**Air pollution: what effects on acute community-acquired pneumonia?**

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**Introduction:** Many studies suggest that the level of exposure to pollutants can influence the development of chronic respiratory diseases, decline in respiratory function and death. However, few studies have examined the effects of air pollution on pneumonia.

**Aim :** To determine the impact of atmospheric pollutants on the severity and evolution of CAP.

**Methods:** Retrospective and analytical study including 50 patients hospitalized for acute community-acquired pneumonia (CAP) at the GABES university hospital during the year 2022. The severity of CAP was assessed by the Community-Acquired Pneumonia Severity Index (PSI). Concentrations of air pollutants (PM10, SO2, O3) were provided by the National Environmental Protection Agency.

**Results:** The average age is 63 years old. Smoking was noted in 44% of patients. Comorbidities were dominated by hypertension (56%) and diabetes (36%). At admission, the evaluation by the PSI score was: class I and II in 36% of cases, class III in 18 % of cases, class IV in 36% of cases and class V in 6 % of cases. During the study period, the average PM10 level was 0.0544±0.06 mg/m3 (0 to 0.98 mg/m3). The average concentration of ozone (O3) is 28.88±0.4 PPB (0.85-99 PPB). The average SO2 level was 0.109±0.08 PPM (0.0004 to 0.69 PPM). The SO2 level was associated with PSI severity score (p=0,019). The PM10 level was associated with clinical worsening in short term (after 48 hours of hospitalization), p=0.023.

**Conclusion:** Air pollution is a major environmental factor and its effect has been demonstrated on most respiratory diseases. Our study showed an association between exposure to SO2 and PM10 and the severity as well as the unfavorable evolution of CAP in the short term.