
Keynote Forum August 14, 2017

Brain Injury and Dementia care 2017



4th International Conference on

BRAIN DISORDERS AND DEMENTIA CARE

August 14-16, 2017 | Holiday Inn Toronto International Airport
Toronto, Canada

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Donald A Davidoff

Harvard Medical School, USA

Diagnostic Issues and the Nature of the Relationship between Dementia and Depression

There are many questions and conflicting research concerning the nature of the relationship between depression and dementia, i.e., are they coincidental, unidirectionally causal, mutually influencing or do they share a common pathophysiology. Normal and pathological aging will be reviewed with a focus on the differences between crystallized and fluid intelligence. Effects of depression on cognition as individual's age are addressed. Depression primarily impairs reaction time and some executive functions, such as mental flexibility, such that executive functions can appear impaired. There has been no demonstration of a consistent disturbance in memory functioning resulting from depression alone, whereas dementia is characterized by memory loss. Nonetheless memory complaints are ubiquitous amongst the elderly, regardless of whether they are healthy, depressed or dementing. No consistent and agreed upon terminology is apparent throughout the literature on the relationship between dementia and depression, confounding a current understanding. For example, DSM-5 criteria for a diagnosis of depression may currently result in an under-reporting of major depression because elder patients tend demonstrate fewer symptoms and tend to focus on somatic and/or cognitive complaints rather than on mood issues. Thus, a nosology is proposed to help clarify these issues. Depression confounds the diagnosis of dementia and vice versa. Current research has not provided a definitive understanding of this complex relationship. Recent studies have suggested that the magnitude and trajectory of depressive symptomatology have been underappreciated. Perhaps the single greatest

problem in understanding the relationship between dementia and depression is the heterogeneous nature of the illnesses themselves. Clarification can only come when careful specification of each group is made. In effect, apples must be compared with apples and not with oranges.

Speaker Biography

Donald A Davidoff, Ph.D., is Chief of the Department of Neuropsychology and director of the Neuropsychology Fellowship Program at the McLean Hospital, Harvard Medical School. Dr. Davidoff is also an assistant professor in the Department of Psychiatry, Harvard Medical School and Psychologist, McLean Hospital. He founded the Geriatric Neuropsychiatry Unit in 1993 and was its Psychologist-in-Charge for 15 years, retiring from that position to focus on research and the Department of Neuropsychology. He has published numerous papers and book chapters on the diagnosis and management of patients with dementia, treatment resistant affective disorders, optimal aging, the neurocognitive basis of Hoarding Disorder, nonverbal learning disabilities and affective and motivational aspects of memory functioning. He is a sought after speaker for interdisciplinary conferences and has taught courses at the American Psychiatric Association Meetings consistently for the last 15 years. He is an award-winning teacher and has mentored a large number of multi-disciplined professionals including pre- and post-doctoral psychologists and psychiatry residents. He is a member of the core faculty of the Harvard-South Shore Residency Training program and the McLean-MGH Harvard Residency Training Program. He has served as chairman of the Commissioner's Task Force on Alzheimer's disease and on the State House Task Force on Elder Mental Health. He was a board member (for 12 years) and treasurer of the Alzheimer's Association of Massachusetts. He is a senior consultant for the Levinson Institute (a psychologically oriented organizational consulting group) and teaches the Harvard Medical School's CME course on Leadership for Physician Executives. He has also co-authored five mystery novels (Amnesia, Addiction, Delusion, Obsessed, and Guilt) under the pseudonym GH Ephron.

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Azza A Ali

Al-Azhar University, Egypt

The Possible Interaction between the Influence of Epigallocatechin-3-gallate and Wheat Grass Together with Mental and Physical Activities against Alzheimer's disease in Isolated and Socialized Rats

Background: Alzheimer's disease (AD) is the most common cause of dementia where symptoms gradually worsen over a number of years. Social isolation exacerbates memory loss while mental and physical activities training can help in maintaining cognitive functions. Epigallocatechin-3-gallate (EGCG) is a natural chelator with health-promoting effects in CNS and wheat grass is a natural antioxidant and has high ability to counteract free radicals. Objective: To study the combined effects of EGCG and wheat grass together with mental and physical activities against induction of AD as well as to compare between their combined effects in socialized and isolated conditions.

