The bizarre phenomenon of smokers’ paradox in the immediate outcome post acute myocardial infarction: an insight into the Malaysian National Cardiovascular Database-Acute Coronary Syndrome (NCVD-ACS) registry year 2006–2013

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Abstract

Background: ‘Smoker’s paradox’ is a controversial phenomenon of an unexpected favourable outcome of smokers post acute myocardial infarction. There are conflicting evidences from the literature so far. We investigate for the existence of this phenomenon in our post acute myocardial infarction patients.

Methods: We analysed 12,442 active smokers and 10,666 never-smokers diagnosed with STEMI and NSTEMI from the Malaysian National Cardiovascular Database-Acute Coronary Syndrome (NCVD-ACS) year 2006–2013 from 18 hospitals across Malaysia. Comparisons in the baseline characteristics, clinical presentation, in-hospital treatment and short term clinical outcome were made between the two groups. To compare the clinical outcome, an extensive multivariate adjustment was made to estimate the all-cause mortality risk ratios for both groups.

Results: The active smokers were younger (smokers 53.7 years vs non-smokers 62.3 years P < 0.001) and had lower cardiovascular risk burden and other co-morbidities. STEMI is more common in smokers and intravenous thrombolysis was the main reperfusion therapy in both groups. Smokers had a higher rate of in-hospital coronary revascularisation in NSTEMI group (21.6% smokers vs 16.7% non-smokers P < 0.001) but similar to non-smokers in the STEMI group. Multivariate adjusted mortality risk ratios showed significantly lower mortality risks of smokers at both in-hospital (RR 0.510 [95% CI 0.442–0.613]) and 30-day post discharge (RR 0.534 [95% CI 0.437–0.621]).

Conclusion: Smoking seems to be associated with a favourable outcome post myocardial infarction. The phenomenon of smoker’s paradox is in fact a reality in our patients population. The definitive explanation for this unexpected protective effect of smoking remains unclear.

Background

Smoking is a well established risk factor for cardiovascular disease (Chen and Boreham 2002). ‘Smoker’s paradox’ is, however, an observational phenomenon of an unexpected favourable outcome in smokers post acute myocardial infarction (MI). There has been great interest in this controversy over the past decades. Some suggest that the paradoxical favourable outcome is due to the more ‘thrombotic’ nature of MI in smokers as oppose to atherothrombotic in non-smokers and hence better reperfusion response after thrombolysis (Grines et al. 1995; Zahger

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