Application of a cardiovascular disease risk prediction model among commercial pilots

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ABSTRACT

Introduction: It has been suggested that integrated cardiovascular risk management guidelines and absolute cardiovascular risk prediction scores should be used routinely in aeromedical risk assessment. In this study a cardiovascular disease (CVD) risk prediction model has been applied to UK commercial pilots as an occupational group.

Method: This retrospective cross-sectional study measured the variables age, sex, body mass index (BMI), blood pressure, use of antihypertensive medication, current smoking, and diabetes status of commercial pilots. Individual 10-year absolute CVD risk scores (also referred to as 10-year global CVD risk) were calculated using a non-laboratory based Framingham Heart Study developed model.

Results: Of the 14,379 subjects eligible for the study, none had missing values for risk factors. None of the female pilots and 9.7% of all male pilots were found to be high risk. The mean 10-year absolute CVD risk for the entire pilot population was 8.41% (median 5.6). High-risk pilots are concentrated around 60 years of age, (mean 59, median 60 years) with an age range of 40–81 years. A sub-analysis of high-risk pilots younger than 65 revealed 1,137 pilots in this group.

Conclusion: The application of a 10-year absolute CVD risk prediction model identified a group of pilots, previously unidentified, who may require a more comprehensive risk assessment. Pilots are continuing to fly commercially beyond the age of 60, which results in substantial increase in the CVD risk burden of the pilot population as a whole.