Methods: Eight groups of rats (4 socialized and 4 isolated) were exposed to both Swimming test and Y-maze (each for one time/week) for maintaining mental and physical activities. Two groups of socialized as well as of isolated rats were normal rats while the others were AD rat's model (received daily 70mg/kg AlCl₃, IP). During the four weeks of the experiment, normal and AD rats in either isolated or socialized conditions received either saline for control or EGCG (10mg/kg every other day IP) & wheat grass (100mg/kg PO daily) for treated groups. Cages covered with black plastic were used for social isolation. Changes in brain Aβ, ACHE, monoamines, inflammatory mediators, oxidative parameters as well as brain derived neurotrophic factor (BDNF) were measured for all groups. Histopathological changes in different brain regions were also detected.

Results: Brain neurological damage characterizing isolation and/or AD were more severe in isolation-associated AD

group. EGCG and wheat grass together with mental and physical activities showed higher protection against hazards of AlCl₃ or isolation than mental & physical activities alone especially in isolation-associated AD group. Their protection was indicated by the significant decrease in Aβ, ACHE, MDA, TNF-α, IL-1β together with the increase in SOD, TAC, brain monoamines, BDNF and confirmed by histopathological examinations.


Conclusion: EGCG and wheat grass together with mental and physical activities has more pronounced protective effect against brain neuronal degenerations associated the development of AD especially in social isolation conditions than mental and physical activities alone.

Key words: Alzheimer's disease; Epigallocatechin-3-gallate; Wheat grass; Mental and physical activities; Social isolation; Rats.

Speaker Biography

Prof. Azza A Ali has completed her PhD specialized in Pharmacology and Toxicology from Faculty of Pharmacy, Cairo University. Her postdoctoral studies included different scientific aspects related to her specialization field with giving especial interest to researches of neuropharmacology and psychopharmacology; she also developed research line of behavioral pharmacology in Egypt. She is member of many scientific societies in Egypt and of (AAPS) American Association of Pharmaceutical Scientists (2002) and published more than 35 papers in reputed journals, supervised and discussed more than 50 PhD and MSc thesis and actively participated by oral and posters presentations at many international conferences especially on Alzheimers disease & Dementia. Now she is a Head of Pharmacology and Toxicology Department at Al-Azhar University and she sacrifices great effort hoping to find real treatment that can prevent or delay the progression of Alzheimers disease especially in the high-risk individuals focusing on depression, stress and malnutrition.

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Ali Akbar owji

SUMAS, Iran

Effects of Resveratrol on the activity and transcript levels of peptidyl arginine deiminase in the brain cortex of rats

Statement of the Problem: Demyelination that is the hallmark of multiple sclerosis is a complex process that partly involves deimination of myelin basic protein. Peptidylarginine deiminase (PAD) family of enzymes catalyze the deimination of protein-bound arginine to citrulline. The 2 isoform of PAD is present in the myelin sheet of both the CNS and the PNS. Resveratrol, a polyphenol with neuroprotective effects unexpectedly has shown to exacerbate demyelination in models of multiple sclerosis. The purpose of this study was to evaluate the effects of resveratrol on the enzymatic activity of PAD and on the mRNA levels of the 2 isoform of PAD in the brain cortex of rats. **Methodology & Theoretical Orientation:** Rats were gavaged with resveratrol or water (control) and or ethanol (vehicle) for 3 weeks. Cortical tissues were assayed for the PAD activity. Real-time RT-PCR was used to assess the mRNA levels of PAD2. **Findings:** Resveratrol at the dose of 120mg/Kg bw/day significantly increased ($P < 0.05$, Tukey's test) the activity of PAD2 in the brain cortex of rats as compared to the control group. Levels of the mRNA

for PAD2 in the cortex of rats treated by resveratrol was not significantly different ($P > 0.05$ Tukey's test) from those treated by water or ethanol. **Conclusion & Significance:** The finding that oral resveratrol induces PAD activity in the cortex of rats is in line with the adverse effects of resveratrol on multiple sclerosis.

