

# Exploring the relationship between smoking status and the total number of coronary arteries with significant stenoses in a young population with ST-segment elevation myocardial infarction

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**Background:** A plethora of studies have proven the increase in cardiovascular risk associated with smoking in all age groups<sup>1</sup>, including the one at the focus of this study – the young<sup>2,3</sup>. With regard to the total number of coronary arteries (CA) with significant stenoses, one might expect current smokers to have more affected CA than non- and former smokers. *Aim:* To explore the relationship between smoking status and the total number of CA with significant stenoses in a young ST-segment elevation myocardial infarction (STEMI) population.

**Patients and Methods:** Data were attained from medical records of 147 patients (mean age 43.9±6.5 years) hospitalized with STEMI at the University Hospital Centre Zagreb from January 2012 to October 2018, with a cut-off age at 45 years for men (n = 93) and 55 years for women (n = 54). Patients were divided in 2 groups based on smoking status – non- and former smokers (N = 29 (20%), with former smokers making up 9/29 or 31% of the group), and current smokers (N = 118 (80%)). To evaluate whether smoking status was associated with a higher total number of CA with significant stenoses, Pearson's chi-squared test was performed. During post hoc testing, the p value was adjusted to maintain the familywise error rate at 0.05 (p = 0.008) and compared to p values of each subgroup.

**Results:** The two groups had no significant differences in baseline characteristics (**Table 1**). In both groups, the majority of patients (58.6% vs. 74.6%) had only one affected CA, followed by two (27.6% vs. 19.5%) and three (13.8% vs. 5.9%) CA. Pearson's chi-squared test showed no statistically significant difference in the total number of affected CA between the two groups (p = 0.176). Post hoc testing confirmed statistically insignificant associations in all subgroups (p > 0.008, **Table 2**). In multiple regression (F (2, 144) = 9.27, p < 0.001, R<sup>2</sup><sub>adjusted</sub> = 0.10), age (B = 0.03, p = 0.001) and family history for cardiovascular disease (B = 0.30, p = 0.003) remained associated with the number of affected CA.

**TABLE 1. Patient characteristics.**

Characteristic	Non-smokers and former smokers (N = 29)	Current smokers (N = 118)	P-value
Age – years	43.4 ± 6.9	44.0 ± 6.4	0.698
Female sex – n (%)	10 (34.5)	44 (37.3)	0.780
Body mass index – kg/m <sup>2</sup>	29.6 ± 5.4	28.6 ± 4.8	0.290
Hypertension – n (%)	16 (55.2)	55 (46.6)	0.410
Diabetes mellitus – n (%)	2 (6.9)	10 (8.5)	0.782
Family history for cardiovascular disease – n (%)	16 (55.2)	65 (55.1)	0.993

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