Cardiovascular Risk Assessment

There is a silver lining: carbon footprint reduction by holding Preventive Cardiology conference 2020 virtually

Batool T.[1]; Neven A.[1]; Vanrompay Y.[1]; Adnan M.[1]; Dendale P.[2]

[1]Hasselt University, Transportation Research Institute (IMOB), Hasselt, Belgium
[2]Virga Jesse Hospital, Department of Cardiology, Hasselt, Belgium

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Introduction: The transportation sector is one of the major sectors influencing climate change, contributing around 16% of total Greenhouse gases (GHG) emissions. Aviation contributes to 12% of the transport related emissions. Among other climate change impacts, elevated heat exposure is associated with increased cardiac events and exposure to air pollution caused by GHG emissions has also well-known association with increased cardiovascular related morbidity and mortality. The global temperature rise should be restricted to less than 2 °C which requires keeping carbon emission (CO2) less than 2900 billion tonnes by the end of the 21st century. Assuming air travel a major contributing source to GHG, this study aims to raise the awareness about potential carbon emissions reduction due to air travel of international events like a scientific conference.

Purpose: Due to the global pandemic of COVID-19, the Preventive cardiology conference 2020 which was planned to be held at Malaga Spain, instead was held in virtual online way. This study aims to calculate the contribution of reduced CO2 emissions in tons due to ESC preventive cardiology conference 2020, which was then held online and air travel of the registered participants was avoided.

Methods: Anonymized participant registration information was used to determine the country and city of the 949 registered participants of the Preventive Cardiology conference 2020. It is assumed that participants would have travelled from the closest airports from their reported city locations to Malaga airport, Spain. At first, the closest city airports were determined using Google maps and flights information, then the flight emissions (direct and indirect CO2-equivalent emissions) per passenger for the given flight distances were calculated. The CO2 emissions (tons) were calculated for round trips in economy class from the participants of 68 nationalities (excluding 60 participants from Spain as they are assumed to take other modes of transport than airplane).

Results: In total, 1156.51 tons of CO2 emissions were saved by turning the physical conference into a virtual event. This emission amount is equivalent to the annual CO2 production of 108 people living in high-income countries.

Conclusion: The pandemic situation has forced us to rethink the necessity of trips by air and has shown us the feasibility of digitally organized events. The information from this study can add to the awareness about reduced amount of carbon emission due to air travel by organizing events in a virtual way when possible. Apart from only digitally organized events there are others options to reduce the carbon footprint of conferences such as limiting the number of physical attendees, encouraging the use of relatively sustainable transport modes for participants from nearby countries (e.g. international trains and use of active transport modes at conference venue etc.) and including CO2 emission offsetting costs.