中文題目：一氧化碳濃度與在腹膜透析患者發炎指數的對應關係

英文題目：Environmental Carbon Monoxide Level Is Associated with the Level of High-Sensitivity C-Reactive Protein in Peritoneal Dialysis Patients

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Background: Inflammation is highly prevalent among peritoneal dialysis (PD) patients. High-sensitivity C-reactive protein (hs-CRP) is the most widely used inflammatory marker in clinical medicine and is correlated with mortality in PD patients. Air pollution is associated with systemic inflammation. The aim of this cross-sectional study was to assess the role of air pollutants and other clinical variables on hs-CRP values in PD patients.

Methods: We recruited a total of 175 patients who had been undergoing continuous ambulatory PD (CAPD) or automated PD (APD) for at least 4 months and regularly followed up. Air pollution levels were recorded by a network of 27 monitoring stations near or in the patients' living areas throughout Taiwan. The 1-year average concentrations of particulate matter (PM) with an aerodynamic diameter of <10 and <2.5 μm (PM10 and PM2.5), sulfur dioxide (SO2), nitrogen dioxide (NO2), carbon monoxide (CO), and ozone (O3) were included.

Results: hs-CRP level was positively correlated with CO level ($r = 0.162$, $p = 0.032$). Other air pollutants such as PM10 ($r = 0.005$, $p = 0.944$), SO2 ($r = 0.035$, $p = 0.649$), NO2 ($r = 0.12$, $p = 0.115$), O3 ($r = -0.079$, $p = 0.302$), and PM2.5 ($r = 0.068$, $p = 0.375$) were not significantly associated with hs-CRP. In stepwise linear regression, after adjustment for related factors, white blood cell count (β: 0.279, 95% CI [0.71, 2.116]) and CO level (β: 0.173, 95% CI [2.5, 21.32]) were positively associated with hs-CRP and serum albumin levels (β: -0.25, 95% CI [-13.692, -3.96]) and normalized protein nitrogen appearance (β: -0.183, 95% CI [-17.7, -2.51]) was negatively associated with hs-CRP. However, serum indoxyl sulfate and *p-cresyl* sulfate levels were not significantly associated with hs-CRP ($p > 0.05$).

Conclusion: In PD patients, the environmental CO level was positively correlated with hs-CRP level.