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Health Atlas—Mapping the Acute Myocardial Infarction Incidence Rate in Denmark.

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INTRODUCTION: Coronary heart disease is a major cause of death in the Denmark with acute myocardial infarction (AMI) constituting a considerable proportion. AMI has severe consequences for the individual and society. The aim was to explore the geographical distribution of the incidence rate of AMI in Denmark. Accurate data on the population, disease and death enable the examination of spatial variation in AMI in Denmark using fine geographical resolution independently of administrative boundaries.

METHODS: The study population consisted of 3,501,621 Danish residents (≥30 years) of which 45,403 (2.7%) men and 28,634 (1.6%) women experienced an incident AMI in Denmark 2005–11 (fatal and non-fatal). Data on AMI, age, gender, addresses and geographical coordinates were obtained from national individual-level registers. The incidence rate (IR) for each geographical location (address) was estimated using a generalized linear model with a Poisson distribution, risk time as offset and adjusted for differences in age and gender. An interpolated map was derived by smoothing using inverse distance weighting of the estimated IR.

RESULTS: The crude IR rate was estimated at 405 and 238 cases per 100,000 person-years for men and women, respectively. The adjusted IR was estimated at 275 cases per 100,000 person-years (95% CI=[267; 284]). The IR map showed geographical differences with the range of estimates [251; 597] for men and [46; 270] for women.

CONCLUSIONS: Better knowledge of the geographical variation of AMI may lead to more appropriate allocation of treatment resources and improve our understanding of the etiology of AMI. Further studies are suggested for understanding the reason for the different geographical variation.