Evaluation of the Injured Worker

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Background

- University of Illinois Urbana Champaign Undergrad
- Ross University Dominica Medical School
- University of Chicago PMR
- University of Illinois Sports Medicine



Physical Medicine and Rehabilitation

- Enhance and restore functional ability and quality of life to those with physical impairments or disabilities affecting the brain, spinal cord, nerves, bones, joints, ligaments, muscles and tendons
- Maximize patients' independence in activities of daily living and improve quality of life
- Specialty is well suited to treat injured workers as restoration of functional ability is main focus



Physical Medicine and Rehabilitation

- Physiatry, Physiatrist
- First developed 1936
- Accepted by ABMS 1947
- Born out of treating injured soldiers
- Mix between non-operative orthopedics and neurology
- Outpatient focus on spine related pain, occupational injuries, overuse syndromes, and pain



Illinois Orthopedic Network

- All inclusive
 - Initial evaluation
 - Physiatrist, Anesthesiologist
 - Diagnostics
 - Imaging Referrals X-ray, CT, MRI
 - In-house lab
 - EMG/NCV testing



Illinois Orthopedic Network

- Treatment
 - Physical Therapy, Occupational Therapy, Work Conditioning
 - Pain medication management with in-house pharmacy
 - Interventional Procedures
 - In-house surgical center
 - Cervical and lumbar epidural steroid injections, radiofrequency ablation, spinal cord stimulators
 - Surgical intervention if necessary



Illinois Orthopedic Network

- Multiple locations Main 712 N. Dearborn St.
- Case management
- Quick Scheduling
- Progress Notes/Work Status
- Accreditations
 - The Joint Commission
 - The American Association for Accreditation of Ambulatory Surgery Facilities



Etiology

- In 2013, 1.1 Million musculoskeletal occupational injuries
- Men accounted for 61%
- Workers age 45-54 most missed days
- 212,000 back injuries
- Hand most common in upper extremity
- Knee most common in lower extremity



Risk Factors

- Heavy Physical Work
- Smoking
- High body mass index
- High psychosocial work demands
- Prolonged computer work
- Older age
- Repetitive work



Primary Prevention

- Exercise frequency correlated with reduction in LBP
- Educational interventions in biomechanics not effective
- PT lead programs improved subject knowledge
 - No reduction
 - LBP rate
 - Cost per injury
 - Time off work
 - Repeated injuries

Associated Conditions

- 95% of claimants personality disorder
- Pre-morbid depression more likely to develop chronic pain
- Prolonged unemployment increased physical and mental morbidity and mortality



Injured Worker Assessment

- History
- Physical Exam
- Functional Assessment
- Imaging
- Supplemental Assessment Tools



History

- Injury date
- Chief Complaint
- Mechanism of injury
- Occupational History
- Medical History



Physical Exam

- Objective findings
 - Reflex Asymmetry
 - Atrophy
- Self Limited
 - ROM
 - MMT
 - Sensory findings



Physical Exam

- Observation
 - Gait
 - Don/Doff clothes
 - Arising from a chair
- Waddell Signs
 - Suggest non-physiological etiology
 - Suggest Malingering



Functional Assessment

- Home activity
- Avoiding responsibilities at home
- Oswestry Disability Index



Imaging

- Considered when appropriate
- Negate or identify pathology
- Educate patients on abnormal findings
- Must correlate to symptoms
- Abnormal findings in asymptomatic individuals are common



Supplemental Assessment Tools

- Oswestry Disability Index (ODI)
 - Gold Standard for low back outcomes
 - Higher percentile = more disabiltiy
- Neck Disability Index (NDI)
 - Self reporting measure
- Short Form -36
 - Physical, emotional and social functioning



Predictors of outcome

- Protracted Recovery Predictors
 - Early use of opioid medications
 - Pre-morbid psychiatric illness
 - Excessive medical services



Environmental

- Job satisfaction vs. Job activity
- Multiple short duration jobs
- Work longevity
- Social support from supervisors
- Depression
 - Loss of identity
 - Financial loss
 - Home stress

Treatment

- RICE for acute injuries
- Physical Therapy
- Occupational Therapy
- Pain medications
- Interventional Procedures
- Work Conditioning
- Work Hardening
- MMI



Coordination of Care

- Team members
 - Patient
 - Physician
 - Therapist
 - Employer
 - Insurance Carrier
 - Attorney



Coordination of Care

- Return to work restrictions
 - Provided to patient and insurance carrier after each visit
- Prompt clinic notes
- Insurance carrier promptness
- Therapist interaction with physician
- Employers effort to accommodate
- Consistent feedback



Patient and Family Education

- First visit
 - Expectations
 - Goals
- Work restrictions
- Employers decision whether to accommodate
- Family members with poor outcome
- Encourage activity



Pearls

Identification of risk factors

Avoid time loss at work

- Integrating cognitive behavior techniques
- Focus on function goals



Case Study #1

- 45-year-old male presents with LBP secondary to a work related lifting injury.
- Radiating pain vs. non-radiating pain
- Therapy
- Interventional Procedure
- EMG
- Surgical intervention



Case Study #2

- 52-year-old female presents with bilateral hand numbness, tingling, and weakness reported after repetitive work.
- Inciting factors
- Worse at night
- OT, night splints
- Imaging, EMG
- CTS release



Billing

• Illinois Workers Compensation Fee Schedule



Questions?????





