Presentation 4 – Lea Steele

Research Advisory Committee on Gulf War Veterans' Illnesses

Update on Published Research

Lea Steele, Ph.D.

Update on Published Research

- Medical/Physiological
  - ALS Studies
  - PON-1 levels
- Exposures
  - Review of effects of chemical warfare on Gulf veterans
  - DU
- Consensus statement on unexplained symptoms
- Health effects of Bosnia deployment

Update on Published Research Medical: ALS Studies

- Occurrence of ALS among Gulf War veterans
  R Horner et al, Neurology 2003: 742-9

  Identified 40 ALS cases in Gulf vets, 67 cases in nondeployed vets

  ALS in all Gulf War vs. era veterans: RR = 1.92 (1.29-1.82)
  Air Force veterans only: RR = 2.68 (1.24-5.78)

  Using self-reported deployment status
  ALS in Gulf War vs. era veterans: RR = 2.74 (1.87 – 4.01)
  Air Force veterans only: RR = 5.38 (2.67 – 10.85)

Update on Published Research Medical: ALS Studies

- Excess Incidence of ALS in Young Gulf War veterans
  R Haley, Neurology 2003:750-6

  Identified 20 ALS cases, 17 had onset before age 45
  No access to cases identified by VA re3cords and ALS Association

  Compared number of diagnosed ALS cases in Gulf vets to expected number (based on ALS mortality rates in U.S. males)

- Found:
  1991-1994: Number of Gulf veteran ALS cases similar to expected
  1995-1998: Ratio observed/expected = 2.27 (1.27 – 3.88)
  1998 only: Ratio observed/expected = 3.19 (1.03 – 7.43)

Update on Published Research Medical: Paraoxonase

- Paraoxonase in Persian Gulf War veterans
  Hotopf et al, J Occup Environ Med 2003:668-75
- Measured serum PON1 in:
  - healthy Gulf War veterans
  - symptomatic Gulf War veterans
  - symptomatic Bosnia veterans
  - symptomatic nondeployed veterans
- Found:
  - PON1 activity did not differ in healthy vs ill Gulf vets veterans
  - PON1 activity was lower in Gulf cohort than other 2 cohorts

Update on Published Research Exposures: Chemical Agents

- Chemical Warfare and the Gulf War: A Review of the Impact on Gulf Veterans' Health
  JR Riddle, M Brown, T Smith, EC Ritchie, KA Brix, J. Romano
  Military Medicine 2003: 606-13.

  Reviewed evidence that nerve agents had adverse effects on Gulf veterans' health:
  - No reports of chemical nerve agent detection during the war
  - No confirmation of symptoms consistent with nerve agent exposures during the war
  - No evidence that nerve agents were used during the war
  - Acute/limited exposures without immediate symptoms do not produce lasting health effects
  - No increase in postwar hospitalizations or disease mortality in Gulf War vets
  - "Belief in" exposure to chemical weapons associated with illness

CONCLUSIONS: "Chemical warfare-nerve agent exposure is a very unlikely cause of the postulated 'Gulf War syndrome' or any illness among Gulf War veterans."
More research needed to understand the adverse health effects that result from a belief in chemical weapon exposure.

Update on Published Research Exposures: DU

Estimate of Time Zero Lung Burden of DU in Persian Gulf War Veterans by the 24-hour urinary excretion and Exponential Decay Analysis
A Durakovic et al Military Medicine 2003 168: 600-5.

In 11 Gulf vets, used 24-hour urine levels of uranium isotopes to estimate DU levels veterans experienced at time of exposure

No mention of association of DU levels with health

Undiagnosed Illnesses and Radioactive Warfare
A. Durakovic Croatian Medical Journal 2003: 520-32

Reviews history of war-related radiological exposures and their impact on military and civilian populations

Update on Published Research: Consensus Statement

- Unexplained Symptoms After Terrorism and War: An Expert Consensus Statement
  D Clauw et al, J Occup Environ Med 2003: 1040-1048

  Expert panel found that divergent/overlapping unexplained symptoms occur after wars and terrorist acts

  The consensus development project resulted from the work of an international planning committee that included representatives of federal agencies, veterans' service organization, and academia

Update on Published Research: Consensus Statement

- Unexplained Symptoms After Terrorism and War: An Expert Consensus Statement
  D Clauw et al, J Occup Environ Med 2003:1040-1048.

  Focused on 3 questions:

  Q1. What is the strength of evidence that war/terrorism/catastrophes cause unexplained symptoms?
  A1.Consistent evidence

  Q2. What scientific evidence is needed to conclude that an exposed population is suffering from a unique illness?
  A2. New conditions rare, better to use existing case definitions for CFS, FMS

  Q3. What is evidence that postwar conditions can be prevented or mitigated?
  A3. Little research available. Additional research needed.

Update on Published Research: Health Effects of Bosnia Deployment

- The Health Effects of Peacekeeping (Bosnia, 1992-1996): a cross-sectional study--comparision with nondeployed military personnel
  Hotopf M, et al. Military Medicine 2003 168: 408-13.

  Comparison of health status and symptoms between U.K. Bosnia and nondeployed Bosnia-era veterans

- **Found:**
  - Bosnia veterans similar to nondeployed era veterans on almost all health measures
  - Bosnia veterans reported slightly better physical function than era veterans
  - Deployed veterans reported more heavy use of alcohol
  - Health of both groups generally good
  - Bosnia veterans who had also served in the Gulf War had significantly worse health outcomes than those who had not.