АНАГААХЫН ШИНЖЛЭХ УХААНЫ ҮНДЭСНИЙ ИХ СУРГУУЛЬ

МОНГОЛЫН НЕЙРОСАЙНСЫН НИЙГЭМЛЭГ

ЭРҮҮЛ МЭНДИЙН ЯАМ

БОЛОВСРОЛ, СОЁЛ, ШИНЖЛЭХ УХААН, СПОРТЫН ЯАМ

ШИНЖЛЭХ УХААНЫ АКАДЕМИ

ШИНЖЛЭХ УХААН ТЕХНОЛОГИЙН САН

The fifth Annual Meeting of The Mongolian Neuroscience Society

MULTIDISCIPLINARY BRAIN SCIENCE 2018

Sponsors:

BWP PREMIER BEST WESTERN Tuushin Hotel

Denk Pharma QUALITY FOR YOUR HEALTH - MADE IN GERMANY

ALMAZ PRESS

UNITED MANAGEMENT CONSULTING

CONTENTS

THE 5TH ANNUAL MEETING OF MONGOLIAN NEUROSCIENCE SOCIETY "MULTIDISCIPLINARY BRAIN SCIENCE", September 22-23, 2018

DAY 1	September 22 (Saturday)
TIME	DELGER CHOIR MONASTERY, DUNDGOBI PREFECTURE (09:00–18:00)
09:00	**OPENING CEREMONY (09:00–09:30)**
	Mongolian Neuroscience Society (MNS)
	Mongolian Academy of Science (MAS)
	International Brain Research Organization (IBRO)
	ZD Scripture & Sutra Institute (ZDSSI)
	INTRODUCTORY DISCUSSION (09:30–10:30)
09:30	D. Regdel, President of Mongolian Academy of Science: Introduction to MAS
	Title:
09:45	S. Rochefoucauld, Executive Director of IBRO: Introduction to IBRO
	Title:
10:00	Z. Damdin, President of ZDSSI: Philosophy of Mongolian Traditional Medicine
	Title:
10:15	B. Damdindorj, Executive Director of MNS: Brain science in Mongolia
	Title:
10:30	**COFFEE BREAK**
10:45	**FREE DISCUSSIONS (11:00–12:00)**
11:00	I. Stepanov, Neurosurgeon, Irkutsk State Medical University: Development of brain science in Russia
	Title: Diffusion-Weighted Magnetic Resonance Imaging of Brain Metastases
11:30	T. Hiramoto, Department Head of Psychosomatic Medicine, National Hospital Organization: Psychosomatic Medicine and Introduction to Coro-Heart
	Title: Crosstalk between Brain and liver: Role of autonomic nervous systems in liver patho-physiology
12:00	**LUNCH**
13:00	**CULTURE PROGRAM (13:00–18:00)**

DAY 2	September 23 (Sunday)
TIME	THE FRESH WATER RESOURCES AND NATURE CONSERVATION CENTER (09:00–17:00)
09:00	**PLENARY LECTURES (09:00–10:30)**
	Chairs: S. Rochefoucauld, B. Lkhagvasuren
09:00	Pierre Magistretti, President of IBRO:
	Title: Neuron-glia metabolic coupling: roles in plasticity and neuroprotection
09:45	Juan Lerma, Chief-in-Editor of Neuroscience:
	Title: Celular and molecular bases of behavor
10:30	**COFFEE BREAK**
	IBRO LECTURES (10:30–12:00)
	Chairs: D. Boldbaatar, D. Gantulga
10:30	T. Shimogori, Team Leader, Riken Brain Research Center:
	Title: Early life experience shapes neuronal circuit formation
10:50	T.Hiramoto, Department Head of Psychosomatic Medicine, National Hospital Organization:
	Title: Crosstalk between Brain and liver: Role of autonomic nervous systems in liver patho-physiology
11:10	Ch. Chiang, PI at National Cheng Kung University:
	Title:
11:30	D. Yanagisawa, Associated Professor at Shiga University of Medical Science:
	Title: Detection of abnormal protein accumulation in Alzheimer's disease using magnetic resonance imaging
12:00	**LUNCH (12:00–13:00)**
	NEUROSCIENCE (13:00–14:00)
	Chairs: J. Jamiyansuren, S. Baasanjav
13:00	D. Enkh-Amar, Mongolian National University of Medical Sciences.
	Title: The possible role in feeding regulation by direct action of glucagon on vagal afferent neurons
13:15	O. Zesemdorj, Mongolian National University of Medical Sciences.
	Title: High fat diet induces electrophysiological change and inflammatory response in neurons of paraventricular nucleus
13:30	N. Erkhembayar, Mongolian National University of Medical Sciences.
	Title: Quality of life and psychological screening in Mongolian patients with type 2 diabetes: a cross sectional hospital-based study
13:45	E. Renchindorj, Mongolian National University of Medical Sciences.
	Title: Sleep chronology and behavioral characteristics of subjects who has high risk of sleep apnea
	NEUROLOGY & NEURORADIOLOGY (14:00–15:00)
	Chairs: A. Tovuudorj, D. Munkhbaatar
14:00	Sh. Orkhontuul, The Third State General Hospital:
	Title: Cerebral cystic echinococcosis in Mongolian children caused by Echinococcus canadensis

14:10	M. Amarjargal, MNUMS:
	Title: Study of memory impairment in temporal lobe epilepsy
14:20	B. Amgalan, MNUMS:
	Title: Attention-deficit hyperactivity disorder in elementary school students: incidence, sub-types, and clinical symptoms
14:30	Kh. Delgerdalai, Lux-Med Hospital
	Title: Diagnostic Performance of Arterial Spin Labeling for Grading Nonenhancing Astrocytic Tumors
14:40	E. Nasanbayar, Grand-Med Hospital
	Title: MRI findings in people with epilepsy
14:50	S. Erdenechuluun, Songino-Khairkhan Municipal Hospital
	Title: A case report of Moyamoya disease
15:00	**COFFEE BREAK**
	PSYCHIATRY & SOCIAL PSYCHOLOGY (15:15–16:45)
	Chairs: Ts. Bayarmaa, D. Jargal
15:15	B. Jadamba, Mongolian State University of Education (MSUE):
	Title: A formula of Quantum Psychology
15:23	M. Sugarmaa, MNUMS:
	Title: Validity of the Mongolian version of Center for Epidemiological Studies-Depression Scale (CES-D)
15:31	Ts. Bayarmaa, MSUE:
	Title: Case-study analysis based on quantum Psychology
15:39	B. Munkhzaya, National Center for Mental Health:
	Title: Study on some psychological features of children with internet gaming disorder
15:47	D. Baasannyam, MSUE:
	Title: Coaching the willpower
15:55	Ts. Orkhonselenge, National Center for Mental Health:
	Title: Adherence to medication regimen in patients with epilepsy follow-up care at NCMH
16:03	B. Altantsetseg, National Center for Psychology:
	Title: **A**dolescents attitude toward online counseling
16:11	E. Oktyabrjargal, MSUE::
	Title: the survey result of student's dispositions towards specific professions
	CLOSING REMARKS (16:45–17:00)

МЭНДЧИЛГЭЭ-1

МЭНДЧИЛГЭЭ-2

МЭНДЧИЛГЭЭ-3

МЭНДЧИЛГЭЭ-4

МЭНДЧИЛГЭЭ-5

МЭНДЧИЛГЭЭ-6

AMAGALAN.B,
MD, MSc, Department of Pediatric Medicine, MNUMS

ALTANTSETSEG.B
Master of Science in clinic and counseling psychology

AMARJARGAL.M,
MSc, MNUMS department of neurology doctorate

BAASANNYAM.D
MEd, Mongolian National University of Education, School of Educational Studies

BAYARMAA.TS PhD,
Associate Professor Mongolian National University of Education, School of Educational Studies

DELGERMAA.D,
PhD, Associate Professor Mongolian National University of Education, School of Educational Studies

ENKH-AMAR.A,
MD, PhD, Senior Lecturer, Department of Internal, MNUMS

ENKHTUVSHIN.R,
MD, MSc, Lecturer, Department of Mental Health, MNUMS

ERDENECHULUUN.D,
MD, PhD, Professor Mongolian National University of Education, School of Educational Studies

ERKHEMBAYAR.N
Physiology department of MNUMS

JADAMBA.B
Academician, Mongolian National University of Education, Quantum Psychology sector

MUNKHZAYA.B,
MSc, Psychologist, NCMH

OKTYABRIJARGAL.E,
PhD, Mongolian National University Of Education, School of Educational Studies Lecturer of psychology,

ORKHONSELENGE.TS,
MD, MSc, National Center of Mental Health

ORKHONTUUL.SH,
MD, MSc, Neurosurgery, State Third Central Hospital

OTGONBAYAR.U
Ph.D, Director of the Institute of Mathematics, NUM

OYUNGEREL.S,
PhD, Associate Professor Mongolian National University of Education

RYENCHINDORJ.E
MD. Division for Educational Policy and Management, MNUMS

SUGARMAA.M, PhD,
Associate professor, Department of Heal

TEGSHJARGAL.A,
Mongolian National University of Education, School of Educational Studies

TUNGALAG.O,
PhD, Mongolian National University of Education, School of Educational Studies

ZESEMDORJ.O
MD. PhD. Department of Pathology, Mongolian National University of Medical Sciences

INVITED SPEAKERS

PIERRE MAGISTRETTI

- DISTINGUISHED PROFESSOR, BIOSCIENCE,
- DEAN, BIOLOGICAL AND ENVIRONMENTAL SCIENCES ENGINEERING
- KING ABDULA UNIVERSITY OF SCIENCE AND TECHNOLOGY
- PRESIDENT OF THE INTERNATIONAL BRAIN RESEARCH ORGANIZATION
- MEMBER OF ACADEMIA EUROPEAE, SWITZERLAND ACADEMY OF MEDICAL SCIENCE
- PROFESSOR EMERITUS OF UNIVERSITY OF LAUSANNE

Biography

Pierre J. Magistretti is an internationally-recognized neuroscientist who has made significant contributions in the field of brain energy metabolism. His group has discovered some of the cellular and molecular mechanisms that underlie the coupling between neuronal activity and energy consumption by the brain.

This work has considerable ramifications for the understanding of the origin of the signals detected with the current functional brain imaging techniques used in neurological and psychiatric research (see for example Magistretti et al, Science, 283: 496 497, 1999). He is the author of over 100 articles published in peer-reviewed journals. He has given over 80 invited lectures at international meetings or at universities in Europe and North America, including the 2000 Talairach Lecture at the Functional Mapping of the Human Brain Conference. In November 2000 he has been a Mc Donnel Visiting Scholar at Washington University School of Medicine.

Pierre J. Magistretti is the President-Elect (2002-2004) of the Federation of European Neuroscience Societies (FENS) which has a membership of over 15000 European neuroscientists. He has been first president of the Swiss Society for Neuroscience (1997-1999) and the first Chairman of the Department of Neurosciences of the University of Lausanne (1996-1998).

Positions and honors

MAIN HONORS AND AWARDS

- 1997 Recipient of the Theodore-Ott Prize of the Swiss Academy of Medical Sciences
- 2001 Elected Member of Academia Europaea
- 2001 Elected Member of the Swiss Academy of Medical Sciences, ad personam
- 2002 Recipient of the Emil Kraepelin Guest Professorship, Max Planck Institute fьr Psychiatry, Mьnich
- 2006 Elected Professor at Collиge de France, Paris, International Chair 2007-2008
- 2009 Goethe Award for Psychoanalytic Scholarship, Canadian Psychological Association
- 2011 Camillo Golgi Medal Award, Golgi Fondation
- 2011 Elected Member of the American College of NeuroPsychopharmacology (ACNP)

Education profile

Ph.D., Biology, University of California, San Diego, U.S., 1982
M.D. Doctorate en Mйdecine, University of Geneva, Switzerland, 1979
Diplфme Fйdйral de Mйdecin, University of Geneva, Switzerland, 1977
Educational Commision for Foreign Medical Graduates Examination, 1977
Maturitй Fйdйrale Type A (Classical Studies), 1977

Selected Publications

Cotte Y, Toy F, Jourdain P, Pavillon N, Boss D, Magistretti P, Marquet P, Depeursinge C (2013) Marker-free phase nanoscopy. Nature Photonics 7:113-117.

Lee Y, Morrison BM, Li Y, Lengacher S, Farah MH, Hoffman PN, Liu YT, Tsingalia A, Jin L, Zhang PW, Pellerin L, Magistretti PJ, Rothstein JD. (2012) Oligodendroglia metabolically support axons and contribute to neurodegeneration. Nature 487:443-U1502.

Suzuki A, Stern SA, Bozdagi O, Huntley GW, Walker RH, Magistretti PJ, Alberini CM. (2011) Astrocyte - neuron lactate transport is required for long-term memory formation. Cell 144:810-823.

Wyss MT, Jolivet R, Buck A, Magistretti PJ, Weber B (2011) In vivo evidence for lactate as a neuronal energy source. Journal of Neuroscience 31:7477-7485.

Allaman I, Gavillet M, Bйlanger M, Laroche T, Viertl T, Lashuel HA, Magistretti PJ (2010) Amyloid beta-aggregates cause alterations of astrocytic metabolic phenotype: Impact on neuronal viability. Journal of Neuroscience 30:3326-3338.

Pellerin, L, Magistretti PJ (1994) Glutamate uptake into astrocytes stimulates aerobic glycolysis: A mechanism coupling neuronal activity to glucose utilization. Proc Natl Acad Sci (USA) 91:10625-10629.

INVITED SPEAKERS

JUAN LERMA

- PROFESSOR,
  CSIC-UMH NEUROSCIENCE INSTITUTE
- SPANISH RESEARCH COUNCIL (CSIC)
- CHIEF EDITOR, NEUROSCIENCE JOURNAL
- CHAIR OF THE PAN-EUROPEAN REGIONAL COMMITTEE OF IBRO.
- SECRETARY GENERAL OF FENS MEMBER OF COSCE

Biography

Juan Lerma is Professor at the Spanish Research Council (CSIC) at the Neuroscience Institute of Alicante (CSIC-UMH) (Director, 2007-2016). He joined CSIC Scientific Staff in 1990 after a stay in the USA at the Albert Einstein College of Medicine (NY) and since then he has been working on the molecular basis of neuronal communication, specifically elucidating the properties and signalling mechanisms of Glutamate Receptors and their role in health and disease.

He was elected EMBO member in 2000 and belongs to the DANA Alliance and the Academia Europaea. He is Secretary General of FENS and past Chair of the PanEuropean Regional Committee of IBRO.

Positions and honors

- 2013 Distinction to the Scientific Merit. Government of Valencia Community.
- 2010 "Highest distinction to the investigative career". Universidad Nacional Mayor de San Marcos. Peru
- 2010 Member of Academia Europaea (The Academy of Europe)
- 2005 XI Award "Alberto Sols" to the Best Research Activity
- 2005 Member of European Dana Alliance for the Brain (EDAB) 2004.
- 2004 CEOE Foundation Award to the Sciences
- 2002 Santiago Grisolнa Chair Award
- 2002 Award to the Scientific Excellence "Alonso Gabriel de Herrera"
- 2000 Member of European Molecular Biology Organization (EMBO)
- 1998 Distinction Award by Heath Science Foundation.