References

- 1. US Department of Labor. Bureau of Labor Statistics USDL-14-2246.
- 2. Da Costa, BR., Vieira, ER. Risk Factors for Work-Related Musculoskeletal Disorders: A systematic Review of Recent Longitudinal Studies. *American Journal of Industrial Medicine* 53:285-323 (2010)
- 3. van Duijvenbode IC, Jellema P, van Poppel MN, van Tulder MW. Lumbar supports for prevention and treatment of low back pain. <u>Cochrane Database Syst Rev.</u> 2008 Apr 16;(2)
- 4. Oleske DM, Lavender SA, Andersson GB, Kwasny MM. Are back supports plus education more effective than education alone in promoting recovery from low back pain?: Results from a randomized clinical trial. *Spine* 2007 Sep 1;32(19):2050-7
- 5. Trinkoff A, Brady B, Nielsen K. Workplace prevention and musculoskeletal injuries in nurses. *J Nursing Administration*. 33 (3):153-158 2003 12629302
- 6. Aleksiev, AR, Ten-year follow-up of strengthening versus flexibility exercises with or without abdominal bracing in recurrent low back pain. *Spine* 2014 Jun 1;39(13):997-1003.
- 7. Daltroy LH, Iversen MD, Larson MG, Lew R, Wright E, Ryan J, Zwerling C, Fossel AH, Liang MH. A controlled trial of an educational program to prevent low back injuries. *N Engl J Med*. 1997 Jul 31;337(5):322-8.
- 8. Demoulin C, Marty M, Genevay S, Vanderthommen M, Mahieu G, Henrotin Y. Effectiveness of preventive back educational interventions for low back pain: a critical review of randomized controlled clinical trials. *European Spine J.* 2012 Dec;21(12):2520-30.
- 9. Gatty CM, Turner M, Buitendorp DJ, Batman H. The effectiveness of back pain and injury prevention programs in the workplace. *Work*. 2003;20(3):257-66.
 - 10. Bhimani R. Prevention of work-related musculoskeletal injuries in rehabilitation nursing. Rehabilitation Nursing. 2014 Nov 25.

References

- 11. Li EJ, Li-Tsang CW, Lam CS, Hui KY, Chan CC. The effect of a "training on work readiness" program for workers with musculoskeletal injuries: a randomized control trial (RCT) study. *J Occupational Rehabilitation*. 2006 Dec;16(4):529-41..
- 12. Cheadle A, Franklin G, Wolfhagen C, Savarino J, Liu PY, Salley C, Weaver, M. Factors influencing the duration of work-related disability: a population-based study of Washington State workers' compensation. *American Journal of Public Health* 1994: 84: 190-196
- 13. Dersh J. Prevalence of psychiatric disorders in patients with chronic disabling occupational spinal disorders. *Spine*. 2006 May 1;31(10):1156-62
- 14. Barth RJ. Chronic Pain: Fundamental Scientific Considerations, Specifically for Legal Claims. AMA Guides Newsletter, Jan/Feb 2013. American Medical Association
- 15. Waddell G & Burton AK. Is Work Good for Your Health and Well-Being? The Stationary Office (UK government). 2006.
- 16. Boden SD, Davis DO, Dina TS, Patronas NJ, SW Wiesel. Abnormal magnetic-resonance scans of the lumbar spine in asymptomatic subjects. A prospective investigation. J Bone Joint Surg Am. 1990;72:403-408.
- 17. Bigos SJ, Battié MC, Spengler DM, Fisher LD, Fordyce WE, Hansson TH, Nachemson AL, Wortley MD. A prospective study of work perceptions and psychosocial factors affecting the report of back injury. Spine (Phila Pa 1976). 1991 Jan;16(1):1-6
- 18. Schaafsma FG, et al. Physical conditioning as part of return to work to reduce sickness absence for workers with back pain. Cochrane Database Systemic Review 2013 Aug 30;8.
- 19. Gross DP1, Battié MC Functional capacity evaluation in patients with chronic low back pain: part 2: sustained recovery. *Spine* (Phila Pa 1976). 2004 Apr 15;29(8):920-4.
- 20. Della-Posta C; Drummond PD. Cognitive behavioral therapy increases re-employment of job seeking worker's compensation clients. *Journal of Occupational Rehabilitation*. 16(2):223-30, 2006 Jun