

Abstract: Hospital records were analyzed to determine the effectiveness of anticoagulants, prophylactic heparin, and antiplatelets in preventing venous thromboembolism (VTE) in stroke patients during acute rehabilitation. Results showed that among the 1,506 eligible patients, 58 (3.9 percent) VTE events occurred. After adjusting for multiple medication use and other factors, therapeutic anticoagulation gave the strongest protection against VTE, followed by heparin, but not by antiplatelet agents. No medications were associated with significant bleeding complications.

Walker, W., Seel, R. (2004) **The effects of Donepezil on traumatic brain injury acute rehabilitation outcomes.** *Brain Injury*, 18(8), 739-750. NARIC Accession Number: J50148. Project Number: H133A020516.

Abstract: Study evaluated the effects of administering Donepezil during inpatient rehabilitation to 36 patients with traumatic brain injury (TBI). Main outcome measures include Functional Independence Measure cognitive scores and rehabilitation lengths of stay. No difference in cognitive improvement was observed between the treatment group and a matched control group. Sub-set analysis indicated that administration of Donepezil early in the rehabilitation stay was significantly related to higher rates of cognitive improvement.

Glenn, M., Wroblewski, B. (2005) **Twenty years of pharmacology.** *Journal of Head Trauma Rehabilitation*, 20(1), 51-61. NARIC Accession Number: J49715. Project Number: H133A020513.

Abstract: Article reviews changes in pharmacology that have occurred over the past 20 years that have benefited people with traumatic brain injury. New anticonvulsants, antidepressants, and antipsychotics that have been developed with fewer cognitive side effects are described.

Conroy, B., Zorowitz, R. (2005) **An exploration of central nervous system medication use and outcomes in stroke rehabilitation.** *Archives of Physical Medicine and Rehabilitation*, 86(12, Supplement 2), S73-S81. NARIC Accession Number: J50102.

Project Number: H133B990005.

Abstract: Study examined the relationship between the use of neurotropic medications and stroke rehabilitation outcomes, controlling for a variety of confounding variables based on data from the Post-Stroke Rehabilitation Outcomes Project (PSROP), a multi-site study of stroke rehabilitation outcomes. Data were analyzed for 919 patients from 6 inpatient rehabilitation facilities participating in the PSROP. Outcome variables included discharge disposition, change in Functional Independence Measure (FIM) scores from admission to discharge, and rehabilitation length of stay (LOS). Results showed that neurobehavioral impairments and use of many medications, including first-generation selective serotonin reuptake inhibitors, older traditional antipsychotic medications, and anti-Parkinsonian neurostimulants, were statistically associated with poorer outcomes, whereas the use of atypical antipsychotic medications had a positive association with improvement in motor FIM scores. Use of opioid analgesics was associated with a larger FIM motor score change but not an increase in LOS or reduced percentage of discharge to the community. Other articles from the Post-Stroke Rehabilitation Outcomes Project are available under accession numbers J50455 through J50459.

Kahan, J., Mitchell, J. (2006) **The results of a 6-month treatment for depression on symptoms, life satisfaction, and community activities among individuals aging with a disability.** *Rehabilitation Psychology*, 51(1), 13-22. NARIC Accession Number: J50247. Project Number: H133B031002; H133B980024.

Abstract: Study examined the effects of a treatment intervention for people living in the community who were aging with a disability. The six-month intervention combined psychotherapy and antidepressant medication. Symptoms of depression, life satisfaction, and community activity participation were compared for 54 subjects who received treatment and 22 individuals who declined treatment. Results showed that treated subjects improved significantly on all three measures. These findings suggest that depression is treatable in this population.

(2006) Thinking ahead . . . A drug for fatigue? 7(2). NARIC Accession Number: O16502. Project Number: H133A980020.

Abstract: Newsletter of the Research Department of the Rocky Mountain Regional Brain Injury System at Craig Hospital, designed for research participants and their families. This issue examines research conducted on a drug to reduce the sleepiness and fatigue experienced by people with traumatic brain injury (TBI). The drug is Modafinil and is often prescribed or sold under the name Provigil.

This document is available to download at craighospital.org

NARIC is operated by HeiTech Services, Inc., for the National Institute on Disability and Rehabilitation Research under contract number ED-05-CO-0007.

RehabWire
News from the National
Rehabilitation Information
Center

**Pharmaceutical Interventions
in Rehabilitation**

Volume 10, Number 2, March 2008



NIDRR Grantees on the Cutting Edge

New York Traumatic Brain Injury Model System (NYTBIMS), Mount Sinai School of Medicine (H133A020501) led by Wayne A. Gordon, PhD. A. Cate Miller, PhD, Project Officer.