Education profile

1983. Doctor in Sciences, Universidad Autynoma, Madrid.
1979-1985 Associate Researcher. Department of Research, Hospital "Ramyn y Cajal"
1978. M. S. Biology, Universidad Complutense, Madrid.

Selected Publications

Marques JM, Rodrigues RJ, Valbuena S, Rozas JL, Selak S, Marin P, Aller MI, and Lerma J (2013). CRMP2 Tethers Kainate Receptor Activity to Cytoskeleton Dynamics During Neuronal Maturation, J. Neurosci. 33, 18298 –18310.

Lerma J., and Marques JM (2013) Kainate Receptors in Health and Disease, Neuron, 80, 292-311.

Selak S, Paternain AV, Aller IM, Picy E, Rivera R, and Lerma J. (2009) A role for SNAP25 in internalization of kainate receptors and synaptic plasticity. Neuron 63, 357-71
Rivera R, Rozas JL and Lerma J (2007) PKC-dependent Autoregulation of Membrane Kainate Receptors. EMBO Journal, 26, 4359-67.

Rozas, J. L., Paternain A. V. and Lerma J. (2003) Non-canonical signaling by ionotropic kainate receptors. Neuron 39, 543–553.

Lerma, J. (2003). Roles and rules of kainate receptors in synaptic transmission. Nature Rev Neurosci 4, 481-95.

INVITED SPEAKERS

EDVARD INGJALD MOSER

- PROFESSOR
- FOUNDING DIRECTOR OF KAVLI INSTITUTE FOR SYSTEMS NEUROSCIENCE
- CENTRE FOR NEURONAL COMPUTATION
- NORWEGIAN SCIENCE AND TECHNOLOGY UNIVERSITY
- MEMBER OF NORWEGIAN SCIENTIFIC ACADEMY
- MEMBER OF ROYAL NORWEGIAN OF SOCIETY OF SCIENCES AND LETTERS

Biography

Edvard Ingjald Moser is a Norwegian psychologist and neuroscientist, who is a scientific member of the Norwegian University of Science and Technology (NTNU) in Trondheim. He shared the Nobel prize in Physiology or Medicine in 2014 with his then-wife May-Britt Moser and their mentor John O'Keefe for their work identifying the place cells that make up the brain's positioning system.

Moser was born to German parents who had moved to Norway in the 1950s, and grew up in Elesund. He studied psychology at the University of Oslo, was appointed as associate professor in psychology at the Norwegian University of Science and Technology (NTNU) in 1996 and was promoted to professor of neuroscience in 1998. He later became head of department of the Institute for Systems Neuroscience at NTNU.

Edvard Moser was awarded the cand.psychol. degree in psychology from the University of Oslo in 1990 and the dr.philos. doctoral research degree in the field of neurophysiology in 1995. He also has studied mathematics and statistics. Early in his career, he worked under the supervision of Per Andersen. Moser went on to undertake postdoctoral training with Richard G. Morris at the Centre for Neuroscience, University of Edinburgh, from 1995 to 1997, and was a visiting postdoctoral fellow at the laboratory of John O'Keefe at the University College, London for two months.

Positions and honors

- 1999 Prize for young scientists awarded by the Royal Norwegian Society of Sciences and Letters
- 2005 28th annual W. Alden Spencer Award (College of Physicians and Surgeons of Columbia University)
- 2006 14th Betty and David Koetser Award for Brain Research (University of Zьrich)
- 2006 10th Prix "Liliane Bettencourt pour les Sciences du Vivant" 2006 (Fondation Bettencourt, Paris)
- 2008 30th Eric K. Fernstrцm's Great Nordic Prize (Fernstrцm Foundation, University of Lund)
- 2011 Louis-Jeantet Prize for Medicine
- 2011 Anders Jahre Award (with May-Britt Moser)
- 2012 Perl-UNC Neuroscience Prize (with May-Britt Moser)
- 2013 Louisa Gross Horwitz Prize (with May-Britt Moser and John O'Keefe)
- 2014 Karl Spencer Lashley Award (with May-Britt Moser)
- 2014 Foreign associate of the National Academy of Sciences.
- 2014 Kцrber European Science Prize
- 2014 Nobel Prize in Physiology or Medicine (with May-Britt Moser and John O'Keefe)
- 2018 Grand Cross of the Order of St. Olav (with May-Britt Moser)

Education profile

1991-1995 PhD, University of Oslo
1990 Neurobiology, University of Oslo
1985-1990 Psychology, University of Oslo
1984-1985 Mathematics, Statistical analysis, University of Oslo

Research field

Animal behavioral studies, psychology
Memory function of the brain
Spatial perception, grid cells, navigational function of brain

Selected Publications

Shearing-induced asymmetry in entorhinal grid cells. Stensola T, Stensola H, Moser M-B, Moser EI (2015). Nature, 518, 207-212 (Article).

A prefrontal-thalamo-hippocampal circuit for goal-directed spatial coding. Ito HT, Zhang S-J, Witter MP, Moser EI, Moser M-B (2015). Nature, 522, 50-55 (Article).

Speed cells in medial entorhinal cortex. Kropff E, Carmichael JE, Moser M-B, Moser EI (2015). Nature, 523, 419-424 (Article).

Stellate cells drive maturation of the entorhinal-hippocampal circuit.Donato, F., Jacobsen, R.I., Moser, M.-B., Moser, E.I. (2017). Science, (Article). Grid cells and cortical representation.

Moser EI, Roudi Y, Witter MP, Kentros C, Bonhoeffer T, Moser M-B (2014). Nature Reviews Neuroscience, 15, 466-481.

INVITED SPEAKERS

TOMOMI SHIMOGORI

Address: 2-1 Hirosawa Wako Saitama, Japan
Phone: 81-48-467-9779;
Fax: 81-48-467-9763;
E-mail: tomomi.shimogori@riken.jp
Education: B.A. Hoshi Collage of Pharmacy, Tokyo, Japan 1993
Ph.D., Pharmaceutical Sciences, Graduate School, Chiba University, Chiba, Japan 1998

Academic appointment

1998 to 2004 Dept. Neurobiology, Pharmacology and Physiology, University of Chicago, USA Laboratory of Dr. Elizabeth A. Grove
2004 to 2010 RIKEN BSI Unit Leader of Shimogori Research Unit
2010 to 2018 RIKEN BSI Team Leader of Lab for Molecular Mechanisms of Thalamus Development
2018 to present RIKEN CBS Team Leader of Lab for Molecular Mechanisms of Brain Development

Publications /last 3 years/

- Yamanaka T, Tosaki A, Kurosawa M, Shimogori T, Hattori N, Nukina N. (2016) Genome-wide analyses in neuronal cells reveal that USF transcription factors regulate lysosomal gene expression. FEBS J. doi: 10.1111/febs.13650.
- Minoura I, Takazaki H, Ayukawa R, Saruta C, Hachikubo Y, Uchimura S, Hida T, Kamiguchi H, Shimogori T, Muto E. (2016) Reversal of axonal growth defects in an extraocular fibrosis model by engineering the kinesin-microtubule interface. Nat Commun. 7:10058. doi: 10.1038/ncomms10058.
- Yamanaka T, Tosaki A, Miyazaki H, Kurosawa M, Koike M, Uchiyama Y, Maity SN, Misawa H, Takahashi R, Shimogori T, Hattori N, Nukina N. (2016) Differential roles of NF-Y transcription factor in ER chaperone expression and neuronal maintenance in the CNS. Sci Rep. 6:34575. doi: 10.1038/srep34575.
- Kino Y, Washizu C, Kurosawa M, Yamada M, Doi H, Takumi T, Adachi H, Katsuno M, Sobue G, Hicks GG, Hattori N, Shimogori T, Nukina N. (2016) FUS/TLS acts as an aggregation-dependent modifier of polyglutamine disease model mice. Sci Rep. 6:35236. doi: 10.1038/srep35236.
- Okano H, Sasaki E, Yamamori T, Iriki A, Shimogori T, Yamaguchi Y, Kasai K, Miyawaki

A. (2016) Brain/MINDS: A Japanese National Brain Project for Marmoset Neuroscience. Neuron 92:582-590. doi: 10.1016/j.neuron.2016.10.018.

- Kawata M, Taniguchi Y, Mori D, Yano F, Ohba S, Chung UI, Shimogori T, Mills AA, Tanaka S, Saito T. (2017)
- Different regulation of limb development by p63 transcript variants. PLoS One. 12:e0174122. doi:10.1371/journal.pone.0174122.
- Watson C, Shimogori T, Puelles L. (2017) Mouse Fgf8-Cre-LacZ lineage analysis defines the territory of the postnatal mammalian isthmus. J Comp Neurol. 2017 May 16. doi: 10.1002/cne.24242.
- Alchini R, Sato H, Matsumoto N, Shimogori T, Sugo N, Yamamoto N. (2017) Nucleocytoplasmic Shuttling of Histone Deacetylase 9 Controls Activity-Dependent Thalamocortical Axon Branching. Sci Rep. 20:6024. doi: 10.1038/s41598-017-06243-7.
- Shimogori T, Abe A, Go Y, Hashikawa T, Kishi N, Kikuchi SS, Kita Y, Niimi K, Nishibe H, Okuno M, Saga K, Sakurai M, Sato M, Serizawa T, Suzuki S, Takahashi E, Tanaka M, Tatsumoto S, Toki M, U M, Wang Y, Windak KJ, Yamagishi H, Yamashita K, Yoda T, Yoshida AC, Yoshida C, Yoshimoto T, Okano H. in press. Digital gene atlas of neonate common marmoset brain. Neurosci Res. doi: 10.1016/j.neures.2017.10.009.
- Peng J, Fabre PJ, Dolique T, Swikert SM, Kermasson L, Shimogori T, Charron F. (2018) Sonic Hedgehog Is a Remotely Produced Cue that Controls Axon Guidance Trans-axonally at a Midline Choice Point. Neuron. 97:326-340.e4. doi: 10.1016/j.neuron.2017.12.028.

Invited presentations

- IBENS, Ecole Normale Superieure, Paris, France (2017 Mar)
- Montreal Neurological Institute, McGill University, Montreal, Quйbec, Canada (2017 May)
- Institut de Recherches Cliniques de Montrйal, Montrйal, Quйbec, Canada (2017 May)
- Depts of Cell Biology and Neurobiology, Duke university, North Carolina, USA (2017 May)
- Boston Children's Hospital, Harvard University, Boston, USA (2017 June)
- The 48th NIPS symposium, Okazaki, Japan (2017 Oct)
- McGill University, Department of Physiology, Montreal, Canada (2017 Nov)
- Indiana University, Linda and Jack Gill Chair of Neuroscience Department of Biology, Indiana, USA (2017 Nov

IVAN STEPANOV

Dr. Ivan Stepanov's principal research interest is in neuroimaging of brain and spinal cord tumors. Dr. Stepanov received his medical degree from the Irkutsk State Medical University in 2016. He completed his neurosurgery residency at the Irkutsk State Medical University. He trained under world famous neurosurgeon, Prof. Vadim A. Byvaltsev. Dr. Stepanov has published more than 60 peer-reviewed papers related to nervous system tumors, intervertebral degenerative disk disease and other neurosurgical topics.

INVITED SPEAKERS

DAIJIRO YANAGISAWA

Date of Birth: March 13, 1979
Place of Birth: Nagoya, Japan
Gender: Male
Marital Status: Single
Nationality: Japanese
Office Address: Molecular Neuroscience Research Center Shiga University of Medical Science Setatsukinowa-cho, Otsu, 520-2192 Japan
TEL&FAX: +81-77-548-2335
E-mail: daijiroy@belle.shiga-med.ac.jp

Educations:

- Ph.D. in Pharmaceutical Sciences, Kyoto Pharmaceutical University, Kyoto, Japan (March 2008)
- M.S. in Pharmaceutical Sciences, Kyoto Pharmaceutical University, Kyoto, Japan (March 2005)
- B.S. in Pharmacy, Kyoto Pharmaceutical University, Kyoto, Japan (March 2003)

Research experience:

Associate Professor (June 2015–present):
Molecular Neuroscience Research Center, Shiga University of Medical Science, Otsu, Japan
Assistant Professor (April 2012–May 2015):
Molecular Neuroscience Research Center, Shiga University of Medical Science, Otsu, Japan
Postdoctoral Research (July 2008–March 2012):
Molecular Neuroscience Research Center, Shiga University of Medical Science, Otsu, Japan
(Research adviser: Prof. IkuoTooyama)
Research Fellow of the Japan Society for the Promotion of Science (April 2011—March 2012)
Postdoctoral research (April 2008–June 2008):
Department of Neurobiology, Kyoto Pharmaceutical University, Kyoto, Japan
(Research adviser: Prof. Takashi Taniguchi and Dr. Yoshihisa Kitamura)
Doctoral research (April 2003–March 2008)
Department of Neurobiology, Kyoto Pharmaceutical University, Kyoto, Japan
(Research adviser: Prof. Takashi Taniguchi and Dr. Yoshihisa Kitamura)

Fellowships

- Research Fellowship of the Japan Society for the Promotion of Science for Young Scientists (2011-2012)

Awards and honors:

- FASMI Young Investigator Travel Award: 12th Annual Meeting of the Japanese Society for Molecular Imaging.

