

URTICARIA, ANGIOEDEMA

## THE ASSOCIATION BETWEEN THE EXPOSURE OF AMBIENT AIR POLLUTION AND DAILY VISIT COUNTS OF PATIENTS WITH URTICARIA: A HOSPITAL-BASED CASE-CROSSOVER STUDY IN SOUTHERN TAIWAN

Hui-wen Tseng<sup>(1)</sup> - Ling-ying Lu<sup>(2)</sup> - Zong-yan Wu<sup>(3)</sup> - Chung Chang<sup>(3)</sup>

Kaohsiung Veterans General Hospital, Dermatology, Kaohsiung, Chinese Taipei<sup>(1)</sup> -Kaohsiung Veterans General Hospital, Medicine, Division Of Allergy, Immunology, Rheumatology, Kaohsiung, Chinese Taipei<sup>(2)</sup> - National Sun Yat-sen University, Applied Mathematics, Kaohsiung, Chinese Taipei<sup>(3)</sup>

Backgrounds: Ambient air pollution exposure has been reported to be increasingly associated with respiratory and cardiovascular diseases. Few epidemiological studies examined the association between air pollution and allergic skin diseases.

Objectives: The aim is to investigate the association between short-term change of ambient air pollution exposure and daily visit counts of patients with urticaria.

Methods: In this time-stratified case-crossover study, the diagnosis of urticaria and the number of daily visit counts in out-patients clinics were retrieved from the medical records of Kaohsiung Veterans General Hospital from Jan 1 2017 to Dec 31 2017. Ambient air pollution (carbon monoxide (CO), sulfur dioxide (SO2), ozone (O3), particulate matter (PM) 10, PM2.5, nitric oxide (NO), nitric dioxide (NO2)) data were retrieved from Taiwan Air Quality Monitoring Network databases. The analysis used generalized additive Poisson regression and adjusted for the one-day average temperature and humidity. The effect of lag days was also evaluated.

Results: The higher ambient air pollution values on the visit day and the previous lag days were significantly associated with increasing daily visit counts of patients with urticaria (daily visit counts: range 0-17 in each day; on the visit day: PM2.5: relative risk(RR)=1.01, p-value= 0.004; PM10: RR=1.004, p-value=0.02; the 2nd Lag days: CO: RR=2.65, p-value=0.002; SO2: RR: 1.08, p-value<0.001; PM2.5: RR=1.02, p-value<0.001; PM10: RR=1.01, p-value<0.001; NO2: RR=1.02, p-value=0.026; the 3rd lag days: O3: RR=1.01, p-value=0.004).

Conclusion: The higher values of ambient air pollution on the visit days and the 2nd or 3rd











previous lag days were significantly associated with the increasing daily visit counts of patients of urticaria.



24<sup>TH</sup> WORLD CONGRESS OF DERMATOLOGY MILAN 2019



International League of Dermatological Societies Skin Health for the World