Speaker Biography

Ali Akbar Owji is an Emeritus Professor in the Department of Biochemistry at the Shiraz University of Medical Sciences, Iran. He received his BSc in Chemistry and his PhD in Medical Biochemistry from Tehran University, Iran. His research has mainly concerned the Pharmacological and functional characterization of receptors for neuropeptides in the CNS. He has also worked on the expression pattern of various BDNF transcripts and on the epigenetic changes around the promoters of BDNF gene in the rat brain during tolerance to and withdrawal from morphine. During the past eight years, he has also worked on the expression status of the novel human genes UBE2Q2 and UBE2Q1 in human tumors and cell Lines. His career has also involved teaching Medical Biochemistry, Molecular Endocrinology and Biochemistry of the Nervous System. He has supervised six Ph.D and fifteen MSc students to completion.

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Babak Kateb

Neuroscientist, Canada

Traumatic Brain Injury

Traumatic brain injury (TBI) is an enormous public health problem, with 1.7 million new cases of TBI recorded annually by the Centers for Disease Control. However, TBI has proven to be an extremely challenging condition to treat. Here, we apply a nanoprodrug strategy in a mouse model of TBI. The novel nanoprodrug contains a derivative of the nonsteroidal anti-inflammatory drug (NSAID) ibuprofen in an emulsion with the antioxidant α -tocopherol. The ibuprofen derivative, Ibu2TEG, contains a tetra ethylene glycol (TEG) spacer consisting of biodegradable ester bonds. The biodegradable ester bonds ensure that the prodrug molecules break down hydrolytically or enzymatically. The drug is labeled with the fluorescent reporter Cy5.5 using nonbiodegradable bonds to 1-octadecanethiol, allowing us to reliably track its accumulation in the brain after TBI. We delivered a moderate injury using a highly reproducible mouse model of closed-skull controlled cortical impact to the parietal region of the cortex, followed by an injection of the nano prodrug at a dose of 0.2 mg per mouse. The blood brain

barrier is known to exhibit increased permeability at the site of injury. We tested for accumulation of the fluorescent drug particles at the site of injury using confocal and bioluminescence imaging of whole brains and brain slices 36 hours after administration. We demonstrated that the drug does accumulate preferentially in the region of injured tissue, likely due to an enhanced permeability and retention (EPR) phenomenon. The use of a nanoprodrug approach to deliver therapeutics in TBI represents a promising potential therapeutic modality.

Speaker Biography

Babak Kateb, MD is a neuroscientist with more than 20 years of research experience. His research has been focused on introduction of advance diagnostics and therapeutics into clinical neuroscience in order to rapidly identify and introduce game changing technologies to treat neurological disorders such as brain cancer, Alzheimer's disease, Parkinson's disease, and other brain and spinal disorders. He did his educational training at TUSOM, USC, did his research fellowship at USC-keck School of Medicine, Department of Neurosurgery and also studied VLSI system design at USC Department of Electrical Engineering at the Ming Hsieh Institute.

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Ramadan Galal Kamal Shamseldien

Shebin Al Kom Teaching Hospital, Mansoura

Complex HCP as sequela of severe TBI case presentation

Female child 6ys old presented at ER, after RTA 6months ago. GCS 7/15, post traumatic epilepsy initial CT; brain edema. She suffering chest problems when she off MV and chest improved, CT brain; show HCP with Rt frontal hygroma, neurologically she has repeated fits and GCS 10/15, conservative treatment. Not controlled follow up CT; disappeared hygroma and increased HCP. VP shunt inserted followed by immediate improvement. After discharge she get infection, readmitted managed conservatively, ever subside but conscious level not improved and fits not controlled, she developed distal shunt failure and CSF peritoneal pseudocyst. Distal revision was done followed by short period of improvement , then distal shunt failure and reformation of CSF peritoneal pseudocyst occurred. Lastly VA shunt was done followed by stabilization of the

case improved conscious level and controlled fits and return normal activity.