- Young Investigator's Award: The 24th Annual Meeting of the Japanese Society of Cerebral Blood Flow and Metabolism (November 2012)
- Prize for Encouragement:The 10th Bio Business Competition Japan(February 2010)
- Annual Meeting Outstanding Presentation Award:The 81st Annual Meeting of The Japanese Pharmacological Society(March 2008)

Qualifications:

- Japanese Pharmacist License Registration (May 2003)

Publication list:

- Hamezah HS, Durani LW, Yanagisawa D, Ibrahim NF, Aizat WM, Bellier JP, Makpol S, Wan Ngah WZ, Damanhuri HA, Tooyama I. Proteome profiling in the hippocampus, medial prefrontal cortex, and striatum in the aging rat. Experimental Gerontology, 111, 53–64, 2018. DOI: 10.1016/j.exger.2018.07.002
- Durani LW, Hamezah HS, Ibrahim NF, Yanagisawa D, Nasaruddin ML, Mori M, Makpol S, Wan Ngah WZ, Damanhuri HA, Tooyama I. Tocotrienol-rich fraction of palm oil improves behavior impairments and regulates metabolites associated with Alzheimer's disease in A-PP/PS1 mice. Journal of Alzheimer's Disease, 64, 249–267, 2018. DOI: 10.3233/JAD-170880
- Yanagisawa D, Ibrahim NF, Taguchi H, Morikawa S, Kato T, Hirao K, Shirai N, Sogabe T, Tooyama I. Fluorine-19 magnetic resonance imaging probe for the detection of tau pathology in female rTg4510 mice. Journal of Neuroscience Research, 96, 841–851, 2018. DOI: 10.1002/jnr.24188
- Durani LW, Hamezah HS, Ibrahim NF, Yanagisawa D, Makpol S, Damanhuri HA, Tooyama I. Age-related changes in the metabolic profiles of rat hippocampus, medial prefrontal cortex and striatum. Biochemical and Biophysical Research Communications.493, 1356–1363, 2017. DOI:10.1016/j.bbrc.2017.09.164
- Hamezah HS, Durani LW, Ibrahim NF, Yanagisawa D, Kato T, Shiino A, Tanaka S, Damanhuri HA, Wan Ngah WZ, Tooyama I. Volumetric changes in the aging rat brain and its impact on cognitive and locomotor functions. Experimental Gerontology, 99, 69–79, 2017. DOI:10.1016/j.exger.2017.09.008
- Yanagisawa D, Oda K, Inden M, Morikawa S, Inubushi T, Taniguchi T, Hijioka M, Kitamura Y, Tooyama I. Fluorodopa is a promising fluorine-19 MRI probe for evaluating striatal dopaminergic function in a rat model of Parkinson's disease. Journal of Neuroscience Research, 95, 1485–1494, 2017.DOI: 10.1002/jnr.23983
- Ibrahim NF, Yanagisawa D, Durani LW, Hamezah HS, Damanhuri HA, Wan Ngah WZ, Tsuji M, Kiuchi Y, Ono K, Tooyama I. Tocotrienol-rich fraction modulates amyloid pathology and improves cognitive function in A-PP/PS1 mice. Journal of Alzheimer's Disease, 55, 597–612, 2017.DOI: 10.3233/JAD-160685
- Ogawa T, Irikawa N, Yanagisawa D, Shiino A, Tooyama I, Shimizu T. Taste detection and recognition thresholds in Japanese patients with Alzheimer-type dementia. Auris Nasus Larynx, 44, 168–173, 2017. DOI: 10.1016/j.anl.2016.06.010
- Guan H, Yang H, Yang M, Yanagisawa D, Bellier JP, Mori M, Takahata S, Nonaka T, Zhao S, Tooyama I. Mitochondrial ferritin protects SH-SY5Y cells against H2O2-induced oxidative stress and modulates □-synuclein expression. Experimental Neurology, 291, 51–61, 2017. DOI: 10.1016/j.expneurol.2017.02.001
- Kitamura Y, Inden M, Kimoto K, Takata K, Yanagisawa D, Hijioka M, Ashihara K, Tooyama I, Shimohama S, Ariga H. Effects of a DJ-1-binding compound on spatial learning and memory impairment in a mouse model of Alzheimer's disease. Journal of Alzheimer's Disease, 55, 67–72, 2017.DOI: 10.3233/JAD-160574
- Wang X, Yang H, Yanagisawa D, Bellier JP, Morino K, Zhao S, Liu P, Vigers P, Tooyama I. Mitochondrial ferritin affects mitochondria by stabilizing HIF-1□ in retinal pigment epithelium: implications for the pathophysiology of age-related macular degeneration. Neurobiology of Aging, 47, 168–179, 2016. DOI: 10.1016/j.neurobiolaging.2016.07.025
- Inden M, Takata K, Yanagisawa D, Ashihara E, Tooyama I, Shimohama S, Kitamura Y. -4 Nicotinic acetylcholine receptor modulated by galantamine on nigrostriatal terminals regulates dopamine receptor-mediated rotational behavior. Neurochemistry International, 94, 74–81, 2016.DOI: 10.1016/j.neuint.2016.02.008

INVITED SPEAKERS

HSUEH CHENG CHIANG

Professor Chiang went to Fu-Jen University in Taipei majoring chemistry in 1998 and followed his studies at National Yang-Ming University in Biochemistry from 1998 to 2000. Chiang studied Neuroscience at Stony Brook, Cold Spring Harbor Lab joint program in USA and granted PhD in 2009.

Following to his PhD degree, professor Chiang started post-doctoral studies at NINDS/ National Institute of Health in the USA between 2009 and 2014. Professor Chiang is a member of Society of Neuroscience and Society of Biophysics and published over 20 high impact articles in peer reviewed journals.

INVITED SPEAKERS

TETSUYA HIRAMATO

Chief Doctor of the Department of Psychosomatic Medicine, National Hospital Organization, Fukuoka Hospital, Fukuoka, Japan (since 04/2013)

Board certification

- Board Certified Specialist of the Japanese Society of Internal Medicine
- Board Certified Specialist of the Japanese Society of Psychosomatic Medicine
- Board Certified Specialist of the Japanese Society of Oriental Medicine

Education and degrees

- Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan: PhD 2009
- Medical Sciences Hiroshima University, Hiroshima, Japan: BA 1994, MA 1996 Medical Sciences

Publications

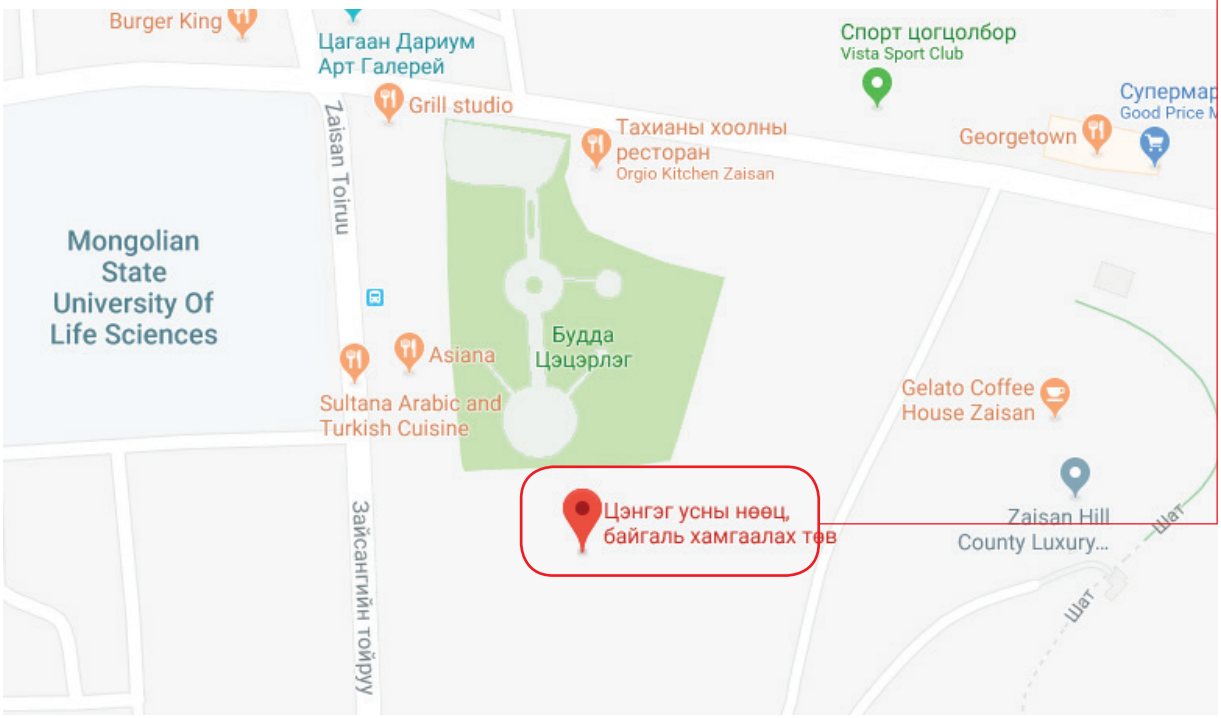
- Hiramoto T, Yoshihara K, Asano Y, Sudo N. (2017) Protective Role of the Hepatic Vagus Nerve against Liver Metastasis in Mice. Neuroimmunomodulation. 24:341-7.
- Sawamoto R, Nagano J, Kajiwara E, Sonoda J, Hiramoto T, Sudo N. (2016) Inhibition of emotional needs and emotional wellbeing predict disease progression of chronic hepatitis C patients: an 8-year prospective study. Biopsychosoc Med. 10:24.
- Yoshihara K, Hiramoto T, Oka T, Kubo C, Sudo N. (2014) Effect of 12 weeks of yoga training on the somatization, psychological symptoms, and stress-related biomarkers of healthy women. Biopsychosoc Med. 8:1.
- Nishino R, Mikami K, Takahashi H, Tomonaga S, Furuse M, Hiramoto T, Aiba Y, Koga Y, Sudo N. (2013) Commensal microbiota modulate murine behaviors in a strictly contamination-free environment confirmed by culture-based methods. Neurogastroenterol Motil. 25:521-8.
- Zhao P, Hiramoto T, Asano Y, Kubo C, Sudo N. (2012) Chronic psychological stress exaggerates the compound 48/80-induced scratching behavior of mice. Pharmacology, Biochemistry and Behavior. 105:173–6
- Asano Y, Hiramoto T, Nishino R, Aiba Y, Kimura T, Yoshihara K, Koga Y, Sudo N. (2012) Role of gut microbiota in the production of biologically active, free catecholamines in the gut lumen of mice. American Journal of Physiology Gastrointesitinal and Liver Physiology. 303:G1288-95.
- Yoshihara K, Hiramoto T, Sudo N, Kubo C. (2011) Profile of mood states and stress-related biochemical indices in long-term yoga practitioners. Biopsychosocial medicine 5:6.
- Hiramoto T, Oka T, Yoshihara K, Kubo C. (2009) Pyrogenic cytokines did not mediate a stress interview-induced hyperthermic response in a patient with psychogenic fever: a case report. Psychosomatic Medicine 71:932-936.
- Hiramoto T, Chida Y, Sonoda J, Yoshihara K, Sudo N, Kubo C. (2008) The hepatic vagus nerve attenuates Fas-induced apoptosis in the mouse liver via □7 nicotinic acetylcholine receptor. Gastroenterology 134:2122-2131.
- Chida Y, Sudo N, Sonoda J, Hiramoto T, Kubo C. (2007) Childhood psychological stress exacerbates adult mouse asthma by hypothalamus-pituitary-adrenal axis. American Journal of Respiratory Critical Care Medicine 175: 316-322.
- Chida Y, Hiramoto T, Sudo N, Kubo C. (2007) The modulation of central nervous system on Fas-induced liver injury. Chapter 5 In Johansson LM (ed) Neuroimmunology Research Perspective. Hauppauge, NY: Nova Science Publishers, Inc., p131-147.

VENUE MAP

Day 1

23th September, 2018

The Fresh Water Resources and Nature Conservation Center

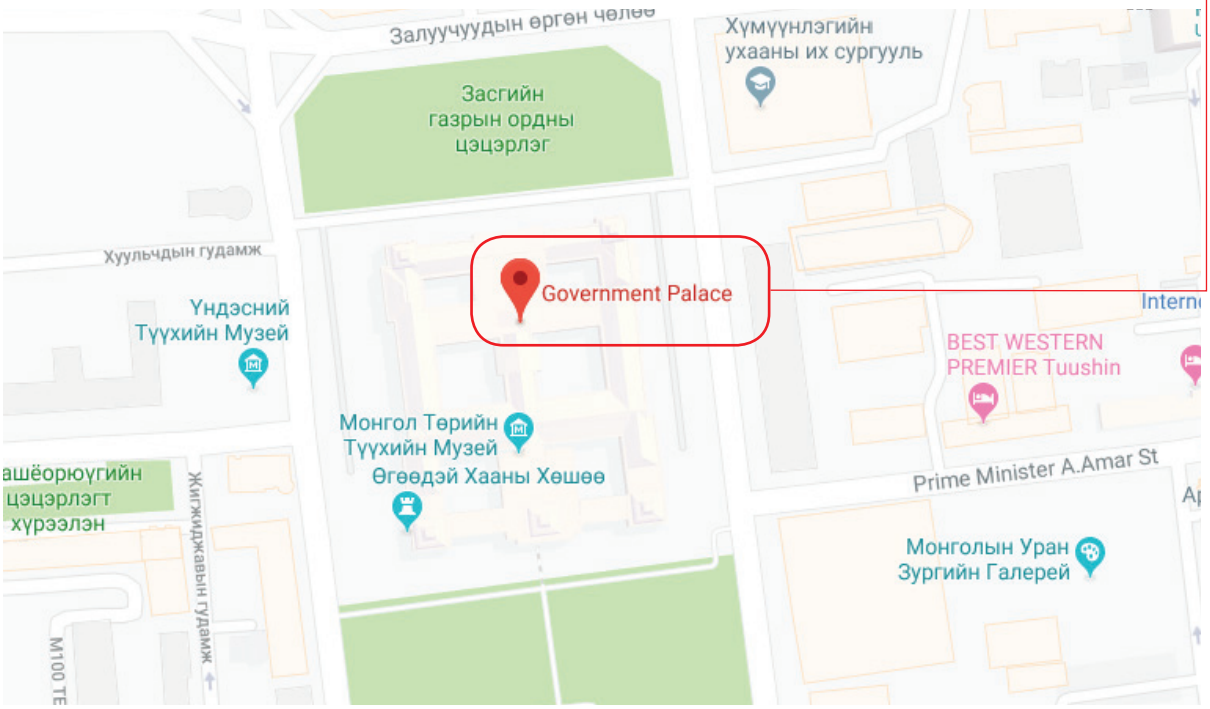


VENUE MAP

Day 2

24th September, 2018

Government Palace



VENUE MAP

Day 2

24th September, 2018

Mongolian National University Of Medical Sciences

DIFFUSION-WEIGHTED MAGNETIC RESONANCE IMAGING OF BRAIN METASTASES

Vadim A. Byvaltsev[1, 2, 3, 4, 5], Ivan A. Stepanov[1]

[1] Irkutsk State Medical University, Irkutsk, Russian Federation
[2] Railway Clinical Hospital on the station Irkutsk-Passazhirskiy of Russian Railways Ltd., Irkutsk, Russian Federation
[3] Irkutsk Scientific Center of Surgery and Traumatology, Irkutsk, Russian Federation
[4] Irkutsk State Academy of Postgraduate Education, Irkutsk, Russian Federation
[5] Institute of Nuclear Physics n.a. G.I. Budker of the SB RAS, Novosibirsk, Russian Federation

Introduction. Brain metastases are observed in up to 40% of all intracranial tumors. Some types of metastatic tumors cause difficulties in differential diagnosis, since they have similar signal characteristics with other pathological entities in neuroimaging. Obviously, the additional diagnostic methods to determine the prognosis and tactics of further management of this group of patients should be implemented.

The purpose. To study the role of diffusion-weighted magnetic resonance imaging (MRI) in differential diagnostics and predicting the survival rate in patients with brain metastases.

Methods. The study included data from MRI and morphological studies of 23 patients with brain metastases. The obtained values of the apparent diffusion coefficient (ADC) of tumors were compared with their histological type, cell density, and the index of proliferative activity Ki-67. In addition, the influence of ADC values on the overall survival rate was assessed.

Results. A reliable inverse correlation of ADC values and the index of proliferative activity for various types of brain metastases ($r=-0.74$, $p=0.014$) was established. The dependence of ADC values and overall survival rate of patients with metastases in the brain is presented. The overall survival rate in patients with an ADC value greater than 947.2 mm^2/sec was 9.8 months (95% CI: 8.6-11.3), and with ADC value less than 947.2 mm^2/sec - 6.4 months (95% CI: 3.7-9.1).

