

## **COPD as a risk factor for Coronary Artery Disease (CAD): Overview of 10-year atherosclerotic cardiovascular disease (ASCVD) risk assessment**

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We aimed to investigate the association between COPD and CAD (overview of 10-year risk of fatal cardiovascular event), and the relation to the severity of airflow limitation.

Cross-sectional study including 220 patients with stable COPD as investigated group (IG), aged 40 to 75 years and 58 non-COPD subjects, matched by gender, age, BMI, smoking status, as control group (CG). All study subjects underwent pulmonary, cardiological evaluation, lipid and glycemic status.

The analysis compared the 10-year established ASCVD risk between COPD stages (according to GOLD classification 1, 2, 3, 4) and between IG vs. CG. ASCVD score was classified as low (score <5%), borderline (5 to <7.5%), moderate ( $\geq 7.5$  to <20) and high risk (score  $\geq 20$ ). Results presented statistically significant difference between mean ASCVD value in IG  $21,69 \pm 13,86\%$  vs. CG  $15,83 \pm 9,92\%$  ( $p=0.0028$ ). The median risk of ASCVD for fatal cardiovascular events was high in IG and moderate in CG. The mean and median values of 10-year ASCVD risk in the IG subgroups were: GOLD1  $16,79 \pm 8,04\%$  (50% of the subjects with risk >15,7%), GOLD2  $22,67 \pm 16,49\%$  (50% of the subjects with risk >20,6%), GOLD3  $26,81 \pm 14,15\%$  (50% of the subjects with risk >27,6%) and GOLD4  $20,70 \pm 13,52\%$  (50% of the subjects with risk >18,4%). The average ASCVD risk of fatal cardiovascular event was moderate in GOLD1 and GOLD4, and high in GOLD2 and GOLD3.

We found higher risk for fatal cardiovascular outcome in patients with COPD, even in the early COPD stages (GOLD2), compared to non-COPD group. Our findings suggest that an urgent need to develop comprehensive strategies for prevention, screening and early treatment are needed.

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