Occupational lung diseases in Iraq and Afghanistan veterans

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A Wednesday morning session will explore the inhalational exposures and respiratory outcomes of military deployment to Iraq and Afghanistan. Presenters will review current knowledge on complex inhalational exposures, epidemiologic studies, animal toxicology studies, and clinical lung findings in U.S. military men and women who are returning from Southwest Asia.

D6 "Occupational Lung Diseases in U.S. Military Personnel Deployed to Iraq and Afghanistan" will take place from 8:15 to 10:45 a.m. in the Wells Fargo Theatre Section 1 on the street level of the Colorado Convention Center.

The symposium will interest researchers and clinicians alike, said co-chair Cecile S. Rose, MD, MPH, who is professor at National Jewish Health and the University of Colorado in Denver.

"We've described a new disease called Iraq-Afghanistan War lung injury (IAW-LI), among soldiers deployed to these countries as part of Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn" said Anthony Szema, MD, who will co-chair with Dr. Rose. "Not only do soldiers deployed to Iraq and Afghanistan suffer serious respiratory problems at a rate seven times that of soldiers deployed elsewhere, but the respiratory issues they present with show a unique pattern of fixed obstruction in half of cases, while most of the rest are clinically-reversible new-onset asthma, in addition to the rare interstitial lung disease called nonspecific interstitial pneumonitis associated with

inhalation of titanium and iron."

Iraq and Afghanistan veterans are faced with a barrage of respiratory insults, including: 1) dust from the sand, 2) smoke from the burn pits, 3) aerosolized metals and chemicals from exploded IEDs, associated with 4) blast overpressure or shock waves to the lung, 5) outdoor aeroallergens such as date pollen, and 6) indoor aeroallergens such as mold aspergillus. Dr. Szema and colleagues have experimentally exposed mouse models to samples of the dust taken from Iraq and Afghanistan and found that it produces extreme histological responses, underscoring the severe exposures that these soldiers undergo.

Robert Miller, MD, of Vanderbilt University will discuss constrictive bronchiolitis in a cohort of soldiers deployed to Iraq.

Researchers face a number of issues, Dr. Rose said. For one, "there is a lack of pre-deployment lung function data, making it impossible to determine the extent of the damage that these exposures can cause," she said.

Further challenges include the spectrum of possible lung diseases that may be occurring from Southwest Asia exposures, such as asthma, constrictive bronchiolitis, acute eosinophilic pneumonia and rhinosinusitis, and the variability in exposures that may confer risk, including particulate matter from desert dusts, burn pits, vehicle exhaust and tobacco smoke.

Clinicians face a different set of challenges with this patient population, including "the role of targeted medical surveillance in determining need for further respiratory diagnostic evaluation, and, importantly, the role of surgical lung biopsy in clinical diagnosis of post-deployment lung disease," she said.