Conclusions. The technique of diffusion-weighted MRI plays an important role in the differential diagnosis of brain metastases; it can be used as a tool of comprehensive preoperative assessment when planning the surgery and as a prognostic factor of overall survival rate for this group of patients.

CROSSTALK BETWEEN BRAIN AND LIVER: ROLE OF AUTONOMIC NERVOUS SYSTEMS IN LIVER PATHOPHYSIOLOGY

Tetsuya Hiramoto M.D., PhD.
Department of Psychosomatic Medicine, National Hospital Organization,
Fukuoka Hospital. 811-1394 Fukuoka, Japan

The liver reciprocally communicates with the brain via a mechanism which is regulated by complex networks of the endocrine and autonomic nervous systems. Through these pathways, the brain regulates several liver functions, such as, metabolism, hepatic circulation, liver regeneration, bile formation, and hepatic immune response.

Previous studies indicated that the brain-liver crosstalk was involved in not only normal physiological function but also pathological condition of the liver. It is also reported that psychosocial stress was significantly correlated with the exaggeration of inflammatory, fibrosing changes in alcoholic liver injury and with a higher incidence of hepatobiliary cancer. These findings suggest that hepatic nervous systems may play an important role in regulation of hepatic diseases.

Recently, much research progress regarding brain-liver crosstalk has been made and several new findings have been reported. Especially, the novel function of efferent parasympathetic (vagus) nerve in regulation of inflammatory response has been well studied. In this regard, we also found that the hepatic nervous systems play a crucial role in mouse model of fulminant hepatitis.

In this presentation, I would like to present our experimental data regarding how hepatic autonomic nervous systems control a series of events in the mouse model of 1) Fas-induced liver injury (fulminant hepatitis) and 2) liver cancer metastasis.

NEURON-GLIA METABOLIC COUPLING : ROLE IN NEURONAL PLASTICITY AND NEUROPROTECTION

Pierre J. Magistretti, MD, PhD

Division of Biological and Environmental Sciences and Engineering, KAUST, Thuwal, KSA
Brain Mind Institute, EPFL, Lausanne, Switzerland
Department of Psychiatry UNIL/CHUV

A tight metabolic coupling between astrocytes and neurons is a key feature of brain energy metabolism (Magistretti and Allaman, Neuron, 2015). Over the years we have described two basic mechanisms of neurometabolic coupling. First the glycogenolytic effect of VIP and of noradrenaline indicating a regulation of brain homeostasis by neurotransmitters acting on astrocytes, as glycogen is exclusively localized in these cells. Second, the glutamate-stimulated aerobic glycolysis in astrocytes. Both the VIP- and noradrenaline-induced glycogenolysis and the glutamate-stimulated aerobic glycolysis result in the release of lactate from astrocytes as an energy substrate for neurons (Magistretti and Allaman, Neuron, 2015; Magistretti and Allaman, Nature Reviews Neuroscience, 2018).

We have shown that lactate is necessary not only as an energy substrate but is also a signaling molecule for long-term memory consolidation and for maintenance of LTP (Suzuki et al, Cell, 2011).

At the molecular level we have found that L-lactate stimulates the expression of synaptic plasticity-related genes such as Arc, Zif268 and BDNF through a mechanism involving NMDA receptor activity and its downstream signaling cascade Erk1/2 (Yang et al, PNAS, 2014). L-lactate potentiates NMDA receptor-mediated currents and the ensuing increases in intracellular calcium (Jourdain et al, Scientific Reports, 2018) . These results reveal a novel action of L-lactate as a signaling molecule for neuronal plasticity.

We have also shown that peripheral administration of lactate exerts antidepressant-like effects in three animal models of depression (Carrard et al, Mol.Psy., 2016).

CELULAR AND MOLECULAR BASES OF BEHAVIOUR

Juan Lerma
Instituto de Neurociencias, Consejo Superior de Investigaciones Cientнficas &
Miguel Hernбndez University. San Juan de Alicante, Espaca.

The brain is probably the most perfect and complicated machine in Nature. We are currently witnessing an explosion in knowledge related to the brain and its functioning. Probably, science has contributed to the understanding of the brain more in recent years than the whole 20th century, despite last century has been enormously prolific. Although we are witnessing a real revolution, the brain diseases (mental or degenerative) still represent an important social and economic burden and their understanding is one of the greatest social challenges. Only in Europe, the annual costs of brain diseases amounted 768 billion euros in 2010. Despite the long way run, we are still far from the overall understanding of the human brain. There is little doubt that without advancing in the most fundamental aspects of brain organization and function, we will not be able to find remedies to brain diseases.

One of the most exciting objectives of Neuroscience is to understand how behaviour is generated. What are the intricate mechanisms that make us think, love, hate, be happy or sad. Revealing the cellular and molecular bases of behaviour has been a myth for more than a century, and is now when we are starting to reveal how this is possible, how the activity of certain neural circuits makes us to behave in one or another way and how aberrant operations produce various mental illnesses, how slight alterations of neuronal communication produce the brain learn better or worse, suffer from depression, anxiety or alter the sociability of the individuals. The development of new techniques is allowing to analyse the human brain and are providing data that help further understanding obtained in experimental animals. The manipulation of genes critical for neuronal communication, for example, summarizes perfectly some of the most outstanding features of mental illness, opening a window to its treatment. There is no doubt that all this knowledge will reveal the functioning of the human brain and generate cues capable of altering the societal relationships and structure. At this Conference, I will review some of these key findings and their implications for the present and future of society.

EARLY LIFE EXPERIENCE SHAPES NEURONAL CIRCUIT FORMATION

Tomomi Shimogori
Team Leader
RIKEN Center for Brain Science (CBS)
Lab for Molecular Mechanisms of Brain Development

Experience-dependent structural changes in the developing brain are fundamental for proper neural circuit formation. Here, we show that during the development of the sensory cortex, dendritic field orientation is controlled by the BTB/POZ domain-containing 3 (BTBD3). In developing mouse somatosensory cortex, endogenous Btbd3 translocated to the cell nucleus in response to neuronal activity and oriented primary dendrites toward active axons in the barrel hollow. Btbd3 also directed dendrites toward active axon terminals when ectopically expressed in mouse visual cortex or normally expressed in ferret visual cortex. BTBD3 regulation of dendrite orientation is conserved across species and cortical areas and shows how high-acuity sensory function may be achieved by the tuning of subcellular polarity to sources of high sensory activity.

THE POTENTIAL ROLE CELLULAR DEGRADATION SYSTEM IN THE Aβ-INDUCED PATHOLOGY

Hsueh Cheng Chiang
Dept. of Pharmacology, National Cheng Kung University, Tainan, Taiwan

Alzheimer's disease (AD), a neurodegenerative disease, is the most common form of dementia. One of the hallmarks of AD is the accumulated Aβ aggregates inside the brain. Multi-cellular signals are altered by Aβ aggregates including ER stress. Mounting evidence has further demonstrated that besides of ER stress, one of the early cellular responses to the Aβ aggregates, many other cellular degradation pathways, such as: endosomal-lysosomal system (ELS), autophagy, and ubiquitin-proteasome system (UPS), also play a critical role in the Aβ pathogenesis. However, the specific roles of these clearance pathways in the removal of Aβ peptides and the pathogenesis underlying AD are unclear. Our in vitro and in vivo genetic approaches revealed that ER stress was the early response to the Aβ aggregates. There was a sequential activation of ER stress effectors, IRE1 was activated before PERK activation, and this sequential activation was regulated by Aβ aggregates-induced proteasome activation/damage. Different ER stress effectors has distinct effect on the Aβ-induced impairment, Xbp1 overexpression at an early stage reversed Aβ-induced early death while PERK activation enhanced Aβ-induced learning deficits. ELS mainly removed monomeric β-amyloid42 (Aβ42), while autophagy and UPS cleared oligomeric Aβ42. Results from genetic fluorescence imaging showed that these pathways were damaged in the following order: ER stress, UPS, autophagy, and finally ELS. Altogether, the results of our study demonstrate that the complex roles of ER stress during Aβ pathogenesis and the distinct role of each degradation pathway in the disease. Further, this study also raises the possibility of using different degradation pathway as a reporter to indicate the status of disease progression.

DETECTION OF ABNORMAL PROTEIN ACCUMULATION IN ALZHEIMER'S DISEASE USING MAGNETIC RESONANCE IMAGING

Daijiro Yanagisawa, Hiroyasu Taguchi, Ikuo Tooyama
Molecular Neuroscience Research Center, Shiga University of Medical Science

Alzheimer's disease (AD) is a neurodegenerative disease characterized by progressive cognitive deterioration. The pathological features of AD include senile plaques composed of extracellular deposits of amyloid-β (Aβ) and neurofibrillary tangles formed by intracellular accumulation of abnormally hyperphosphorylated tau. Evaluation of Aβ and tau in the brain by imaging modalities, so-called amyloid imaging and tau imaging, respectively, have attracted much attention because of its potential contributions to early diagnosis and monitoring of disease progress. We have investigated fluorine-19 magnetic resonance imaging (19F-MRI) for amyloid imaging and tau imaging. 19F-MRI has the following advantages: MR sensitivity of 19F is relatively high compared to the sensitivity using various nuclei other than 1H (1H, 100%; 19F, 83%; 31P, 6.6%; 13C, 1.6%). Furthermore, no fluorine atoms exist in biological tissues. This results in low endogenous background noise. The 19F atom is also a non-radioactive isotope comprising 100% of naturally abundant fluorine. As a result, 19F-MRI would prove a highly sensitive, readily available, low-background, and cost-effective approach once a suitable high-quality probe has been formulated. A styrylbenzoxazole derivative with a polyethylene glycol side chain bearing a CF3 group, Shiga-X22, bond to Aβ aggregates in the brain of APP/PS1 transgenic mice after intravenous injection. 19F-MRI conducted in a 7.0 T horizontal-bore magnetic resonance scanner detected significant accumulation of 19F signals in the brain of APP/PS1 transgenic mice injected with Shiga-X22, compared with wild-type mice injected with Shiga-X22. Next, a novel fluorine-19-labeling compound has been developed as a probe for tau imaging using 19F-MRI. This compound is a buta-1,3-diene derivative with a polyethylene glycol side chain bearing a CF3 group and is known as Shiga-X35. rTg4510 mice (a mouse model of tauopathy) and wild-type mice were intravenously injected with Shiga-X35. The 19F-MRI in rTg4510 mice showed an intense signal in the forebrain region. Analysis of the signal intensity in the forebrain region revealed a significant accumulation of fluorine-19 magnetic resonance signal in the rTg4510 mice, compared with the wild-type mice. Although further efforts are required, 19F-MRI would be a promising tool to evaluate abnormal protein accumulation in AD.

THE POSSIBLE ROLE IN FEEDING REGULATION BY DIRECT ACTION OF GLUCAGON ON VAGAL AFFERENT NEURONS

Enkh-Amar Ayush,[1] Yusaku Iwasaki,[2] Toshihiko Yada [2]
[1] Department of Internal Medicine, Mongolian National University of Medical Sciences
[2] Department of Integrative physiology, Jichi Medical University, Japan
Email: enkhamar.a@mnums.edu.mn

Keywords
Glucagon, Vagal afferents, Food intake, Cholecystokinin

Introduction

Glucagon reportedly is transiently secreted immediately after meals and implicated in meal-evoked satiety. Glucagon intraperitoneal injection reduces feeding and this effect is attenuated by subdiaphragmatic vagotomy, suggesting the involvement of the vagal afferent nerves. However, the mechanism by which glucagon influences vagal afferents is less defined.

Aim

In this study, we investigate the direct action of glucagon on vagal afferent nodose ganglion (NG) neurons.

Methods

- Male C57BL/6J mice
- Immunohistochemical detection of phosphorylated extracellular signal regulated kinase 1 and 2 (ERK1/2) in nodose ganglia
- Measurement of cytosolic Ca2+ concentration ([Ca2+]i) in single nodose ganglion neurons
- Reverse transcriptase (RT)-PCR

Results

Glucagon receptor mRNA was detected in mice NG using by RT-PCR. Glucagon at 10^{-9}-10^{-7} M, but not 10-10 M, increased [Ca2+]i in isolated single NG neurons. Glucagon at 10-8 M exerted a maximal effect, inducing [Ca2+]i increases in approximately 8% of NGNs. Glucagon-induced [Ca2+]i increases were attenuated by glucagon receptor antagonist. All of the glucagon-responsive NG neurons also responded to cholecystokinin-8 (CCK-8) with increases in [Ca2+]i, which reduces food intake via direct interaction with vagal afferents.

Conclusion

These results demonstrate that glucagon directly interacts with the subpopulation of vagal afferent neurons.

HIGH FAT DIET INDUCES ELECTROPHYSIOLOGICAL CHANGE AND INFLAMMATORY RESPONSE IN NEURONS OF PARAVENTRICULAR NUCLEUS

Zesemdorj Otgon-Uul[1,2],Yuko Maejima[3],Kenju Shimomura[3],
Toshihiko Yada[2]
1 Department of Pathology, Mongolian National University of Medical Sciences
2 TheDivision of Integrative Physiology, Department of Physiology, Jichi Medical University School of Medicine, Japan
3Department of Bioregulation and Pharmacological Medicine, Fukushima Medical University

School of Medicine

Abstract

High fat diet (HFD) induces obesity and hyperphagia and associated with inflammation in peripheral tissues. Recent studies suggest the occurrence of inflammation not only in peripheral but also in the hypothalamus. In this study we have investigated the effect of HFD on paraventricular nucleus (PVN) of hypothalamus, which is important region for the regulation of food intake. After 8 weeks of HFD, neurons in PVN showed significantly enhanced electrical activities with increased resting membrane potential and firing action potential. Also, heat shock protein 70 (HSP70) was found to be induced in PVN neurons. The identity of PVN neurons with HSP were mainly Oxytocin neuron. HSP70 is known to be induced by stroke, trauma or ischemic insult to the brain. Our data suggest that HFD has similar impact to severe neural injury.

QUALITY OF LIFE AND PSYCHOLOGICAL SCREENING IN MONGOLIAN PATIENTS WITH TYPE 2 DIABETES: A CROSS SECTIONAL HOSPITAL-BASED STUDY

Authors:, Erkhembayar Nayantai[1], Anir Khurelbaatar[2], Shirnen Odnasan[3], Ankhbayar Davaa-erdene[4], Damdindorj Boldbaatar[1]
[1]Physiology department of Mongolian National University of Medical Science, Mongolia
[2]Neurology department of Mongolian National University of Medical Science, Ulaanbaatar, Mongolia
[3] Department of General Surgery, Inter-med hospital, Ulaanbaatar, Mongolia
[4] Department of General Surgery, Songdo hospital, Ulaanbaatar, Mongolia

Background: Patients with type 2 diabetes mellitus are at high risk for psychiatric morbidities, including depression, heightened anxiety and low quality of life (Collins MM et al., 2009, Gonzales JS et al., 2008).