Abstract: This project advances the understanding of TBI and its consequences and improves rehabilitation outcomes. The research projects focus on depression and fatigue, impairments that limit participation in community and vocational activities: Treatment of Post-TBI Depression is a randomized clinical trial to examine the efficacy of sertraline (Zoloft) in the treatment of depression and anxiety after traumatic brain injury. Study of Post-TBI Fatigue and its Treatment investigates the components, consequences, and correlates of post-TBI fatigue, and in a randomized clinical trial, evaluates the benefits of modafinil (Provigil) to treat fatigue in individuals with TBI.

Find out more at: www.mssm.edu/tbicentral/nytbims/

Pediatric Burn Injury Rehabilitation Model System, University of Texas Medical Branch (H133A070026) led by David Herndon, MD. Theresa San Agustin, MD, Project Officer.

Abstract: This program conducts independent and multi-center projects focusing on evaluating and improving the rehabilitation provided to children with burn injuries, striving to decrease disability and improve reintegration into society. The model system includes one collaborative project assessing the efficacy of long term use of propranolol in the treatment of burn injury (in adults and children) with endpoints of improved survivability, improved cardiovascular condition, greater energy, improved muscle endurance, improved growth in children, and decreased anxiety. The project also includes a site-specific study to improve rehabilitative outcomes for children with greater than 40 percent total body surface area burned by combining an anabolic agent (oxandrolone, Ketoconazole, or propranolol) with a 3-month intensive outpatient rehabilitation program. The supervised exercise program has shown to be effective in ameliorating effects of the hypermetabolic response. This project assesses the effectiveness of combining the anabolic agents and the exercise program with the expectation that the effects will be additive and will improve linear growth, bone mass, muscle strength, lean body mass, physical function, and general well-being.

The Moss Traumatic Brain Injury Model System, Albert Einstein Healthcare Network (H133A070040) led by Tessa Hart, PhD. A. Cate Miller, PhD, Project Officer.

Abstract: The Moss TBIMS includes site-specific research projects embedded within a state-of-the-art traumatic brain injury (TBI) treatment and clinical research facility. Project

Physical and occupational therapy may be the best known forms of rehabilitation, but rehabilitation medicine is much broader. These projects are re-searching new and established drugs to treat brain injury, burn injury, and stroke. Combined with PT, OT, and many other rehabilitation tools and treatments, these drugs help people with disabilities to return to full lives.

Please note: These abstracts have been modified. Full, unedited abstracts, as well as any available REHABDATA citations, are available at naric.com.

Thousands of additional resources on these topics are available from NARIC's resource pages at www.naric.com/public

NIDRR's Health and Function priority focuses on the development and testing of new interventions that improve functional and health outcomes for individuals, and on the organization and delivery of health care and medical rehabilitation services

1 is a placebo-controlled pilot study of the effects of dextroamphetamine (DEX) on attention, engagement in therapy, cognitive and motor speed, and other outcomes in subacute TBI. This project also examines the possibility that DEX accelerates the pace of functional recovery in the subacute phase. Find out more at: www.einstein.edu/facilities/mossrehab/index.html

Carolinas Traumatic Brain Injury Rehabilitation and Research System (CTBIRRS), *Charlotte Mecklenburg Hospital Authority* (H133A070042) led by Flora M. Hammond, MD. A. Cate Miller, PhD, Project Officer.

Abstract: The Carolinas Traumatic Brain Injury Rehabilitation and Research System (CTBIRRS) is a comprehensive service delivery and research system serving individuals with traumatic brain injury (TBI). The research of this Model System focuses on the challenging problem of post-traumatic irritability and aggression using a comprehensive, rigorous approach to generate and disseminate new knowledge on this high impact, pervasive, and under-studied problem. This approach to understanding irritability entails two randomized, controlled studies that build on a solid base of prior research by the investigators in this area: (1) a multi-center module study: "A Multi-center, Parallel-group, Randomized, Double-blind, Placebo-controlled Trial of Amantadine Hydrochloride for the Treatment of Chronic TBI Irritability and Aggression: A Replication Study;" and (2) a local research study: "Carbamazepine for the Treatment of Chronic Post-TBI Irritability and Aggression: A 42-day Single-site, Forced-titration, Parallel Group, Randomized, Double-blind, Placebo-controlled Trial."

Find out more at: www.carolinas.org/services/rehab/CIR/brain_system.cfm

Use of Functional Neuroimaging to Assess the Status of the Attention Networks Following Traumatic Brain Injury, *Albert Einstein Healthcare Network* (H133G050219) led by John Whyte, MD, PhD. A. Cate Miller, PhD, Project Officer.

