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Webinar EVER Pharma

Cerebrolysin's evidence from TBI research – Treat early, reduce acute and post-acute complications

April 17, 2024

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Webinar EVER Pharma (April 17, 2024)

Cerebrolysin's evidence from TBI research – Treat early, reduce acute and post-acute complications

MODERATOR, EXPERTS

Bettina Pfausler

Department of neurological intensive care medicine and neuroinfectiology

Medical University Innsbruck, Austria

Harald Widhalm

Clinical Department of Trauma Surgery

Medical University of Vienna, Austria

Mark Bayley

UHN-Toronto Rehabilitation Institute

University of Toronto, Canada

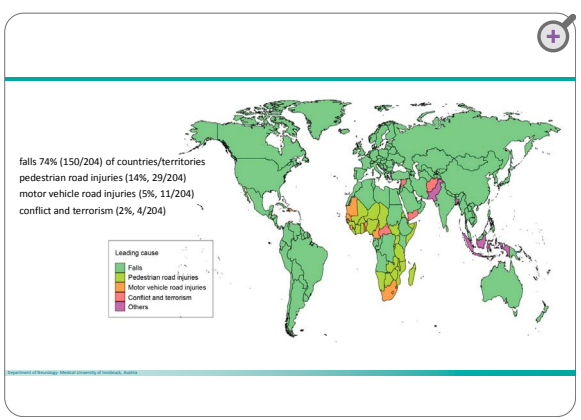
INTRODUCTION

Treating secondary damage symptoms occurring short-and longterm after neurotrauma is an essential task of critical care specialists working in the ER and ICU. Pharmacological agents indicated to save lives after polytrauma or isolated head trauma are globally accepted medications. Cerebrolysin can nowadays be included into these globally acknowledged treatment bundles due to the strong evidence provided from the CAPTAIN trials.

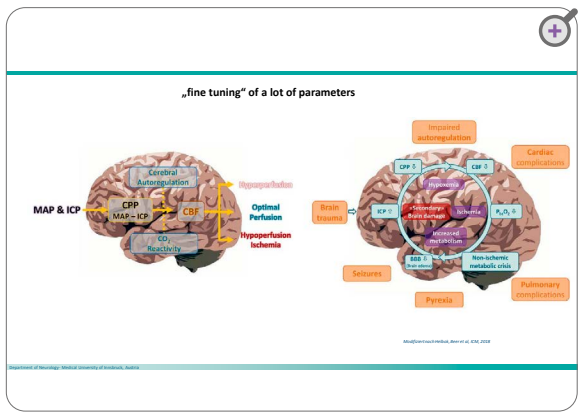
In this webinar the speakers discussed how the evidence lead to the inclusion into hospital-internal standard treatment strategies as well as first acknowledgement in important guidelines.

Introduction by Dr. Bettina Pfausler

Dr. Pfausler started the webinar with an epidemiological overview about Traumatic Brain Injury (TBI) worldwide. TBI is a significant global health concern, with an alarming incidence of 27 million new cases annually. Currently, nearly 50 million individuals are living with the consequences of TBI. The regions at the highest risk include Eastern Europe and high-income areas of North America.



Notably, since the 1990s, the incidence of TBI has seen a decline, largely due to the implementation of preventive measures such as the widespread use of helmets and seatbelts. Despite these advances, falls, particularly among the elderly, have emerged as the most frequent cause of TBI, followed by road injuries and incidents related to conflicts and terrorism. It's important to recognize that TBI is a **heterogeneous condition**, characterized by diverse pathogeneses and etiologies, which complicate treatment and prevention management.



Presentation by Dr. Harald Widhalm on acute TBI management

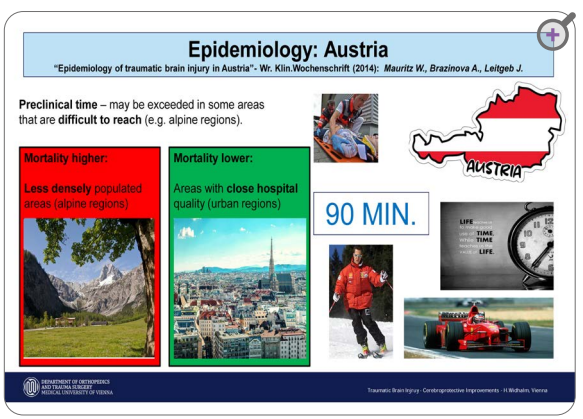
In the beginning of his lecture Dr. Widhalm focused on the TBI epidemiology in Europe and Austria and the importance of rapid treatment in this field.

