age.

**Conclusion:** The prevalence of plaque erosion was higher in younger women (<60 yr) and decreased with age. Current smokers had significantly higher prevalence of lipid plaque. Patients with diabetes and positive family history had a higher prevalence of lipid plaque at young age. The prevalence of lipid plaques increased with age particularly in women with hyperlipidemia and hypertension.