Abstract: Traumatic brain injury (TBI) is a common cause of disability, particularly in young adults. Survivors of TBI frequently suffer from persistent cognitive impairments that interfere with the rehabilitation process, as well as return to school, work, and community life. Difficulties with attention, including distractibility, difficulty concentrating, difficulty dividing attention (multi-tasking), and cognitive fatigue during effortful tasks, are among the most frequent complaints of survivors of TBI and their caregivers. This project studies the behavioral response and neural network activation patterns associated with performance of three tasks designed to rely heavily on the three distinct attention networks: vigilance, executive, and orienting. The study compares uninjured control participants to survivors of severe TBI, with respect to both behavior and brain activation studied with perfusion, and fast event-related BOLD functional magnetic resonance imaging. The study also compares the performance of TBI survivors on active drug and placebo in two separate pharmacologic probe studies, using single doses of bromocriptine (a D2 dopaminergic agonist) and nicotine (a nicotinic cholinergic agonist), predicting different patterns of responses to the two agents.

Augmenting Language Therapy for Aphasia: A Randomized Double-Blind Placebo-Controlled Trial of Levodopa in Combination with Speech-Language Therapy, *Rehabilitation Institute Research Corporation* (H133G070074) led by Leora R. Cherney, PhD. Dawn Carlson, PhD, MPH, Project Officer.

Abstract: This randomized, double-blind placebo, controlled clinical trial evaluates the effect of the pharmacologic agent, levodopa, in combination with speech-language treatment, on the language outcome of patients with chronic, nonfluent aphasia. New evidence is suggesting that levodopa, a

The Center for Drug Evaluation and Research at the Food and Drug Administration

oversees approvals for prescription, generic, and over-the-counter drugs. For an indepth look at the drug approval process, read *From Test Tube to Patient: Protecting America's Health through Drugs* at www.fda.gov/fdac/special/testtubetopatient/default.htm



Photo by Georgios Wollbrecht

Where Can I Find More?

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precursor to dopamine, may be preferred since it has the potential to increase the presynaptic availability of dopamine, thereby enhancing phasic dopamine signals which are important for learning enhancement. Accordingly, the specific aims of this clinical trial are to assess whether: (1) levodopa in combination with speech-language therapy improves language performance; (2) levodopa in combination with speech-language therapy improves language performance more than speech-language therapy alone; and (3) improvements in language performance resulting from combined levodopa and speech language therapy are maintained over time to a greater extent than improvements resulting from speech-language therapy alone. The intervention, which serves as the behavioral treatment platform on which to assess the adjunctive effects of levodopa, is administered via computer and involves repeated choral reading of sentences. Subjects receive five hours of the speech-language therapy intervention weekly plus the levodopa or placebo for six weeks. The primary outcome measure is the change in the Aphasia Quotient (AQ) score on the Western Aphasia Battery from pre-treatment to post-treatment. Other language, cognitive, and communication measures are collected pre- and post-treatment and at six weeks after completion of treatment.

Current Literature - Selections from REHABDATA

Burke, D., Glenn, M. (2003) **Effects of methylphenidate on heart rate and blood pressure among inpatients with acquired brain injury.** *American Journal of Physical Medicine and Rehabilitation*, 82(7), 493-497. [NARIC Accession Number: J45972](#). Project Number: H133A980034.

Abstract: Study reviewed the systolic and diastolic blood pressure and heart rate among hospitalized patients with acquired brain injury who were treated with methylphenidate, a psychostimulant. Comparison of vital signs before and after the introduction of the drug revealed no significant medication effect.

Elovic, E., Lansang, R. (2003) **The use of atypical antipsychotic in traumatic brain injury.** *Journal of Head Trauma Rehabilitation*, 18(2), 177-195. [NARIC Accession Number: J46709](#). Project Number: H133A020502; H133A980030.

Abstract: Article describes mechanisms of action of typical and atypical antipsychotic medications used in treating individuals with traumatic brain injury. Indications and contraindications are presented, and recommendations are made for responsible prescription of antipsychotic medications, including clozapine, risperidone, olanzapine, quetiapine, and ziprasidone.

Meythaler, J., Clayton, W. (2004) **Orally delivered baclofen to control spastic hypertonia in acquired brain injury.** *Journal of Head Trauma Rehabilitation*, 19(2), 101-108. [NARIC Accession Number: J47925](#). Project Number: H133A020515.

Abstract: Study demonstrates the benefits of oral administration of baclofen in patients with spasticity secondary to brain injury. Authors also review reasons why baclofen may be more effective in the lower rather than the upper extremities.

Harvey, R., Lovell, L. (2004) **The effectiveness of anticoagulant and antiplatelet agents in preventing venous thromboembolism during stroke rehabilitation: A historical cohort study.** *Archives of Physical Medicine and Rehabilitation*, 85(7), 1070-1075. [NARIC Accession Number: J48119](#). Project Number: H133B30024; H133B980021.