

Asthma Control, Treatment Patterns, And Self-Management Among Wtc Rescue And Recovery Workers

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Background: Asthma is one of the most common (~30% prevalence) conditions among the >50,000 workers that participated in the rescue and recovery effort that followed the terrorist attack on the World Trade Center (WTC) of 9/11 in 2001. While previous studies have documented the high prevalence of asthma, there is very limited data regarding the level of control, treatments received, and self-management behaviors of WTC workers with asthma.

Methods: For this 12-month longitudinal cohort study, we recruited WTC rescue and recovery workers ≥18 years with physician diagnosis of asthma. We excluded workers with a history of chronic obstructive lung disease, other chronic pulmonary diseases, or >15 pack-years smoking history. Participants underwent a face-to-face interview in English or Spanish using a standardized interviewer-administered survey based on validated instruments. We collected data regarding sociodemographics, asthma onset (pre vs. post 9/11), prior resource utilization, and asthma treatment (validated against a random sample of medical records). Asthma control was evaluated using the Asthma Control Questionnaire (ACQ). Medication adherence was assessed by self-report using the validated Medication Adherence Reporting Scale (MARS); scores >4.5 were considered as indicative of good adherence. Sensitization to indoor allergens was evaluated using allergen-specific IgE levels.

Results: There were 151 patients enrolled in the study as of October 2014. Mean (SD) age of 52.5±8.3 years, 68% male, 46% were White, 26% Black, and 50% Hispanic. Overall, 23% had asthma pre-9/11 and 77% developed asthma after WTC exposure. Rates of allergen sensitization were 37% for *D. farinae*, 34% for *D. Pteronyssinus*, 28% for cat, 27% for cockroach and ≤10% for all other indoor allergens tested. Overall, 14% (95% CI: 0.09-0.20), 75% (95% CI: 0.6774-0.8222), and 11% (95% CI: 0.06-0.17) had well-controlled, not well-controlled, and very poorly controlled asthma, respectively. Only 56% (95% CI: 0.47-0.64) of participants reported being prescribed an asthma controller medication. Rate of controller medication use was low regardless the level of control (55%, 60%, and 25% for patients with well-controlled, not well-controlled, and very poorly controlled asthma, respectively; p=0.03). Of those prescribed a controller medication, only 43% (95% CI: 0.32-0.54) were adherent.

Conclusions: A large proportion of WTC rescue and recovery workers have uncontrolled asthma and are not using controller medications. Consistent with asthmatics in the general population, medication adherence is relatively low. Optimization of medication regimen and increased adherence may positively impact the outcomes of WTC rescue and recovery workers with asthma.

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