Method To determine the psychological issues in patients with diabetes, we assessed quality of life (Short Form 36 Health Survey, SF-36), depression (Center for Epidemiological Studies Depression Scale, CES-D), and anxiety (Spielberger's State-Trait Anxiety Inventory, STAI) with measuring a fasting glucose level, body mass index, and blood pressure in 82 patients (mean age: 56.14±10.1 years, male/female ratio: 57/42) who were referred to the department of endocrinology at a municipal hospital between January and February, 2016.
Result: In this study 82 participants were included, and they separated to case group and control group. In case group sex ratio 1:1 or 30 (46.9%): 34 (53.1%), average age was 56.0±1.1, most of them was over 60 age, blood glucose level was 12.8±0.5, and it was significantly high from control group (P<0.001). 25 (39.06%) participants was in overweight. Subcutaneous fat was significantly high from control group (p<0.008) and neck circumference was also higher than control group (p<0.032). In depression we divided them to the two group by how long the patients have been DM (more than 10 years, less than 10 years). STAI-state score was not significantly difference between 2 groups (P>0.915). STAI-trait was not significantly difference between two groups (P>0.148). About general score, there was a significant difference between each group (p<0.001), general score of QOL was low in case group. Along with diabetic suffering years increasing the patients bodily pain was increasing (P<0.003). Physical role functioning (P<0.003) and emotional role functioning (P<0.001) was significantly low in case group.
Conclusion: These findings suggest that Mongolian adult patients with type 2 diabetes have an increased risk of suffering from depression and anxiety which lead to impaired quality of life. In conclusion, this survey describes for the first time quality of life, depression, and anxiety scores in patients with diabetes in Mongolia.
Key word: Diabetes, Anxiety, Depression, Fasting glucose

SLEEP CHRONOLOGY AND BEHAVIORAL CHARACTERISTICS OF SUBJECTS WHO HAS HIGH RISK OF SLEEP APNEA

Ryenchindorj Erkhembayar[1], Yerkyebulan Mukhtar[2], Battuvshin Lkhagvasuren[3], Damdindorj Boldbaatar[4*]

[1] Division for Educational Policy and Management, Mongolian National University of Medical Sciences, Mongolia

[2] Department of Epidemiology and Biostatistics, Mongolian National University of Medical Sciences, Mongolia

[3] Division for Science and Technoloy, Mongolian National University of Medical Sciences, Mongolia

[4] Department of Physiology, Mongolian National University of Medical Sciences, Mongolia

Introduction: Obstructive sleep apnea (OSA) is characterized by involuntary cessations of breath; global estimates show this condition is substantially prevalent in adults and epidemiologic studies lack in Mongolia. OSA related circadian rhythm consequences include sleep disturbances, chronic headache in the morning and known have significant health concerns. The aim of this study was to screen for the risk of OSA and to determine associated variables in Mongolian clinical settings using Berlin Questionnaire (BQ) for OSA.

Methods:Out of 89 subjects recruited from internal medicine departments of municipal public hospitals in Ulaanbaatar, 63 patients who fulfilled inclusion criteria were included for screening and measured by demographics, sleep behaviors, physical activity scores, anthropometrics, body mass index (BMI), blood pressure, fasting plasma glucose, and a BQ score.

Results:OSA high risk according to BQ score was found in 32% of these subjects. Among the people who had OSA high risk, measurements of BMI, neck, forearm, chest, waist, right systolic pressure and waist to hip ratio were significantly higher ($p<0.05$). Obesity was significantly associated with OSA high risk in our study (70% vs. 30%; OR=4.83, $p<0.05$) which is the most well-known risk factor for developing OSA. The neck circumference was significantly broader in OSA high risk patients than OSA low risk within obese subgroup ($p<0.05$). Pillow usage was noted significantly higher among OSA high risk population ($p<0.05$).

Conclusion: Sleep hygiene and behavioral aspects remain challenging in OSA patient care. The routine uses of BQ in the clinical setting followed by neck circumference measurement in those with a high risk of OSA may be useful for an early screening of OSA in Mongolia, where polysomnography diagnostics remain unsatisfactory.

Keywords: sleep medicine; obstructive sleep apnea; anthropometry; neck circumference; hypodermal adiposity; Mongolia

CEREBRAL CYSTIC ECHINOCOCCOSIS IN MONGOLIAN CHILDREN CAUSED BY ECHINOCOCCUS CANADENSIS

Orkhontuul Shirmena[a,b*],Khusayan Khairulla[a] , Batbold Batchuluun[c], Avaajigmed Lkhamjav[a], Tugbayar Tseveen[a], Tsetsegdelger Munkhjargal[d], Tsogtsaikhan Sandag[b], Enkhsaikhan Lkhagvasuren[b], Tetsuya Yanagida[e], Yuji Nishikawa[f], Akira Ito[g],
a Department of Neurosurgery, Third State Central Hospital, Ulaanbaatar, Mongolia
b Department of Microbiology and Immunology, School of Bio-Medicine, Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia
c Department of Medical Service, Songinokhairkhan District Health Center, Ulaanbaatar, Mongolia
d Department of Adult Pathology, National Center for Pathology of Mongolia, Ulaanbaatar, Mongolia
e Laboratory of Veterinary Parasitology, Joint Faculty of Veterinary Medicine, Yamaguchi University, Yamaguchi, Japan
f Department of Pathology, Asahikawa Medical University, Asahikawa, Japan
g Department of Parasitology, Asahikawa Medical University, Asahikawa, Japan
orkhontuul.sh@gmail.com

Keywords: Cerebral cystic echinococcosis, Echinococcus Canadensis, Primary infection,

Introduction: Cystic echinococcosis (CE) is a chronic disease caused by accidental ingestion of Echinococcus granulosus eggs. Recent molecular reevaluation of E. granulosus has revealed that it is not a single species, but instead consists of 5 cryptic species (E. granulosus, E. equinus, E. ortleppi, E. canadensis, E. felidis) Due to this new information, the dog-sheep strain is now called E. granulosus sensu stricto and the 5 cryptic species are included in E. granulosus sensu lato. Globally, E. granulosus s.s. is believed to be the predominant (75%) cause of human CE, followed by E. canadensis (22%). Approximately 88% and 11% of hepatic CE cases are caused by E. granulosus s.s. and E. canadensis, respectively. These two species are distributed worldwide. Less than 1% of all CE lesions are cerebral. However, these cases are often young children or teenagers. In many reported pediatric cerebral CE cases, there are no other tissues or organs involved. While both E. granulosus s.s. (G1) and E. Canadensis are widely distributed in Mongolia (Fig. 1), initial studies indicate that E. canadensis (G6/ G7) might be the more common species currently infecting humans. Thus far, almost all hepatic CE cases confirmed in Mongolian children were caused by E. canadensis, whereas most confirmed hepatic CE cases in adults were caused by E. granulosus s.s.

Purpose: Molecular identification of cerebral and hepatic CE from the same region would be highly informative. One country where E. granulosus s.s. and E. canadensis are sympatrically distributed is Mongolia.

Metods: A total of 13 cerebral CE cases were surgically treated at the Department of Neurosurgery, Third State Central Hospital, Ulaanbaatar, Mongolia from 2010 to 2015. Paraffin-embedded histopathological specimens were available from the 4 most recent cases diagnosed in 2014 and 2015.

These 4 cerebral CE cases had unilocular cysts full of protoscolices (figure not shown), but no evidence of the presence of macroscopic hepatic CE and/or pulmonary CE. The cases were all from different prefectures. Histopathological confirmation and molecular analysis were performed on the specimens at the Asahikawa Medical University and Yamaguchi University in Japan. Ethical approval (No. 404-4) was issued by the Asahikawa Medical University Research Ethics Committee. DNA was extracted from the formalin-fixed paraffin-embedded histopathological sections using the QIAamp DNA FFPE Tissue Kit (QIAGEN, Germany

Results: These sequences were identical to each other (accession number LC379495). A BLAST search revealed that these sequences were most similar to the cox1 of E. canadensis G6/G7 (99.3–100%), followed by E. canadensis G10 (97.9–98.6%). Based on these findings, the causative agent of these three cerebral CE cases was determined to be E. canadensis G6/G7. A PCR amplicon was not obtained from case 2. Based on the available literature, hepatic CE cases in Mongolia are caused by both E. canadensis (G6/G7 predominant, and rarely G10) (primarily in children and teenagers) and E. granulosus s.s. (G1) (primarily in adults). All reported cerebral CE cases have been caused by E. canadensis and come from areas with known hepatic CE cases caused by E. canadensis. Based on our observations and the observations of others, it has been suggested that E. canadensis (G6/G7) might have a higher affinity for children. Cyst growth due to E. canadensis might also be faster than cyst growth due to E. granulosus s.s., resulting in a greater number of children being diagnosed with E. canadensis.

Conclusion: Questions still exist about differences in Echinococcus spp. Organotropism and whether it is exclusively due to parasite genetic diversity or if human genetics and/or behavior also play a role. For example, differences in the main definitive host species paired with differences in the likelihood of specific groups (e.g., children) interacting with these species may impact the human clinical picture. Further studies on both cerebral and hepatic CE in children, in the same areas, are needed to further investigate this question.

STUDY OF MEMORY IMPAIRMENT IN TEMPORAL LOBE EPILEPSY

Amarjargal M,[1,2]Tuya B,[3]Tuvshinjargal D[4], Tovuudorj A[1]
[1]Department of Neurology, MNUMS, Ulaanbaatar 15120, Mongolia, ,email:amarjargal_m@yahoo.com; [2]Neurological Clinic, Sanus hospital, [3]National Center for Mental Healthl,[4]Department of Radiology, MNUMS

Introduction: Temporal lobe epilepsy (TLE) represents 60% of focal epilepsy in adults, 30%-40% is pharmacoresistant.Investigation of memory impairment in TLE is important which improves chance for diagnosis, treatment. Memory impairment,semiology,interictal EEG, MRI findings in TLE were studied.

Methods: We studied 91 cases with TLE aged from 16 to 65 years, from year 2016 to 2018 in Ulaanbaatar. Theexamination, results of EEG, MRI, neuropsychological test were analyzed using STATA 12.0.

Results: The mean age of patients is 31,median of the duration epilepsy is 10 years. From all patients71.4% presents complex partial seizurewith persistentfrequency.Aura presented in 93.4% of cases particularly vestibular for lateral TLE,gustatory aura, memory disturbance with oroalimentary automatism for mesial TLE ($p<0.05$) patients. Unilateral hand ($p=0.017$), verbal ($p=0.045$) automatism, postictal confusion ($p<0.05$), ictal hand dystonic posture ($p=0.023$) are typical for mTLE. Sharp wave detected for mTLE ($p=0.001$) on the anterior, for lTLE on the middle, posterior temporal electrodes ($p=0.001$). Hippocampal sclerosis (56%), gliarosis (19%), cyst (17%) are main epileptogenic lesions in mTLE and encefalomatia (37%), gliarosis (30%) are evident for lTLE.The mean IQ for participants is $90.7^{\pm}11.8$, 48% of people belongs to the frontage level of intellect and below, 45% is on the moderate.

IQ is depending on the education ($p=0.0001$, $r=0.58$), duration of epilepsy ($p=0.001$, $r=-0.42$) and age at onset of seizure ($p=0.0013$, $r=0.33$).

Discussion:IQ is depending on the education, duration and age at onset ofepilepsy, didn't related withsemiology, exhibition, localization, lateralization ofepileptic discharges, type of lesion.

Key words: temporal epilepsy; automatism; memory; sharp wave

ATTENTION-DEFICIT HYPERACTIVITY DISORDER IN ELEMENTARY SCHOOL STUDENTS: INCIDENCE, SUBTYPES, AND CLINICAL SYMPTOMS

Amgalan Bayarsaikhan[1], Erdenetuya Ganbaatar[1] , Tovuudorj Avirmed[2]
[1]*Department of Pediatrics,* [2]*Department of Neurology, School of Medicine,*
Mongolian National University of Medical Science
Tel: +976-99026933,Email: amgalan@mnums.edu.mn

Key words: ADHD, subtype, DSM–IV

Introduction: Attention Deficit-Hyperactivity Disorder (ADHD) is the most common neurobehavioral disorder in childhood with core symptoms of inattention, hyperactivity, and impulsivity. Worldwide, ADHD is diagnosed in 3-5% of children up to 19 years of age and within this age group from 2% to 16% were schoolchildren. Depending on the country, the ratio of boys to girls fluctuates from 2:1 to 9:1.

Purpose of the study: To define the incidence, the clinical features and subtypes of ADHD in elementary school children of Ulaanbaatar.

Materials and Methods: This research is made by one moment research method covering 600 elementary schoolchildren aged between 7-12 of 2-5 grades, and their parents and 56 teachers of General Education Schools of Bayangol, Bayanzurkh, Baganuur districts of Ulaanbaatar city, Mongolia. 600 normal Mongolian children were rated by their parents and teachers with Teachers and Parents' survey versions of Attention Deficit/ Hyperactivity Disorder Rating Scale-IV.

Statistical analysis: For analyses, a statistical Package for Social Sciences (SPSS version 22) was used for data entry and data analysis. A chi square test used to find the significance of association between different factors. A P value of ≤0.05 was considered statistically significant.

Study results:

In the result of the diagnostic interviews with the parents, the prevalence of ADHD was 10%. Based on symptom rating scales completed by teacher, the prevalence of ADHD was 15.8%. Finally the prevalence of ADHD was 5.5% based on above two rating scales.

Statement of "often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or during other activities", "is often easily distracted by extraneous stimuli", "often has difficulty sustaining attention in tasks or play activities" as a symptom of attention deficit is observed in all 17 (51.5%); "often fidgets with hands or feet or squirms in seat", "Talking too much", "is often "on the go" acting as if "driven by a motor" as hyperactivity symptoms are observed in 19(57.5%) children studied for ADHD.

Conclusion: ADHD is diagnosed in 5.5% of elementary school children with same observation of attention deficit and hyperactivity type and 3.7 times higher (OR=3.7, 95%, 1.65-8.4) occurrence of combined symptoms in boys (p=0.002).

DIAGNOSTIC PERFORMANCE OF ARTERIAL SPIN LABELING FOR GRADING NONENHANCING ASTROCYTIC TUMORS

Delgerdalai Khashbat[1,3], MD, PhD; Masafumi Harada[1], MD, PhD; Takashi Abe[1], MD, PhD; Mungunbagana Ganbold[1], MD, PhD; Seiji Iwamoto[1], MD; Naoto Uyama[1], MD; Saho Irahara[1], MD; Youichi Otomi[1], MD, PhD; Teruyoshi Kageji[2], MD, PhD; Shinji Nagahiro[2], MD, PhD

[1]Departments of Radiology and Radiation Oncology,
[2] Neurosurgery, Institute of Biomedical Sciences, Tokushima University Graduate School, Tokushima, Japan;
[3]Department of Radiology, Luxmed hospital, Luxmed Health Center, Ulaanbaatar, Mongolia

Abstract

Purpose: We evaluated the utility of arterial spin labeling (ASL) imaging of tumor blood flow (TBF) for grading nonenhancing astrocytic tumors.

Materials and methods:

Thirteen non enhancing astrocytomas were divided into high-grade (n=7) and low-grade (n=6) groups. Both ASL and conventional sequences were acquired using the same magnetic resonance machine. Intratumoral absolute maximum TBF (TBF_{max}), absolute mean TBF (TBF_{mean}), and corresponding values normalized to cerebral blood flow (TBF_{max} and TBF_{mean} ratios) were measured. The Mann-Whitney U test and receiver operating characteristic (ROC) curve analysis were used to assess the accuracy of TBF variables for tumor grading.

