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Post-Traumatic Stress Disorder, Depression and Asthma Morbidity Among World Trade Center Workers

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Post-Traumatic Stress Disorder, Depression and Asthma Morbidity Among World Trade Center Workers

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RATIONALE: World Trade Center (WTC) workers suffer a high burden of asthma with cumulative incidence rates close to 30% and high levels of asthma morbidity. Comorbid post-traumatic stress disorder (PTSD) and depression are common and PTSD has been associated with worse asthma outcomes. In this study, we evaluated whether the relationship between PTSD and increased asthma morbidity is modified by presence of depression. **METHODS:** We used data from a prospective cohort of WTC workers with a physician diagnosis of asthma enrolled in the WTC Health Monitoring Program. Information about sociodemographic characteristics, asthma history, medications and level of control (Asthma Control Questionnaire [ACQ]); and comorbidities were collected during in-person interviews. We conducted structured clinical interviews to assess for PTSD and major depressive disorder (MDD). The adjusted association of PTSD and MDD with poor asthma control (ACQ>1.5) and decreased quality of life (AQLQ<4.5) were assessed using logistic regression analyses. **RESULTS:** The study cohort included 248 WTC workers with asthma (mean age 55±8 years, 25% female, 37% white, 23% black, 29% Hispanic). Overall, 19%, 2% and 12% of participants had a diagnosis of PTSD alone, MDD alone, or PTSD and MDD, respectively. WTC workers with PTSD and MDD had increased risk of poor asthma control (odds ratio [OR]: 7.0, 95% confidence interval [CI]: 1.9 to 26.1). Comparably, patients with PTSD alone (OR: 1.8, 95% CI: 0.8-3.8) or MDD (OR: 1.6, 95% CI: 0.3-9.2) did not have significantly higher odds of poor asthma control. The adjusted OR for poor quality of life were 2.0 (95% CI: 0.9-4.1), 3.2 (95% CI: 0.6-17.1), and 5.1 (95% CI: 2.0-13.2) for patients with PTSD alone, MDD alone, and PTSD and MDD, respectively compared to WTC workers without these conditions. **CONCLUSION:** Many WTC workers with asthma have comorbid PTSD and MDD. The interaction of these two mental health comorbidities appears to have a synergistic effect worsening asthma control and quality of life. Efforts to improve asthma outcomes in this population should address the negative impact of these common mental health conditions. Further work should explore the behavioral and biological mechanisms underlying these associations.

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