

Can cold weather be a cardiovascular determinant in warm countries?

J. Vasconcelos*¹²³, E. Freire¹, R. Almendra¹³, P.Santana³

¹CIAUD, Portugal; ²Polytechnic Institute of Leiria, Portugal; ³CEGOT, Portugal

Corresponding author: j.vasconcelos@ipleiria.pt

In almost every temperate region of the world, the number of cardiovascular mortality increases significantly during winter months. This phenomenon has been considered as a public health issue in several countries as many of these deaths are considered to be avoidable. The cause for the excess of winter deaths can be attributed to a number of factors, such as diet, exercise and exposure to cold weather. Curiously, southern European countries, such as Portugal, seem to have the highest excess winter deaths that seem to be related to exposure of cold.

However, very few studies have addressed this relationship in Portugal and no quantification of the role of cold weather on cardiovascular diseases has been published.

The main goal of this study is to quantify the short effect of cold weather on the cardiovascular morbidity in Portugal

Generalized additive Poisson regression models were used in order to obtain the influence of a thermal comfort index (PET) on daily hospitalizations for acute myocardial Infarction in the two most developed metropolitan areas of Portugal: Lisbon and Oporto.

All models were adjusted for time and other environmental variables. Influenza was also considered as a confounder.

The main results reveal an increase up to 2.2% (95% CI = 0,9%; 3,3%) of daily hospital admissions in winter per degree fall in PET. The increase in daily hospitalizations was greater for the entire population than when only the elderly (>65 years) were considered.