Results:

Compared with low-grade astrocytoma, high-grade astrocytoma exhibited significantly greater absolute TBF_{max} (90.93 ± 24.96vs 46.94 ± 20.97 ml/100 g/min, $p < 0.001$), TBF_{mean}(58.75 ± 19.89 vs 31.16 ± 17.63 ml/100 g/min, $p < 0.001$), TBF_{max} ratio (3.34 ± 1.22 vs 1.35 ± 0.5, $p < 0.001$), and TBF_{mean} ratio (2.15 ± 0.94 vs 0.88 ± 0.41, $p < 0.001$).TheTBF_{max} ratio yielded the highest diagnostic accuracy (sensitivity 100%, specificity 86.3%), while absolute TBF_{mean}yieldedthe lowest accuracy (sensitivity 85.7%, specificity 70.1%) by ROC analysis.

Conclusion:

Parameters from ASL perfusion imaging, particularly TBF_{max} ratio, may be useful for distinguishing high-grade from low-grade astrocytoma in cases with equivocal conventional MRI findings.

MRI FINDINGS IN PEOPLE WITH EPILEPSY

Nasanbayar .E MD, Mungunbagana.E MD, PhD
Nergui.O MD, Prof. Gonchigsuren.D MD, PhD
Department of Radiology, Grand Med Hospital

In many patients with epilepsy antiepileptic drug treatment is unable to control the seizures. Using a dedicated MRI-protocol, it is possible to detect an epileptogenic lesion in 80 percent of these patients. Resection of these lesions can lead to seizure freedom in many patients. We will discuss the MRI protocol and the typical findings in the most common epilepsy-associated diseases.

Common causes of Epilepsy

The illustration summarizes the most common causes of seizures in patients with medically uncontrollable epilepsy. Some of these lesions are readily identifiable. Meso temporal sclerosis and focal cortical dysplasia are the most common causes and can only be depicted with a dedicated protocol. Mesial temporal sclerosis is the most common cause of intractable epilepsy. In medication refractory epilepsia the most common location of the epilectogenic lesion is *temporal lobe* (60%), frontal lobe (20%) and parietal lobe (10%), periventricular (5%) and occipital (5%).

MRI epilepsy protocol

The table shows a dedicated epilepsy protocol. Some will also use Inversion Recovery and not use contrast on a routine base.

T1WI

Superior for cortical thickness and the interface between grey and white matter. On T1WI look for grey matter occuring in an aberrant location as in gray matter heterotopia.

MPR and FLAIR

Look very carefully for cortical and subcortical hyperintensities on the FLAIR, which can be very subtle.

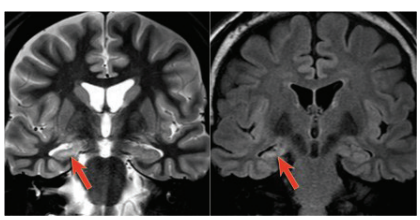
Since FLAIR may show false-positive results due to artefacts, the abnormalities should be confirmed on T2WI.

T2 or SWI*

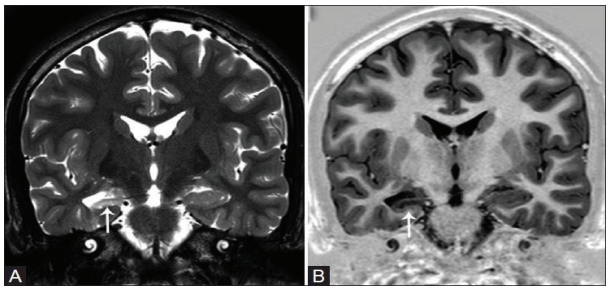
Helpful when searching for haemoglobin breakdown products as in posttraumatic changes and cavernomas, or to look for calcifications in tuberous sclerosis, Sturge-Weber, cavernomas and gangliogliomas.

Mesial temporal sclerosis (MTS)

Mesial temporal sclerosis (MTS) is a specific pattern of hippocampal neuronal loss accompanied by gliosis and atrophy. The etiology is unknown, but there is a relationship between MTS and prolonged febrile seizures earlier in life, complicated delivery and developmental processes. In 15% of patients another developmetal abnormality can be found, mostly focal cortical dysplasia. MTS is the most common cause of partial complex epilepsy in adults and is also the most common etiology in young adult patients undergoing surgery. Surgical removal of visible MRI changes associated with unilateral mesial temporal sclerosis leads to seizure freedom in up to 80% of cases.



Coronal T2W and FLAIR images are the most sensitive for detecting MTS.

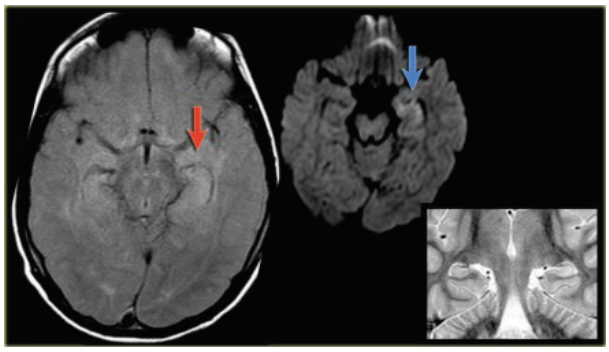


The coronal T2WI and MPR images show right-sided mesial temporal sclerosis. Notice the volume loss, which indicates atrophy and causes secondary enlargement of the temporal horn of the lateral ventricle. The high signal in the hippocamous reflects gliosis.

Differential of hippocampal hyperintensity

Hippocampal hyperintensity on T2WI or FLAIR images *with*volume loss is diagnostic for mesial temporal sclerosis in the appropriate clinical setting.

Hippocampal hyperintensity *without* volume loss is seen in:

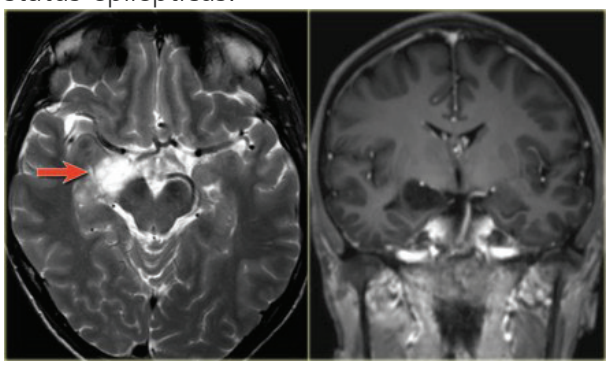


Status epilepticus

The imaging findings in status epilepticus can mimickmesotemporal sclerosis. In status epilepticus a hyperintense hippocampus can be seen, but there is swelling and no atrophy.

Axial FLAIR, axial DWI and coronal T2WI demonstrate a hyperintense hippocampus with a slightly compressed temporal horn of the lateral ventricle consistent with hippocampal edema.

DWI shows diffusion restriction due to cytotoxic edema in the acute stage of the status epilepticus.



DNET mimicking mesial temporal sclerosis

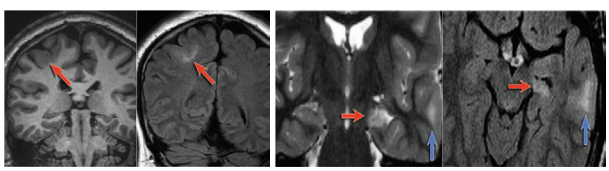
Axial T2WI shows hyperintense, but enlarged hippocampus with a bubbly appearance. This is typical for a DNET or dysembryoplasticneuroepithelial tumor, which we will discuss in a moment. The coronal contrast-enhanced T1WI shows an enlarged hippocampus without uptake of contrast medium.

Focal Cortical Displasia

Subcortical white matter hyperintensities

Blurred grey-white matter interface

Focal cortical dysplasia is a congenital abnormality where the neurons fail to migrate in the proper formation in utero.MRI findings may be very subtle or may even be negative, therefore a high index of suspicion is mandatory! The most common findings are cortical or subcortical hyperintensities especially seen on FLAIR-images. These are often found at the bottom of a deep sulcus. Another finding is a *blurred interface* between grey and white matter, because the white matter looks a little bit like gray matter because it contains neurons that did not reach the cortex.

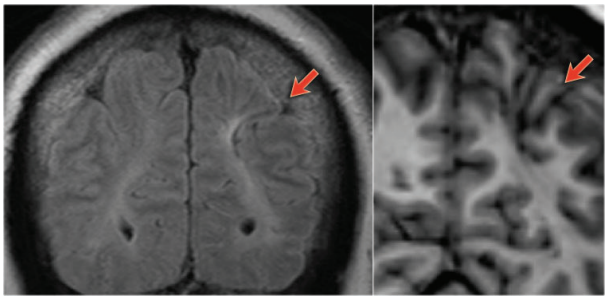


The images show typical focal cortical dysplasia. There is cortical thickening and blurring of the

grey/white matter junction on T1WI (left). The FLAIR image on the right shows the subcortical hyperintensity.

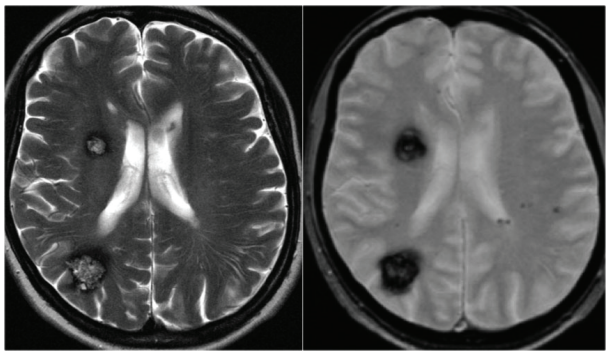
Cortical and glial scars

Cortical and glial scars usually result from meningitis or birth injury.Ulegyria is a specific type of scar. It is defined as cerebral cortex scarring due to perinatal ischemia.Ulegyria typically affects full term infants. In these infants there is greater perfusion to the apex of the gyri than to the cortex at the depth of the sulci.The resulting pattern is that of a shrunken cortex in which the deep portions of the gyri are more shrunken than the superficial portions, leaving pedunculatedgyri on long stalks with a mushroom appearance.Ulegyria must be differentiated from microgyria.



Cavernoma

Cavernoma is also known as cavernous malformation or cavernous angioma. It is a benign low flow vascular malformation with a tendency to bleed. 75 percent occur as solitary sporadic lesions and 10-30 percent occur as multiple lesions. Cavernomas consist of locules of variable size that contain blood products in different stages of evolution which produces a popcorn appearance. A complete hemosiderin rim surrounds the lesion, but not when there is a recent bleeding. T2WI and T2* gradient echo show multiple cavernomas. Notice the popcorn appearance with peripheral rim of hemosiderin on the T2WI.



Epilepsy–associated tumors

All brain tumors may present with epilepsy, but there are some typically epilepsy associated tumors.

- Ganglioma
- DNET
- Pleomorphic xanthoastrocytoma
- Hypothalamic hamartoma

These tumours share the following characteristics:

They arise in a cortical location.

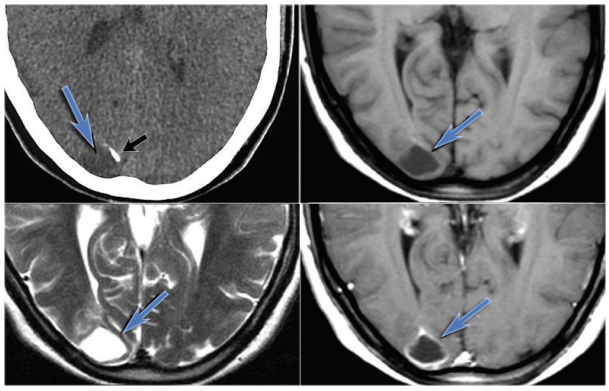
Often located in the temporal lobe.

Closely related to developmental malformations.

Typically seen in adolescents and young adults.

Characterized by a benign behaviour, a slow growth, a sharp delineation and usually show absence of edema.

Show signs of chronicity, such as bone remodeling and scalloping of the adjacent skull.



A CASE REPORT OF MOYAMOYA DISEASE

Erdenechuluun S MD[1], Munkhbaatar D MD.,PhD[2]
[1]Songinokhairkhan District Hospital, [2]Department of Radiology, MNUMS

- P 25 years old, female
- Family: Husband and one child
- Education: Bachelor
- Profession: Teacher
- The disease started: 2018.05.03
- The case history started: 2018.05.14

Physical examination; The general condition of the body is very severe

- Glasgow coma scale 9-10
- Face pale, environment and activity weak
- Blood pressure 130/70mm Hg
- Heart rato 76min
- SPO2-96%
- Resp.rato normal

Symptom; Headache, nausea, don't like eat, sleeping

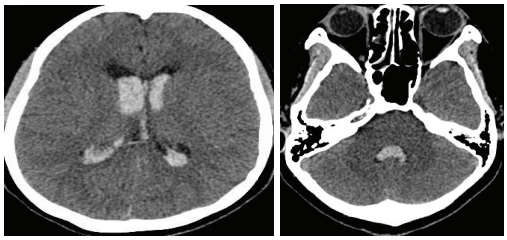
- The current illness history: Have a headache since 9th grade. Had an epilepsy in 9th grade. That time she had treatment for day in home. He didn't know name of medicine which he had a that time. Headache is becoming more frequent. In 2018.05.03from 3 to 4 am she vomited many times. It's color was a yellow or green.