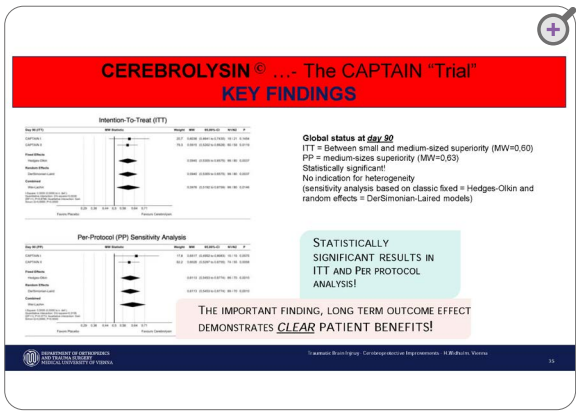
In Austria, Traumatic Brain Injury (TBI) presents a notable contrast to the broader European Union (EU). While the incidence rate in the EU stands at 235 cases per 100,000 inhabitants, Austria experiences a higher rate of 300 per 100,000. Annually, this translates to approximately 65,000 TBI patients in Austria, with 2,000 of these cases classified as severe. Despite the higher incidence, Austria boasts a lower mortality rate of 11 per 100,000 compared to the EU average of 15 per 100,000. The age distribution of TBI cases in Austria shows a bimodal pattern, with peaks observed among males aged 15-19 and females aged 85-90.

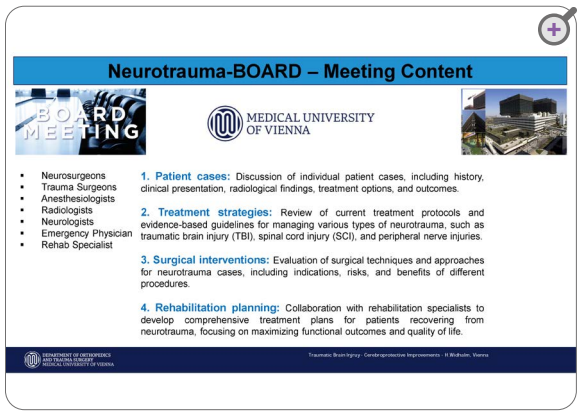
The **urgency of rapid treatment** for TBI cannot be overstated. The phrase "time is brain" encapsulates the critical importance of swift transport to an appropriate medical facility to improve outcomes. Severe TBI cases, particularly those with a Glasgow Coma Scale (GCS) score of 3-4, exhibit high mortality rates of 76-80%. Additionally, patients suffering from both polytrauma and severe TBI often face prolonged ventilation periods and higher incidences of multi-organ failure, underscoring the necessity for immediate and effective medical intervention.

Then Dr. Widhalm pointed out the **key principles of acute management**

- Early ventilation, rapid transport, coagulation optimization
- Monitoring (ICP, neurological status)
- Neuroprotective measures (head elevation, adequate CPP, avoid hypoxia/hypotension)
- Serial imaging to detect progression
- Medications (osmotic agents, sedatives)
- Surgical interventions as needed
- Temperature management, nutrition, DVT prophylaxis







Dr. Widhalm presented Cerebrolysin as a "very **interesting multi-modal drug** that improves brain recovery after TBI". It provides neuroprotection and facilitates neurorecovery, leading to notable improvements in both motor and cognitive functions. Clinically, it has been validated through extensive research, involving 22,000 patients across 45 randomized controlled trials (RCTs).

For optimal effectiveness, it is critical that administration of Cerebrolysin begins as soon as possible. It can be administered in various healthcare settings, including the emergency room (ER), intensive care unit (ICU), or general wards. Notably, patients treated with the compound show improved outcomes on the Glasgow Outcome Scale, underscoring its impact on enhancing recovery and overall prognosis in individuals suffering from severe brain injuries and neurodegenerative conditions.

In his hospital, AKH Vienna, a **neurotrauma-board** has been formed resulting in a more effective management of traumatic brain injury (TBI). It requires close collaboration among various specialties, including neurosurgery, trauma surgery, anesthesia, radiology, neurology, and physical medicine and rehabilitation (PM&R). Regular case discussions are crucial for optimizing patient management, allowing for the exchange of expertise and the development of cohesive treatment plans. Additionally, creating standardized protocols and guidelines ensures consistent and high-quality care, leading to better recovery rates and improved patient outcomes.

