IMPACT OF CIGARETTE SMOKING ON THE QUANTATIVE RISK OF DEVELOPING ACUTE ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION AND THE SUBSTANTIAL BENEFIT OF SMOKING

Poster Contributions
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Background: Cigarette smoking is a well-established risk factor for the development of coronary heart disease. However, the relationship between smoking and acute ST-segment elevation myocardial infarction (STEMI) is less well described. In the UK, the Department of Health reports that over a third of smokers believe that the dangers of smoking are exaggerated.

Methods: All patients admitted with acute STEMI undergoing primary PCI in South Yorkshire, England UK from 01/01/2009 to 06/04/2012 were studied. Additional contemporary demographic data for the South Yorkshire population, supplied by the Office for National Statistics allowed derivation of the incidence rate for acute STEMI in South Yorkshire - both overall and stratified by smoking status. Incidence rate ratios, a measure of relative risk in epidemiological studies, and population attributable risk (PAR) were calculated to quantify the risk of STEMI from smoking.

Main Results: There were 1715 STEMIs in 1680 patients during this time period. Smoking status was obtained in 96.2% of these: 49.1% were smokers, 27.2% were ex-smokers, and 23.7% were never smokers. In the general population, 22.4% were smokers. In those who experienced STEMI, those who were smokers were approximately 10 years younger (56.7 years (95% CI 55.88-57.49)) than never smokers (66.5 years (65.16-67.86)) and ex-smokers (67.6 (66.43-68.85)). Smoking prevalence was highest in the lowest socioeconomic status groups. The incident rate ratio of STEMI was 5.26 (4.51-6.14) for current smokers and 1.11 (0.97-1.27) for ex-smokers (with the reference group being never smokers for both). Almost 50% of STEMIs were due to smoking (PAR=48.8%).

Conclusion: Cigarette smoking is associated with a five-fold increased risk of acute STEMI. Smoking cessation reduces the risk of acute STEMI to a level comparable to a never smoker. Despite this great benefit, over 20% of the English population continue to smoke and may be unaware of the extent of the hazard. Targeted public health messages may encourage smoking cessation, with consequent reductions in mortality and morbidity.