Speaker Biography

Ramadan Galal Kamal Shamseldien, Neurosurgery MD. Lecturer of neurosurgery, Shebin Elkom Teaching Hospital, Egypt. He is a member of Egyptian Society of Neurological Surgeons (ESNS), Egyptian Spine Association (ESA), and Middle East Spine Society (MESS). He was born on 1977 in Egypt. He was graduated from Faculty of Medicine, Alazhar University in 2001. He underwent neurosurgery residency training in Mansoura international Hospital. He has completed his MD neurosurgery at Alazhar University, Egypt in 2013. He is well trained to perform all the standard brain, spinal, and peripheral nerve surgeries with special interest in pediatric surgery and spinal fixation. He published numerous national and international papers concerning Metastatic brain tumors, Endoscopic suturotomy, Posterior craniocervical fixation, Spontaneous ICH (STICH II study), and Grading system for cranial suture closure.

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Mahmoud Farid

Al Azhar University, Egypt

Incidence and management of pituitary apoplexy among 80 patients having pituitary adenomas

A series of 19 patients having pituitary apoplexy among 80 patients with pituitary adenomas were managed surgically and studied in our neurosurgery department within a period of four years. This study included the terms of age, sex, signs and symptoms, predisposing factors, hormonal functions, histological types of adenoma, as well as CT and MRI findings. Among these patient with pituitary apoplexy the average age was 44.9 years old, female patient constitutes 11 cases (57.9%) of the series while male patients constitutes 8 cases (42.1%). The male to female ratio was 1:1.3. Hypertension, diabetic ketoacidosis, anticoagulant therapy and huge pituitary tumor were the most predisposing factors in this study. The cardinal and important clinical manifestations was headache 16 cases (8.42%), visual disturbance 13 cases (6.84%), ocular movement paresis in 6 cases (31.5%), altered consciousness 1 case (5.2%). The pre-operative hormonal study showed pituitary hypofunction is 7 cases (36.8%) and pituitary hyper function in 12 cases (63.2%). All cases of pituitary apoplexy were operated with post-operative CT and MRI brain and sella with and without contrast. The post-operative pathological findings showed 12 cases (63.2%) hemorrhagic pituitary adenoma, 5 cases

(26.3%), hemorrhagic infarction and 2 cases (10.5%) pure ischemic infarction. The post-operative complication in this study showed diabetes insipidus in 6 cases (31.5%), CSF leak in 2 cases (10.5%), meningitis and death in 1 case (5.2%).

Conclusion: Pituitary apoplexy is a serious event, comprises in this series 23.8% of 80 patients having pituitary adenomas. Complete recovery is possible if the diagnosis is rapidly obtained and adequate management is initiated in time, thus surgical outcome through transsphenoidal approach or endonasal approach is very satisfactory.

Speaker Biography

Mahmoud Farid Neurosurgery MD, Ph.D associate professor of Neurosurgery faculty of medicine Al Azhar University. Has completed his Ph.D of Neurological surgery at Al Azhar University, Cairo, Egypt in 2004. His specialist training involved intense study, research and teaching of both non operative and operative care and treatment of spine and brain surgery. He has authored numerous public international and national works and provides presentations on topics related to the brain and spinal lesions. Expertise in all neurological field and special interest in skull base surgery and microscopic minimal invasive spine surgery. He has experience of work in the Neurosurgery field in Gulf area from 2010 until present were cranial and spinal cases has been managed as well as the peripheral nerves lesions.

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Timothy Lau

University of Ottawa, Canada

Happiness and health? Is Happiness more than just a good feeling?


The connections between happiness, health and well-being are more than psychological. Not only do happy people have higher self-esteem and have a better quality of life they are also healthier. Literature reviews, longitudinal studies and meta-analysis describe the connection. Happier people tend to live longer, have lower heart rates, lower heart rate variability, and blood pressure, have better immune systems, exhibit more adaptive stress responses, and have lower rates of chronic pain and chronic illness. As the science of happiness evolves the mechanisms for

how different forms of happiness influence health and how factors like social relationships, sleep and exercise play a role will become clearer. This review will explore the literature surrounding these connections.

Speaker Biography

Timothy Lau is a distinguished teacher, faculty of medicine and associate professor for the department of psychiatry in the University of Ottawa.

