



Title	Smoking Cessation and Mortality from Aortic Dissection and Aneurysm: Findings from the Japan Collaborative Cohort (JACC) Study
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論文内容の要旨

Synopsis of Thesis

氏名 Name	YANG YIYI
論文題名 Title	Smoking Cessation and Mortality from Aortic Dissection and Aneurysm: Findings from the Japan Collaborative Cohort (JACC) Study (禁煙期間と大動脈解離・瘤による死亡のリスクとの関連性：日本大規模コホート研究)
論文内容の要旨	
〔目的 (Objective)〕	
<p>Active cigarette smoking was intensively reported to increase the risk of aortic mortality while research on the association between smoking cessation and aortic mortality remains scarce. This study aimed to investigate the associations of exposure to cigarettes and smoking cessation with mortality from aortic diseases in a large Japanese population.</p>	
〔方法 (Methods)〕	
<p>A total of 110,585 individuals aged 40 to 79 years were enrolled at the baseline study in 1988-1990 for the Japan Collaborative Cohort (JACC) Study. Smoking behavior and covariate information were assessed using a validated questionnaire survey, and anthropometrics were measured through health checkup. Cigarette exposure was classified into categories of “Never, Former, and Current smokers with <15, 15-24, or \geq 25 cigarettes/day” as well as “Never smokers or Ever smokers with cumulative pack-years of <20, 20-39, or \geq 40”. Smoking cessation was classified into categories of “Current, former with 0-4, 5-9, 10-15, or $>$ 15 years of cessation, and never smokers”. A total of 91,141 residents (57\pm10 years; men, 43%) who were free of CVD and cancer and had complete smoking information were included and followed up until 2009 with a mean of 16.4 years, during which 110 aortic dissection deaths and 112 aneurysmal deaths were identified. Cox proportional hazard models were used to estimate multivariable hazard ratios (HRs) (95%CI) for total and specific aortic mortality associated with higher cigarette exposures comparing with the lowest level (never smokers). As for covariate adjustment, we included age, sex for model 1 and further included study area, body mass index, history of hypertension and diabetes, drinking status, education, occupation, perceived mental stress, walking, and sports. Sensitivity analyses were conducted as: 1) we adjust for competing risk of death from non-aortic cause; 2) we stratified the analysis by sex; 3) we delete aortic deaths happened with 5 years of baseline; and 4) we conduct multiple imputation (n=20) to replenish the missing values of covariates.</p>	
〔結果 (Results)〕	
<p>Compared to never smokers, HRs for total aortic mortality were 1.84 (1.07-3.15) for former smoker, 3.26 (1.95-5.44) for <15, 4.25 (2.66-6.77) for 15-24, and 3.91 (2.12-7.20) for \geq25 cigarettes/day. As for ever smokers, HRs were 2.39 (1.40-4.08) for < 20, 3.57 (2.19-5.83) for 20-39, and 3.92 (2.37-6.48) for \geq 40 pack-years exposure. Compared to current smoking, HRs for total aortic mortality were 0.42 (0.18-0.97) for 10-15 years, 0.27 (0.11-0.66) for $>$15 years of cessation, and 0.24 (0.13-0.44) for never smoking. Similar inverse dose-response pattern was observed between smoking cessation duration and risk of mortality from aortic aneurysm (p for trend=0.001), but the association with aortic dissection mortality did not reach statistical significance. Sensitivity analyses results showed no material difference from those of the major finding.</p>	
〔結語 (Conclusion)〕	
<p>Cigarette smoking was associated with an increased risk of aortic disease mortality while smoking cessation was associated with a reduced risk among the Japanese population, especially for aortic aneurysm.</p>	

論文審査の結果の要旨及び担当者

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論文審査の結果の要旨		
<p>本研究では、日本の大規模集団を対象に、喫煙および禁煙が大動脈解離と大動脈瘤という重篤な大動脈疾患による死亡率に及ぼす影響を調査することを目的とした。日本多施設共同コホート (JACC) 研究のデータを用い、1988-1990年の時点で40歳から79歳までの91,141人のデータを追跡し、2009年まで平均16.4年の追跡調査が実施され、110名の大動脈解離による死亡、112名の大動脈瘤による死亡が発生した。喫煙および禁煙の情報、その他の重要な関連要因は質問票と健康調査で収集された。</p> <p>結果として、Cox比例ハザードモデルを用いた多変量解析の結果、非喫煙者と比較して、元喫煙者の1.84倍(95%信頼区間1.07-3.15倍)から、1日25本以上の喫煙者での3.91倍(95%信頼区間2.12-7.20倍)となり、喫煙量と死亡リスクの間には用量依存的な関係が認められた。一方、禁煙の効果に関しては、禁煙期間が長くなるほど大動脈疾患による死亡リスクが低下する傾向が示され、特に、15年より長い禁煙を継続した群では、現在喫煙者と比較してリスクが0.27倍に低下し、非喫煙者(0.24倍)に近いことを明らかにした。</p> <p>結論として、本研究は喫煙が大動脈疾患、特に大動脈瘤による死亡リスクを増加させる一方で、禁煙、とりわけ15年より長い長期間の禁煙継続がリスクの有意な低下をもたらすことを示唆した。これらの知見は、大動脈疾患予防における禁煙の重要性を裏付けるものであり、博士(医学)の学位授与に値する。</p>		