Pain and Combat Injuries in Soldiers Returning from Operations Enduring and Iraqi Freedom

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Short Video

http://www.clermontyellow.accountsupport.com/flash/UntilThen.swf

http://www.youtube.com/watch?v=t9m06QFxb3o
THE NEW WAR ON PAIN

FROM BRAIN SCIENCE TO BATTLEFIELD MEDICINE, DOCTORS ARE FINDING INNOVATIVE WAYS TO COMBAT SHORT-TERM AND CHRONIC PAIN
Pain is a Critical Health Problem among Veterans

- Pain is one of the most common complaints in VA primary care
  - approximately 50% of patients
- Expected to be even more common and problematic in OEF/OIF veterans
The Changing Nature of Warfare

- High-explosive blast injuries, gunshot wounds, land mines, MVAs
- Higher intensity of conflicts: more casualties than in the PGW
The Changing Nature of Warfare

- Injuries changing → improved protective gear
- Extended duration of hostilities
- Long & repeated deployments
"In [Iraq], more than 91 percent of all casualties have survived their wounds, the highest survivability rate of any U.S. conflict."

Improvements in protective gear with Kevlar body armor and helmets shield vital organs, improving survival rates.

The majority of combat casualties involve injuries to vulnerable extremities that can sustain extensive tissue damage:

- major nerves, musculoskeletal structures, vasculature and soft tissues often resulting in mangled limbs and traumatic amputations.

(Mabry et al., 2000; Polly et al., 2004).
The Changing Nature of Warfare

- Changing demographics
  - Large # of Reserve and National Guard
  - Women higher % deployed troops than in any previous war
Retrospective cohort study of 970 OEF/OIF Veterans (Clark, Gironda, Walker)

- 47% had pain
- Of these, 28% had moderate to severe pain
  - Most common: low back, lower and upper extremities, cervical
  - Associated with functional limitations (pain-related disability)
Are you seeing many Veterans in your practice?
How can we welcome home our veterans?
Simple “Intervention”

Say: “Thank you for serving”
A Day in the life of a soldier...
Caring for Returning Veterans

To better care for returning veterans, we must first understand where our patients have been and what they have experienced:

- Trauma of war
- Physical and Emotional Stressors
Caring for Returning Veterans

- Ask for details of deployment, location, exposures, injuries
- Ask about stressors and coping responses
- Ask about psychosocial factors
- Assess substance use
- Ask about interpersonal violence
Most Common Injuries in Returning Veterans

▶ Musculoskeletal –
  ▶ Sports injuries, overuse syndromes, back injuries from
  ▶ carrying weapons and backpacks, traumatic injuries

▶ Psychiatric –
  ▶ Re-integration problems, PTSD, insomnia, isolation
  ▶ traumatic brain injury, depression
Caring for Returning Veterans

- VA & community health system must treat post-injury pain as a priority after military discharge:
  - To prevent pathophysiology:
    - Stop neuro-plastic changes, central sensitization
    - Arrest musculoskeletal dysfunction
Severe Polytrauma Pain: Possible Course

ACUTE PAIN

POST-ACUTE PAIN

Surgical Revision & Other Iatrogenic Pain

Breakthrough Pain

Transition to chronic pain via unremitting acute pain

Pain Associated with Prolonged Tissue Healing

Post-Traumatic Stress Reaction & Other Psychosocial Factors

CHRONIC PAIN
Phases of Military Care: Injured soldiers

**WAR ZONE EMERGENCY CARE:**
- Life support, stabilization

**SECONDARY CARE:**
- Initial surgery and further stabilization

**TERTIARY CARE:**
- Definitive injury care, restorative surgery, begin rehabilitation
Caring for Returning Veterans

- Prevent disability
  - Provide effective pain control
  - Rapidly restore function
Caring for Returning Veterans

- Post-injury pain as a priority after military discharge:
  - To prevent social consequences:
    - Job loss
    - Relationship loss
  - To prevent psychopathology
    - PTSD
    - Depression
    - Substance abuse
Unique Challenges in Caring for these Veterans

- VA and health system not accustomed to treating survivors of massive wounds from blast injuries
  - Head injuries causing other sensory disturbances besides pain
Unique Challenges in Caring for these Veterans

- Disfigurement and social stigma
- Cognitive and psychological damage
- Neuropsychiatric impairments
- Many pain generators
  - Polytrauma requiring rehabilitation
Problems of uncontrolled pain following traumatic injury*

- Immediate suffering
- Causing or worsening of chronic pain states
  - Hyper-stimulation of central neuronal pathways
  - Neural plasticity in the spinal cord and brain
  - Neuropathological remodeling and chronic pain states

* Early, Continuous, and Restorative Pain Management in Injured Soldiers: The Challenge Ahead
Sequelae of uncontrolled pain in Veterans

“Stress of prolonged uncontrolled pain and suffering and the stress of combat experiences contribute to problems in psychological adjustment and mental health disorders such as PTSD, depression and substance abuse following injury”

* Early, Continuous, and Restorative Pain Management in Injured Soldiers: The Challenge Ahead
Evaluation of Pain

- Unless you ask they won’t tell you! (Walker et al., 2007)
- Variable symptoms
- No cure, slow recovery rates
- High medical co-morbidities
Treatment Principles

- High co-morbid psychiatric disorder
- Increased risk of suicide (Tang Psych Med 2006)
- High violence risk
Treatment Principles

- Cognitive impairments – puts premium on physical examination for pain

- Pain differential:
  - Pain generators: tissues activating nociception
  - Pain mechanisms: neural, visceral, nociceptive, myofascial
  - Pain-related functional impairments
Treatment Principles

- Psychosocial evaluation (Thorne 2007)
  - Evaluate context:
    - Combat vs non-combat
    - Re-entry into non-combat environment
      - Family
      - Work
      - Social supports: friendships, faith, hobbies
    - Changed world view
    - Changed self-concept
Treatment Principles

- Assess for:
  - Anxiety / PTSD
  - Depression
  - Substance abuse
  - Family functioning
  - Occupational functioning
Recent animal and clinical evidence suggests that better pain care after injury leads to better outcomes.
Predictors of poor outcome before injury include:
- Alcohol abuse 1 month before injury (Marker, depression & substance abuse)
- Older age, lower education, low self efficacy (Gallagher et al. *Pain* 1989)

Predictors of poor outcome at 3 months post-injury
- Acute pain intensity, anxiety, depression and sleep disturbance
Responding to Challenges in Modern Combat Casualty Care: Innovative Use of Advanced Regional Anesthesia

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Continuous peripheral nerve block in combat casualties receiving low-molecular weight heparin


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CASE DISCUSSION
Useful Web Sites

- General VA Benefits and information: [http://www1.va.gov/health_benefits/](http://www1.va.gov/health_benefits/) General VA site for returning soldiers with many useful links
- [http://www.ncptsd.va.gov/topics/war.html](http://www.ncptsd.va.gov/topics/war.html)
  - PTSD information for clinicians and patients
Useful Web Sites

- **https://www.aw2.army.mil/**
  - Army Wounded Warrior Program-oriented more toward combat injured veterans

- **Walter Reed Medical Center main site**

- **Post Deployment Web site**
  - [http://www.pdhealth.mil/clinicians/default.asp](http://www.pdhealth.mil/clinicians/default.asp)
QUESTIONS/COMMENTS?

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