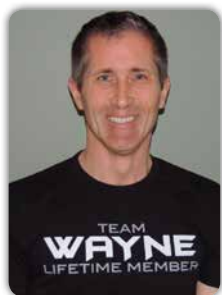
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Wayne P Gillis

Author and Brain Injury Thriver, Canada

"Always---Adapt to life change, never React to it!"


In 2013 about 2.8 million TBI-related emergency room (ER) or hospitalizations occurred in the United States alone. TBI contributed to the deaths of nearly 50,000 people. The leading cause of TBI-related death varied by age. Falls were the leading cause of death for persons 65 years or older. Among all age groups, motor vehicle crashes were the third overall leading cause of TBI-related ER visits, hospitalizations, and deaths (14%). Unintentional self-harm was the second leading cause of TBI-related deaths (33%) in 2013. In 2012, an estimated 329,290 children (age 19 or younger) were treated in U.S. ERs for sports and recreation-related injuries that included a diagnosis of concussion or TBI. Brain Injuries represent a staggering percentage of personal injury and disability causes in today's society! Directly in this study of recovery, his recommendations to timing, availability of therapy, to one's cognitive level or dissonance, all play an active part in the retrieval of one's inner self. During this

journey of rebuilding & learning, one thing became crystal clear to him. Setting and attaining a realistic goal, feeling proud then adapting to another. "Moving Forward" no less!

Speaker Biography

Wayne was a national bank trainer then went onto build a successful business in Ocala Florida. After the sale, Wayne returned to Canada to go to University, with plans to become a medical doctor. However the course, "The Psychology of Law" altered his path. Then in 2005 a car struck the motorcycle he was driving and atop his NUMEROUS injuries, was a closed head traumatic brain injury (TBI). It was that trauma that started his life all over again! From simple walking to talking, he has lived in Charlottetown PEI, Halifax Nova Scotia and most recently Celebration & Kissimmee Florida. He has developed his Keynote speech and coaching business while being a stay at home Dad, actively managing his two active sons in swimming and competitive gymnastics. Wayne has spoken to Dalhousie University school of physiotherapy, Sun Life Financial as well as CIBC. His passion is to pass his simple yet effective recovery choice to all other survivors and all people in general, dealing with life's inevitable change. Always remembering, GROWTH is an option!

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Mohamed Adel Deniwar

Mansoura university hospitals-Egypt

Cranial trauma associated cerebrovascular lesions: A review and case report

Traumatic cerebrovascular injury (TCVI) can occur secondary to blunt or penetrating cranial trauma. Blunt TCVI is uncommon, only (1%), yet it may cause severe brain insult with high morbidity and mortality.

Immediate TCVI in the form of intracranial hemorrhage or subgaleal hematoma can be diagnosed on a primary head CAT scan. 70% of subarachnoid hemorrhage (SAH) follows cranial trauma. Intracerebral hematoma secondary to direct brain contusion or cerebral vessel injury is a devastating common TCVI.

Delayed cerebrovascular lesions secondary to cranial trauma had been documented. Skull base fracture associated traumatic aneurysms (TA) and Dural carotid cavernous fistulas (DCCF) are prime examples. Advanced investigations as CT angiogram (CTA), magnetic resonance angiogram (MRA) and digital subtraction angiogram are sought to help in proper diagnosis. We document two cases of cerebrovascular lesions following cranial trauma: the first case is a direct DCCF in 7 years old

girl following motor vehicle accident and the second case is a scalp arteriovenous malformation (AVM) in 14 years old boy after direct head injury. Our aim is to scope out the management pitfalls and the prognosis.

Cerebrovascular lesions following cranial trauma should be anticipated, especially in severe head injuries. Proper line of management should be chosen and started at the suitable timing for good outcome. Many lines of treatment from surgical clipping, trapping, etc. up to endovascular embolization can achieve this.

Key words: Cranial trauma, cerebrovascular lesions, Dural carotid cavernous fistulas, and Scalp arteriovenous malformation.

Speaker Biography

Mohamed Adel Deniwar works as a lecturer of neurosurgery at Mansoura University Hospitals in Egypt

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