

North American Brain Injury Society's 13th Annual Conference on Brain Injury **Abstracts**



Dear Colleagues,

It is with great pleasure that we present the accepted abstracts from the North American Brain Injury Society's 13th Annual Conference on Brain Injury in this issue of the *Journal of Head Trauma Rehabilitation*. The conference is taking place in Tampa, Florida, on April 6-9, 2016.

This year we were delighted to have received over 90 abstracts from investigators and researchers from over 11 countries and from some of the world's leading academic and research institutions. Moreover, we continue to be pleased with the high quality of the research submitted and with the broad range of topics that truly reflect the advances now being made across the continuum of care in the field of brain injury.

For those of you unable to attend the NABIS meeting, we hope that the abstracts presented in the following pages will at least give you a feel for our annual event. In addition the oral and poster presentations abstracted in this issue of the *Journal of Head Trauma Rehabilitation*, over 34 invited speakers will present on the latest advances in the science, rehabilitation and treatment of traumatic brain injury. The conference planning committee has developed an integrated educational program that promises to be of interest to researchers, clinicians, administrators, and other brain injury professionals. Emphasis will be placed on a multidisciplinary approach in the management of patients with brain injury from acute care through to community re-entry and beyond. The conference will be a four-day, multi-track event that will cover a variety of brain injury topics including medical best practices, rehabilitation, research, life-long living, pediatrics, and advocacy. The preliminary conference program is posted on the NABIS website, www.nabis.org.

This year, NABIS was pleased to offer four new exciting pre-conference sessions. One track concentrated on psychotherapy: Jeffrey Kreutzer discussed working with families, and Amy Bowles reviewed cognitive therapy for service members with mild TBI. The second track was medically oriented: Nathan Zasler and Sara Etheridge discussed post-traumatic headaches; John Leddy and Barry Willer reviewed assessment and treatment of concussion. Scientific advances in imaging, childhood brain injury, long term living after TBI, and case conferences are just a few of the other exciting presentations.

We hope that you were able to join this April. We also encourage you to consider becoming a member of our multi-disciplinary society by visiting www.nabis.org. Whether it is in the area of research or clinical care, NABIS stands behind the premise that advances in science and practices based on application of the scientific evidence will ultimately provide the best outcomes for those with brain injuries and the community as a whole.

Sincerely,

Jonathan Silver, MD
Conference Chair

Mariusz Ziejewski, PhD
NABIS Chair
Abstract Chair

The North American Brain Injury Society is entirely responsible for the scientific content of these abstracts. These abstracts have undergone peer review by NABIS to determine suitability for their national conference. No additional peer review of these abstracts was performed by the editor or editorial board of *Journal of Head Trauma Rehabilitation*.

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Results/Effects

Both EE exposure and daily citalopram administration provided significant cognitive recovery after injury on extradimensional set-shifting and stimulus reversals when given alone, although reversal learning performance more robustly benefited from the combined therapy ($p < 0.05$).

Conclusions/Limitations

The combined treatment in this study aims to reflect simultaneous rehabilitation and pharmacotherapies given to TBI patients in a clinical setting. Future studies will assess the ideal cognitive recovery timeline and specific brain mechanisms involved in restoring higher function after TBI.

0064

Alcohol and Illegal Drugs: Risk Factors for Traumatic Brain Injury

Category: Neurotrauma – prevention and public health
Author's preference: Oral

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Introduction/Rational

Approximately 30% of Injury deaths are Traumatic Brain Injury (TBI) related. Alcohol use is a known risk factor in TBI, but little is known about illegal drug use and the risk of TBI. Meanwhile, there has been a 108% increase in overdose deaths from illicit drug use (heroin and cocaine) 2010 to 2014. The rising use of illegal drugs on the TBI incidence is unknown.

Method/Approach

We examined demographic characteristics and substance abuse associated with TBI at the time of injury. Hospital records ($n = 861,335$) from 770 trauma centers were analyzed using the 2014 National Trauma Data Bank. Lab testing captured alcohol use and illegal drug use. Specific types of illegal drugs were unknown. Multivariate logistic regression was used to calculate adjusted odds ratios (aOR).

Results/Effects

Among injuries treated at a trauma center, 31.8% ($n = 274,260$) were TBIs; and among all TBIs, illegal drugs were confirmed by a lab test in 9.3% of cases ($n = 25,475$) and alcohol (below or beyond the legal limit) in 17.9% of the cases ($n = 49,026$). Among illegal drug users, the most frequent mechanism of injury was Motor Vehicle Occupant ($n = 7,750$). Relative to patients with other injuries, TBI patients were more likely to have used alcohol beyond the legal limit (aOR = 1.92, 95%CI = 1.88-1.95) and to have used illegal drugs (aOR = 1.16, 95%CI = 1.13-1.18). Also, death was much more likely when there was a TBI (aOR = 2.90, 95%CI = 2.75-3.06).

Conclusions/Limitations

Alcohol use continues to be risk associated with TBI. Use of illegal drugs is emerging as a risk factor for TBI. Preventing alcohol and illegal drug misuse will likely help reduce TBI related deaths and the burden of TBI for individuals who survive the injury.

0065

Chiropractic Cranial Treatment Model and Neuroplasticity in a Post Stroke 72-Year-old Male: A Case Report

Category: Neurorehabilitation – Case report/Clinical Research
Author's preference: Oral

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Introduction/Rational

Stroke is often associated with paralysis, leading to poor outcomes and quality of life as well as reduced activities of daily-living (ADL). The purpose of this paper is to illustrate how chiropractic care could be used to facilitate neuroplasticity of the brain as a means to reduce/reverse any secondary stroke paralysis. The patient in this study is 72-year-old male working full time as an architect when he suffered a middle cerebral artery infarct with resultant brain cell death as viewed on CT-scan. His post-stroke presentation revealed right-side complete paralysis of arm and leg as well as speech and swallowing difficulties.

Method/Approach

His past history noted no prior head injury though he had a history of intermittent atrial fibrillation implicated in the clot formation initiating the stroke. Care was measured with videotaping of progress, monitoring of ADLs and work capacity levels along with standard biomechanical orthopedic, neurological and chiropractic evaluation studies. Treatment included sacro occipital technique (SOT), which incorporated cranial manipulative care while simultaneously performing normal side extremity specific range of motion and then immediately following with performing the same range of motion activities on the “abnormal” side.

Results/Effects

Pre- and post-videotaping of patient found continued progress over years, with showing walking 18-years later even though CT-scan illustrated the same area of initial brain tissue damage. Generally treatment of similar cases requires a minimum of 6-month treatment followed-up with life-long wellness treatment, for the once compromised areas.

Conclusions/Limitations

This article addresses the success of SOT chiropractic care and suggests that neuroplasticity may have a biomechanical–neurological connection pathway. Further studies are needed to identify if a subset of stroke patients might have positive responses to chiropractic cranial manipulation with the goal of facilitating biomechanical neuroplasticity. This may offer a low-risk, low-cost option for successful care of a post-stroke patient.

0066

Postconcussive Symptom Report Profiles of University Students With and Without Self-Reported Mild Head Injury

Category: Neurotrauma – basic research
Author's preference: Oral