Presentation by Dr. Mark Bayley on TBI rehabilitation

Pathophysiology of TBI

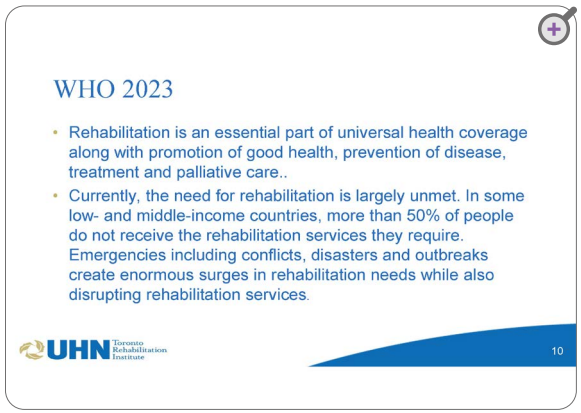
Dr. Bayley began his lecture by explaining the pathophysiology of TBI. It involves both focal and diffuse damage to the brain. Focal contusions often occur in the frontal and temporal lobes, while diffuse axonal injury typically affects the brainstem, corpus callosum, and gray-white junction. These injuries result in deficits in memory, executive function, attention, processing speed, and balance.

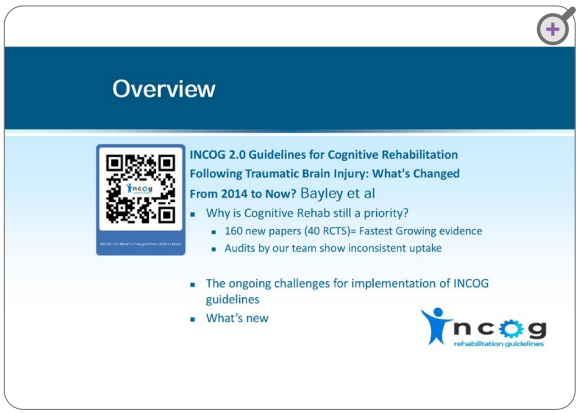
Rehabilitation aims to optimize function and reduces disability through remediation and compensation strategies. Dr. Bayley also cited from important WHO documents mentioning the essentiality of rehabilitation (see slide).

Dr. Bayley emphasized that rehabilitation should begin once the patient is medically stable, even if they are still suffer from post-traumatic amnesia. Effective rehabilitation requires an interprofessional team, including physical therapists, occupational therapists, speech-language pathologists, neuropsychologists, and social workers, with a case coordinator to manage care. Cognitive rehabilitation is particularly well-supported by evidence from randomized controlled trials.

Online Resources for TBI Rehabilitation

- Neurotrauma Care Pathways
- Canadian TBI Guideline
- Evidence-Based Review of Acquired Brain Injury
- INCOG Guidelines for Cognitive Rehabilitation





Summary

In summary, this webinar provided a comprehensive overview of the current evidence and best practices for acute management and rehabilitation of patients with TBI. Key themes included the importance of rapid treatment, use of cerebroprotective agents like Cerebrolysin, multidisciplinary team care, and evidence-based cognitive rehabilitation.

ABBREVIATED PRESCRIBING INFORMATION. Name of the medicinal product: Cerebrolysin - Solution for injection. Qualitative and quantitative composition: One ml contains 215.2 mg of Cerebrolysin concentrate in aqueous solution. List of excipients: Sodium hydroxide and water for injection. Therapeutic indications: For treatment of cerebrovascular disorders. Especially in the following indications: Senile dementia of Alzheimer's type. Vascular dementia. Stroke. Craniocerebral trauma (commotio and contusio). Contraindications: Hypersensitivity to one of the components of the drug, epilepsy, severe renal impairment. Marketing Authorisation Holder: EVER Neuro Pharma GmbH, A-4866 Unterach. Only available on prescription and in pharmacies. More information about pharmaceutical form, posology and method of administration, special warnings and precautions for use, interaction with other medicinal products and other forms of interaction, fertility, pregnancy and lactation, effects on ability to drive and use machines, undesirable effects, overdose, pharmacodynamics properties, pharmacokinetic properties, preclinical safety data, incompatibilities, shelf life, special precautions for storage, nature and contents of the container and special precautions for disposal is available in the summary of product characteristics.

EVER Neuro Pharma GmbH
Oberburgau 3
4866 Unterach
Austria
www.everpharma.com

www.cerebrolysin.com

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