Neurological examination; Pupil are same in both side

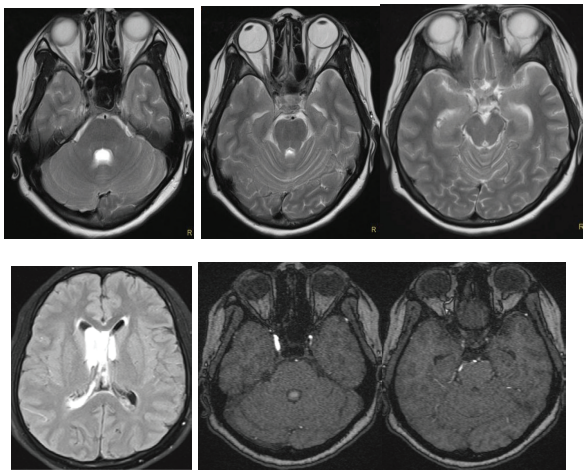
- Pupil reflex normal
- Corneal reflection low
- Tendernes trigeminal nerve
- Upper and lower limps muscle tonus normal
- Upper and lower limps tendon reflection low
- Kernig sign +
- Brudzinski sign +
- Sensory balance scope can't be checked

Diagnostic Radiology, Doppler Scan Brain basilar artery blood flow 115sm/sec higher and vortex

- Left middle cerebral artery and both anterior cerebral artery collateral blood flow
- Internal carotid artery siphon narrowing

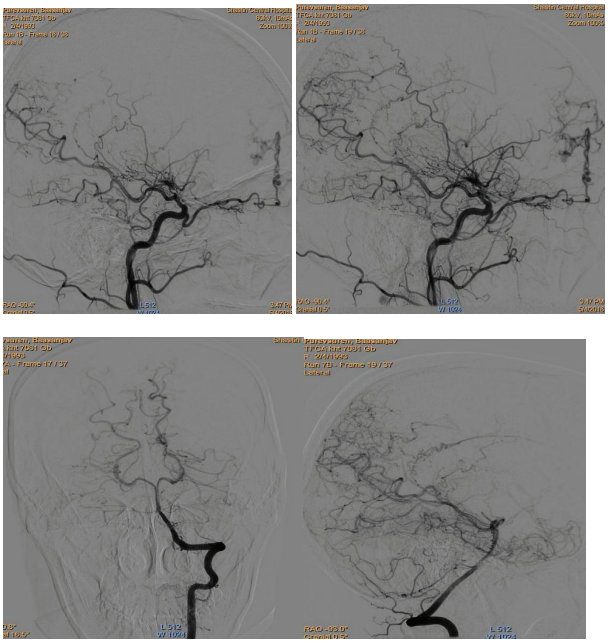


- The blood vessels of the cornea were bleeding into the lateral ventricle III and IV.
- Normal middle compound



Axial T2/FLAIR;ventricles higher intensity subacute hemorrhage,

Axial T2 WI;internal carotid artery siphon and supraclinoid, anterior cerebral artery, middle cerbral artery narrowing, FLAIR; the grafting of the galactic pulses has been shown to increase the signaling intensity of the brain folds, indicating increased burden of intracellular collateral vessels



DSA; right on the right side of the ophthalmic artery is formed by the straps of the forehead and provides blood for the right part of the forehead, posterior cerebral artery blood supply occipital, left side external carotid artery of the frontal Dura matter of the blood supply frontal section, obstruction small deep vessels to open out *"puff of smoke"* has been identified.

Diagnosis;

Brain parenchymal hemorrhage, corneal body hematoma, Moyamoya disease

A FORMULA OF QUANTUM PSYCHOLOGY

Academician B.Jadamba (MNUE)
D. Erdenechuluun, MNUE, Quantum Psychology sector
S.Oyungerel, MNUE, Quantum Psychology sector
D.Delgermaa MNUE, Quantum Psychology sector
Ts.Bayarmaa, MNUE, Quantum Psychology sector

Key words: one, one act, act one, perform action, energy and physical body, true mental state, human **Purpose**: Developing a version of quantum psychology using the method from perspective of bilig wisdom changing the viewpoint of the present-day classical psychology in which arga mind-dominated way of thinking.

Theory and background of methodology: Theoretical and methodological basis for this work is that the researcher could specify, clearing up the couple beginning in the frame of gene, being and consciousness using trilogy, triple theory and the concept of "one" in the context of the shamanic philosophy of the Mongols, including the perfect harmony between human and environment.

Result: The constant variable space-the time "t", in which the measured probability will be observed by certain person, who performs the action.

$$\text{[illegible]} = \sum_k \text{[illegible]} \sum_j \text{[illegible]} \sum_n \text{[illegible]} \sum_m \text{[illegible]} \langle \text{[illegible]} \rangle \langle \text{[illegible]} \rangle \langle \text{[illegible]} \rangle$$

There is p_m^{t-1} - certain performer "t-1" action "m" observation of the action result and the following order classical probability p_k^t - certain performer "t-1" result of action "t" reflection of action "k" next followed classical probability , - certain performer "t+1" derived action "n" number of action "t" time "j" planning classical probability of action number p_j^t - тухайн үйлдэгч "t" time "j" number of classical probability of followed action $\langle \text{ÇÇ}_m^{t-1} | Y_k^t \rangle = \langle \text{ÇYÉÈ}_m^{t-1} | \text{YÉÈ}_k^t \rangle$ - "t-1" time "m" number of repeated action "t" time "k" the probability amplitude transformed into number of action, $\langle \text{Ç}_k^t | Y_n^{t+1} \rangle = \langle \text{ÇYÉÈ}_k^t | \text{YÉÈ}_n^{t+1} \rangle$ - "t" time "k" number of thing "t+1" time "n" the probability amplitude transformed into number of action, $\langle \text{Ç}_n^{t+1} | Y_j^t \rangle = \langle \text{ÇYÉÈ}_n^{t+1} | \text{YÉÈ}_j^t \rangle$ - "t" time "j" number of action "t+1" the probability amplitude transformed into number of action, $\langle \text{Ç}_j^t | Y_m^{t-1} \rangle = \langle \text{ÇYÉÈ}_j^t | \text{YÉÈ}_m^{t-1} \rangle$ - "t-1"time "m" number of action "t" time "j" the probability amplitude transformed into thing's number .

Conclusion: The following conclusions are made on the basis of quantum psychology one formula:

- Quantum psychology is a science studying the state of human behavior matching the action and performer .
- The individualizing of the ACTION and PERFORMER is similar to the current Western quantum psychologist's study that is the behavioral function of mental □ is put parallel to p- statistical operator.

STUDY ON SOME PSYCHOLOGICAL FEATURES OF CHILDREN WITH INTERNET GAMING DISORDER

Munkhzaya B[1], Sugarmaa M[2], Tsogzolmaa D[3]
[1]National Center for Mental Health. Mongolia, munkhzayaborbandi@gmail.com, 99741063
[2]School of Public Health, Mongolian National University of Medical Sciences
sugarmaa@mnums.edu.mn, 99248787
[3]School of Business Administration and Humanities, Mongolian University of Science and Technology, Tsogzolmaa@must.edu.mn,99080977

Keywords: Internet gaming disorder, attitude, character

Introduction: While internet gaming disorder has not long history, it is been spread rapidly and has many negative effects on psychological well being of the child. For the last 5 years, totally 265 children were admitted to the child and adolescents department of Mongolian National Center for Mental Health due to excessive internet gaming problems. A number of studies was conducted in our country which aimed to define psycho-social risk factors of internet gaming disorder (age, gender, family education, alcohol and tobacco use of parents, self-judgment, risky behavior, neurotism, ability to control emotions) and prevalence of internet gaming disorders. However, various research methods and terminology of internet gaming disorder is still in use. Based on the above mentioned issues, there is a need to develop universal method to measure and screen internet gaming disorder and its characteristics, risk factors and consequences. Therefore we used diagnostic criteria of Diagnostic and Statistical Manual of Mental Disorders (DSM-5) to assess internet gaming disorder.

Purpose: To define risk factors and psychological features of children with internet gaming disorder.

Methods: Data collection was done among 80 children aged between 12 and 16 years, who were admitted to the child and adolescents department of at National Center for Mental Health, due to internet excessive playing problems from June, 2015 to December, 2016. We used diagnostic criteria of Diagnostic and Statistical Manual of Mental Disorders (DSM-5) to assess internet gaming disorder. Self-attitude and attitude toward parents were defined by Incomplete Sentence Test (L.Saks, V.Levy 1950). Personality characteristics of children was determined by High School Personality Questionnaire (HSPQ), a version for adolescents developed by R.Cattell (1949).

Results: All participants were male. Regarding to residence, 92.5% of them was admitted from Ulaanbaatar and 7.5% of them were from rural areas. In regard to family status, 68.8% of them live with their parents, 31.2% of them live with stepfather, single parent or with their grandparents. According to the criteria of Diagnostic and Statistical Manual of Mental Disorders (DSM-V), 58.8% of all participants were assessed with internet gaming disorder. According to type of internet games, 55.3% of them played Dota and 31.9% of them played both Dota and Counter strike. 63.8% of them played every day. 78.7% of the participants reported about their motivation of playing as interesting, nice and favorite. Children with internet gaming disorder usually spend approximately 4.75 hours and 4793 tugrugs at once. Children diagnosed with

internet gaming disorder were psychologically different from children without internet gaming disorder. For instance, children with internet gaming disorder were more likely to be less self-confident, low self-esteem, dependent from others. They also tend to be imitated, irresponsible and do not like full requirements and norms. Additionally, children with internet gaming disorder feel lonely and have low self-criticism, psychological burden and emotional labiality, low concentration and self-control, anxious and tend to be self-blamed.

Conclusions: According to the diagnostic criteria, 58.8% of all participants were assessed with internet gaming disorder. The risk factors of internet gaming disorder were identified gender, frequency and type of games, time and money spent for playing. The our findings confirm that psychological features such as relationship and attutude, emotion and self-managing skill were changed among children with internet gaming disorder.

COACHING THE WILLPOWER

BAASANNYAM Dorjpalam
University of Social and Psychology
Baasannyamd@gmail.com Phone: 99921383

Key words: Purpose, goal, willpower, mental education, quantum psychology

Introduction: With the current priority to train highly skilled and educated Mongolian citizens capable of competing in our national education system, its demands, and along with the global development trends, it is essential to train the youth for endurance and perseverance, and strengthen their willpower.
Purpose: Publicize the use of quantum psychology

Methods:
Collect information and data
Mathematical Statistical Methods
Interview methods

Results: Today, certain people understand what it means, that "the willpower is self-control of his or her own emotions, senses, and focus, thus affecting their personal health, financial status, personal relationships and professional success". Most of us are aware of our thoughts and purposes in our daily life to make our life better than the day before, but we often find ourselves getting off the track, losing control and led by emotions. The main reason for this is lack of willpower and not being able to accomplish our dreams and goals. It is seen broadly in the training practices; often by dropping out of school or being addicted to bad habits. Based on these realistic causes, we have done an experiment on student groups and they have been learning the ability to express themselves at a stable rate. The results of the study to observe at programs to support the personal development, psychological counseling and quantum psychology practice will be able to use.

Conclusion: Having a clear understanding of coaching the willpower, there will be a decreased social stress and the youth will be able to work with enthusiasm and achieve their set goals.

ADHERENCE TO MEDICATION REGIMEN IN PATIENTS WITH EPILEPSY FOLLOW-UP CARE AT NCMH

Orkhonselenge. Ts[1], Khishigsuren. Z[2]
[1] National center for mental health
[2]MNUMS, SOM, Mental health department

Introduction: According to study of WHO (2018), about 50 billion epileptic patients have in worldwide, but annual rate of epilepsy was 2.7 per 100.000 for male and 2.2 for female in Mongolia.

Purpose: To detect adherence of medication regimen of epileptic patients and some influencing factors of its.

Methods: The survey was conducted by descriptive cross-sectional design and totally 170 epileptic patients by target sampling method.

Results: 41.2% of participants are reported have seizures in every day, and total participants were using anticonvulsive medications by 4-43 years (17.8 ± 10.2) and 99.4% of them had a single drug, but 51.2% (n = 87) are answered, that they forgot about their pills.

By ***Morisky Medication Adherence*** *Scale*, 2.9% of respondents are well-versed in the drug regime, 97.1% don't have enough medicines, and 51.2% don't care about pills as their forgetfulness. By Montreal Scale-2, the cognitive impairment of patients negatively affected to the patient's self-care skill and so 37.6% are assessed as normal, 30.6% are decreased and 31.8% are being as dependent from others, by Lavton's test.

Conclusions: 32.4-64.7% of epileptic patients are not adherence medication regimen with statistically significant (p=0.03). The frequency of seizures, cognitive impairment and self-care impairment are affected negatively to adherence medication regimen. Cognitive impairment was decreasing to self-care skills for 4.5 times and the moderate correlation have between them (r=494, p=0.001).

Keywords: Seizure, medication regimen, cognition

ADOLESCENTS ATTITUDE TOWARD ONLINE COUNSELING

B. Altantsetseg1 /MSc/ M. Anir2 /BA/
altantsetsegbadrakh@gmail.com
976-89124003

Introduction: Regarding the improvement of psychological education of adolescents there is an increased need of attending counseling among them. Unfortunately, adolescents who live in suburb areas of the city as well as in countryside have very limited opportunity to see counselor in person due to the lack of human resources. This statement was supported by the fact that according to the data base of National Psychology Center (NGO), 97% of total adolescent-aged clients of 2017 were from central districts of Ulaanbaatar. Countries, such as Australia, have experiences of using online counseling for people in remote area.

Purpose: This study explored Mongolian adolescents' need of attending psychological counseling as well as their attitude toward using online counseling.

Methods: Participants included 100 high school students aged from 13 to 18, half of them was from central district high-school and another half was from suburban district high school. Anonymous questionnaires were distributed to the participants and the collected data were computed using SPSS.22 program.

Results: The results indicated that overall participants had statistically significant need to attend psychological counseling as they perceived. Moreover, adolescents from suburban area had more positive attitude toward using online counseling compare to the students from urban area.

Conclusion: Based on those results, it can be concluded that adolescents especially those from suburban area would likely to use the online counseling platform if it's available.

Key words: online counseling, adolescents, attitude toward counseling, Ulaanbaatar, Mongolia

THE SURVEY RESULT OF STUDENT'S DISPOSITIONS TOWARDS SPECIFIC PROFESSIONS

E.Oktyabrijargal (Ph.D)
(Mongolian National University of Education)
oktyabri@msue.edu.mn

Key words: Dispositions, attitude; professional, personal

Introduction: Teacher's self- perception is essential in studying teacher dispositions. (Freeman, 2007; Taylor, 2009). Based on a methodology "Studying self-perception of teacher dispositions", present study involved 500 first to fourth year students studying at MNUE in the spring semester of 2018. 1. Before you entered the university, what was your perception about teacher's professional, personal and ethical characteristics? 2. While you are/were a student, how is/did your perception about teachers' professional, personal and ethical characteristics changing/ change? 3. To what extent is it important to maintain teachers' professional, personal and ethical characteristics? We developed questionnaire comprising 40 questions to assess students' self-perception of teacher dispositions and used it in our study. The findings prove that students' self-perception changes year-to-year and there is an increase in the number of students who believe that their teacher attitude is improving during enrollment in the university.

Purpose: This study investigated the opinions and perceptions of student's concerning the definition, importance, and implementation of teacher dispositions in teacher education programs.

Methods: Studying self-perception of teacher dispositions

Results: To answer these questions 40 dispositions were selected by reviewing the relevant literature. The first factor that emerged was the professional factor. The professional factor consisted of 17 items. The personal factor consisted of 8 items. The third factor extracted from this analysis was the moral factor that consisted of 7 items.

Conclusion: Specifically, the study identified the perceptions of teacher educators about the extent to which desirable dispositions are before you entered the university, while you are/were a student or after you graduated the university. In addition, the study explored student's perceptions concerning the importance of each disposition for being a teacher.

BRAIN TUMOR/CANCER IN MONGOLIA (2000-2015)

Batbold.B[1], Khishigbat.N[2], Nandin.G[3], Baasanjav.N[4], Damdindorj.B[5]
[1]-'Bayangol' Health center
[2]-MNUMS
[3]-MNUMS, Department of Anatomy
[4]-"Ach" medical university
[5]-MNUMS, Department of Physiology

According to the World Health Organization reports 10 million people die from cancer each year and 84 million cancer deaths are estimated in next decade: 70% of these deaths occur in poor countries.1

In 2017, there were diagnosed 6073 cancer cases newly: 3875 (63.8%) in provinces and 2204 (36.3%) in Ulaanbaatar. Regarding to the gender, 3078 (50.7%) and 2995 (49.3%) cases were happened to men and women, respectively.

