



POSTER

# Stroke and Air pollution: the effects of air quality in the number of ischaemic strokes in Lisbon

Filipa Proença<sup>1</sup>, Lia Neto<sup>1</sup>, João Madureira<sup>1</sup>, Pedro Teotónio<sup>1</sup>, Mário Mendonça<sup>1</sup>, Carla Guerreiro<sup>1</sup>, Francisco Raposo<sup>1</sup>, Manuel Correia<sup>1</sup>, and Graça Sá<sup>1</sup>

From the Lisbon Stroke Summit, Lisbon, Portugal. 5–6 April 2019.

## Abstract

**Background:** Stroke remains one of the leading causes of morbidity/mortality worldwide. Evidence from epidemiological studies has suggested an association between air pollution and ischaemic stroke, possibly related to increased blood coagulability and plaque rupture. The main air pollutants are particulate matter and gaseous pollutants, but the exact mechanism by which these pollutants promote stroke is poorly understood.

**Objectives:** To analyse the burden of the air quality levels in Lisboa/Vale do Tejo area and the number of endovascular treated-strokes in our center, between 2016-2018.

**Methods:** Between 2016-2018, 449 ischaemic strokes were admitted for endovascular treatment, 397 from the Lisboa/Vale do Tejo area. The air quality level was retrospectively analysed and divided as Good-Bad (according to particulate matter and gaseous pollutants - Good: index very good and

good; Bad: index medium, low and very low levels). This index was correlated with stroke cases, monthly and in the trimester before the event.

**Results:** In all the trimesters, except the 4th trimester/2017, the trimestral peak number of treated-strokes matched the exposure to the worst air-quality months in the 3 months before the procedures. Endovascular thrombectomies were mostly performed during October/2016 and November/2017, which were also the second worst months of its years, regarding air quality.

**Conclusion:** Air pollution is on par with “traditional” risk factors for cardiovascular disease and may have a close temporal association with ischemic stroke. Portugal’s global air quality index is currently far from optimal. A greater understanding of the genesis of this link and its true impact is important in order to improve public and environmental health policies.

<sup>1</sup>Neuroradiology Department, Centro Hospitalar Universitário Lisboa Norte, Lisbon, Portugal

Citation: Proença et al. Stroke and Air pollution: the effects of air quality in the number of ischaemic strokes in Lisbon. *International Journal of Clinical Neurosciences and Mental Health* 2019; 6(Suppl. 1):P23

Published: 04 April 2019



Open Access Publication Available at <http://ijcnmh.arc-publishing.org>

© 2019 Proença et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