Among the nervous deseases, the central nervous system cancers stand for the second reason of death. Although the number of these cancer cases is counted less than the other system cancers, it has the high level of the mortality.

The brain is protected by the skull. Thus, in the early stages, the brain tumor/cancer should be detected using the special, highly sensorable ways such as computer tomography scan (CT) or magnetic resonance imaging (MRI).

We see a reasonable need to conduct the epideomological study on the brain cancer cases, disabilty and mortality in complex.

Materials and Methods:

Materials and Methods: The brain cancer morbidity and mortality study data were provided from the State Central Third hospital (21 provinces, 9 districts) and two specialized hospitals of Mongolia. This study covered 729 nationwide brain cancer occasions and deaths (ICD-10) that were registered from 2000 to 2015. We conducted the complex study on the clinical periods, patients' disability and mortality using the retrospective and prospective methods on the first 729 cases during the mentioned period.

Results: From 2000 to 2015 there were registered 729 people with brain cancer, aged between 0-70: in 2015 – 16.19% (n=118) and in 2013 – 2.19% (n=16). The mean age of the participants was 41.91±0.66 (0-84 years), the average bed occupancy – 9.63±0.21 (2-57 days). We track the age group of the cases in number and percentage: 0-19 age 102 (14%), 20-29 age 80 (11%), 30-39 age 122 (16.7%), 40-49 age 142 (19.5%), 50-59 age 155 (21.3%), 60-69 age 93 (12.8%), above 70s – 35 (4.8%); since 2000, regarding to the gender – 40.7% (n=297) and 59.3% (n=432) in male and female, respectively. We determined the ratio of the gender and ages (2015). There was no significant difference for male participants. However, the brain tumor/cancer cases have rising tendency along with the age for female.

Conclusion:

The brain tumor/cancer has lower occurrence for cases aged 20-29 and above 70s. The morbidity and mortality rate was increased gradually till 2015. Consequently we need to conduct profound study in order to implement the brain tumor/cancer detection project or program in its early stages.

THE RISE OF ARTIFICIAL INTELLIGENCE

Speaker: Dr. Otgonbayar Uuye
Organization: The Institute of Mathematics, National University of Mongolia, Ulaanbaatar, Mongolia

Abstract: Whether you notice or not, artificial intelligence is all around us, changing society one learning algorithm at a time. From the search engines of Google and the targeted ads of Facebook to the recommendation systems of Netflix to self-driving cars of Waymo and autonomous robots of Boston Dynamics, many of the recent technological advances disrupting business and society are powered by self-learning "intelligent" computers. Traditionally, the only way to get a computer to do something was to write down an algorithm explaining how, in painstaking detail. But machine learning algorithms, such as artificial neural networks inspired by the human brain, are different: they figure it out on their own, by making inferences from data. And the more data they have, the better they get.

In this talk, we will discuss how artificial intelligence is remaking science, technology, business, politics, and war. We will explore the search for artificial general intelligence: the challenges, approaches and the advances.

QUANTUM MODEL OF PERSONALTRANSFORMATION

D. Delgermaa,
Mongolian National University of Education, Quantum Psychology sector
degi0228@gmail.com

Key words: quantum model, personality, individual, quantum object, TsI energy

Introduction: The work of M.Ya. Palchik (2014) explained his ideas about quantum nature of mind on the concept of quantum energy without any philosophical and theoretical definitions.

Purpose: To analyze the quantum model of explaining personal development

Method: Make theoretical analysis on the quantum concept of personal transformation

Result: The high speed of evolution is a widespread realized perception derived from the necessity in relation to human living development observed at any time (various forms of behavior) and the drastic changes in technology. In simple terms, these two conceptsare concerned that the speed of the evolution processdepends on the two dimensions of the average life cycle of human life and the average time of technological development.

Conclusion:

The quantum model of personal development helps to identify ourselves, expand our boundaries and opportunities, create the speed, power, and rhythm required to solve problems, so business and personal live are transformed as development and opportunities.

THE PERCEPTIONS OF QUANTUM CONSCIOUSNESS

D. Erdenechuluun,
Mongolian State University of Education, Quantum Psychology sector
Erdenechuluund@yahoo.com

Key words: quantum consciousness, reach steps to quantum consciousness, empty state, energy, weight, space, and time

Introduction: The modern direction of quantum psychology research puts the beginning of the theoretical study about the inner consciousness of the human being, and the nature of consciousness from the theory of quantum physics. What is the reality? Is the reality true? How to recognize the reality? These questions are still interesting to researchers and their attention remains on them.

It is necessary to emphasize the concept of quantum consciousness to answer these questions and overcome the stress of everyday life. . The concept of quantum consciousness is essential to understanding the relationship between consciousness and reality.

Purpose: Within the report we are aiming to reflect one of the key elements of quantum psychology studying and analyzing Stefan Volinsky's work about quantum consciousness.

Methods: Theoretical research methods as comparing, analyzing, and synthesizing can be used in the resources related to this study work.

Result: It is assumed that it can reach quantum consciousness through the use of psychological counseling in basic principles of physics which consider all things including human intelligence exists in energy, space, weight, time , nucleus and waveform.

Conclusion: Understanding of quantum consciousness and its research methodology helps us to reflect the nature of the unseen inside behavior that cannot be detected by the measurable science and it is a new study that will contribute to the development of modern psychiatric techniques.

«GENERAL HEALTH QUESTIONNAIRE GHQ-30» RESEARCH RESULT

Ariunjargal Lkhagva (PhD), MNUE, mubisariunjargal@msue.edu.mn
Tungalag Orosoo (PhD), MNUE, o.tungalag@msue.edu.mn

Key words: Goldberg, The General Health Questionnaire, GHQ-30, mental health, mental disorder.

Background: Researchers of many countries defined that the research of Goldberg.D.P, PhD "The General Health Questionnaire" (GHQ-60, GHQ-30, GHQ-28, GHQ-12) research is one of the easier methodologies, which detect human health status and it can be used not depending on many conditions such as personal characteristics.

As of today one of each 4 people of the world is affected by any psychopathy. Besides 5 of each 10 diseases, which lead to the disability are mental disorder. (Second National Program "Mental health") Psychic problems tend to increase among the population, so it shows that it needs to protect mental health and make diagnosis.

Purpose: Define mental health status of the people, who run the work and service by using the specific General Health Questionnaire (GHQ-30)

Methods: In this research GHO-30 option, which defines human mental health was translated with simple method and integrated the results of this questionnaire taken from the (particularly public service and other services) people, who run work and service in Ulaanbaatar city.

Results: Research results show that 60-84% of the research participants have high risks to be affected by the psychopathy symptoms such as stress, depression, anxiety and insomnia. Any representatives of the society involved in the research have mental problems such as permanent depression, failure to work and permanent stress due to their concerns in different fields of life: Answers with high indicator among total participants:

Teacher - Concerned in something and have unstable and stressed mentality-79%

Student- Concerned in something and have unstable and stressed mentality-84%

Self-employed- Cannot sleep well, because worry about something-60%

Workers of private organizations- Any issues seem to be difficult-75%

Public servant- Daily life is under the constant competition-74%

Conclusion:

The results of the research depend on the current socio-economic conditions and occupational characteristics. We consider that it is possible to diagnose mental health of Mongolian using GHQ-30 questionnaire.

IMMUNOHISTOCHEMICAL STUDY OF PRIMARY AND SECONDARY GLIOBLASTOMAS

Enkhee.O[1],Bolortuya.D[2], Tuul.B[1], Bayarmaa.E[1]
MNUMS, School of Bio-Medicine, Department of Pathology[1],
National Center for Pathology[2]

Background: Glioblastomas may develop *de novo* (primary glioblastomas, P-GBLs) or through progression from lower-grade astrocytomas (secondary glioblastomas, S-GBLs). The aim of this study was to identify immunohistochemical classification of glioblastomas and to study further survival analysis.

Materials and methods: We evaluated the immunohistochemical expression of epidermal growth factor receptor (EGFR), p53, and isocitrate dehydrogenase 1 (IDH-1) in 36 glioblastoma cases out of 135.

Results: Immunohistochemical expression of EGFR, p53, and IDH-1 was observed in 8 (22.2%), 24 (66.6%), and 1 (2.8%), respectively. Totally, secondary glioblastomas were 22 (61.2%) out of 36 and immunohistochemical profiles of IDH-1(-)/EGFR(-)/p53(+), and IDH-1 (+)/EGFR(-)/p53(+) were noted in 21 (58.5%), 1 (2.9%). Expression of IDH-1 and EGFR(-)/p53(+) was positively correlated with 40-49 age group. Primary glioblastomas were 14 (38.8%) and immunohistochemical profiles of IDH-1(-)/EGFR(-)/p53(-), and IDH-1(-)/EGFR(+)/p53(-), IDH-1(-)/EGFR(+)/p53(+) were noted in 7 (19.4%), 4 (11.1%), 3 (8.3%) respectively.

Conclusions: In our country, there were 61.2% secondary glioblastomas and IDH-1(-)/EGFR(-)/p53(+) combinations were dominant. We recommend a combination of EGFR and p53 for immunohistochemical classification of glioblastomas and the results to be useful for determining treatment strategies for glioblastoma patients.

SOCIAL CONTENT ORIENTATION FOR SUICIDE

Enkhtuvshin.R[1], Altanzul.N[1], Tsolmon.E[2], Bakhatberdi.B[2], Munkh-Uchral.D[3], Khishigsuren.Z[1]
[1]MNUMS, School of Medicine, Department of Mental Health
[2]MNUMS, School of Medicine
[2]MNUMS, School of Public Health
E-mail: enkhtuvshin.r@mnums.edu.mn, 88076198

Key word: Suicide, social content, motivation

Introduction: Today, one million people every year in the world also every 40 seconds one person to commit suicide. In our country suicide is the sixth of the line cause of death. Suicide become the main case of death in young people aged 15-34, which affects the most powerful motivation from the social media. So it really necessary to take research for social networking suicide.

Purpose: Study it out social content orientation for suicide

Method: An immense quantity of information on the topic of suicide is available on the Internet and via social media. Web search of suicide-associated terms "Suicide" to simulate the results of a typical search conducted by a person seeking information on suicide methods. We analyzed the first 3 pages listed for each search, for a total of 174 sites.

Result: Of 174 Web site hits, 9% (16) were prosuicide, 33.4% (57) antisuicide, 5% (10) were anti and prosuicide mixed, 45.9% (80) were the news about suicide and 5% (10) were not opening. From the all sites 18.3% were personal blog, 33.3% (57) were news sites, 38% (66) were online forum and 9% (16) were other contents. According the orientation of suicide comparing the of all 29 information sites 69% were only the information about the suicide (p=0.001). Rather of all 8 prosuicide sites 75% were personal blog (p=0.001). Also 24.1% (42) of all contends were motivated, 25.4% (44) were anxiety, 7% (12) were disagreed. Search the contends of the first page 48.2% (24) were contrive (p=0.000).

Conclusion:

1. 14% of all social contents were prosuicide (pro and mixed).
2. 75% of all prosuicide contends were personal blog (p=0.001).
3. 48.2% (28) of all contents from the firs page were contrive (p=0.000) and 6% (4) were disagreed.

QUANTUM PSYCHOLOGY AND THE EASTERN «ARGA BILIG» MODEL

S.Oyungerel,
Mongolian National University of Education, Head of Quantum Psychology sector
sgerelee@gmail.com

Key words: Principles of quantum mechanics, arga bilig and wisdom.

Intoduction: Since the development of Quantum Psychology in the 1980s, the study has been well known due to many researchers that have been interested in this field and more psychological research made theoretically and practically. Nowadays Quantum Psychology has increasingly been attracting the attention of researchers.

Purpose: Develop new methodology based on the science of "Arga bilig"

Methods: Conduct analysis and comparison of the theoretical works

Results: We are conducting a research in this field to develop new basics of research methodology, comparing the similarities and differences between classical psychology, quantum psychology, and eastern methods, the "arga bilig" wisdom. According to our theoretical research we understand that Mongolian approaches are a wonderful intellectual legacy, which contain the fundamental principles of quantum mechanics, complementary, and mutual dependence. It also begins with the development of methods of studying the sides of the "arga bilig" ie work on this method development of studying the human being behavior of the psychologically stable and evolving parties inspecting their actions, which is similar to some of the Russian psychologists' research work matching the ideals of quantum effects to personal diagnosis.

Conclusion: Our research work is based primarily on the concept of quantum effects, and demonstrates that it has scientific basis as well theoretically as methodologically.

VALUE-MOTIVATIONAL STRUCTURE INNOVATION PERSONALITY

AnkhbayarTegshjargal
Mongolian National University of Education
Tegshjargal@msue.edu.mn, 88003788

Keywords: value-motivational activity, creativity, innovation, innovative quality of personality.

Relevance of the study: The relevance of this study is due to the fact that the fundament of human focus is value-motivation basis, followed by personality.Innovation can be defined as integrative ability of the individual to understand, accept, and social assess, disseminate, implement and use innovations. The most complete innovation expressed in the business activity of the person, considered in the form of entrepreneurship.

Purpose: The purpose of the study was to identify characteristics in value-motivational structure of groups with different levels of manifestations of innovation. In our study involved 140 students of the Faculty of Economics of PFUR (Russia).

Methods: We used the following methods in the study: "Scale for self-evaluation of the innovative qualities of the personality" (Lebedeva, Tatarko); "Survey of motivational structure of personality" (Milman,E); Questionnaire real structure of value orientations of the personality (Bubnova)

Results of study: As a result of the innovative qualities of self-evaluation in the study sample identified groups with high, medium and low levels of innovation personality. The most of students had medium level of innovativeness.This is due to the fact that the innovation potential of a student's audience is not sufficiently developed. In group of respondents with a low level of innovation dominatesfun and relaxation, although they focus on high social status and managing people; respondents with an average level of innovation highlighted such value-motivational characteristics as comfort, communication, motivational structure was dominated by work motivation, as well as social motives the usefulness of common activity. In the group of respondents with a high level of innovation expressed motivation and creativity of the working high activity.

Conclusion: Value-motivational activity of young people is the basis of the progress of society and its well-being.

A CASE REPORT OF MULTIPLE SCLEROSIS

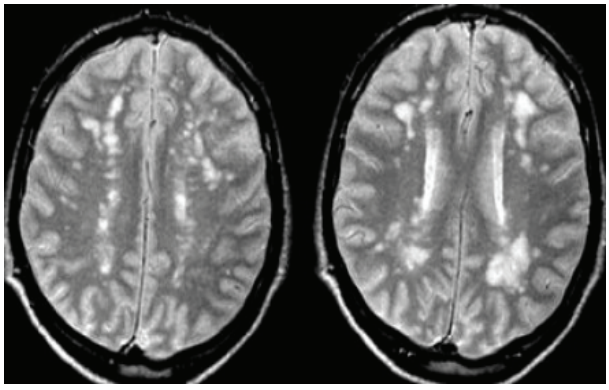
Solongo.Ts, MD, MSc, Munkhbaatar D, MD., PhD
University Training Hospital, MNUMS

Patient U, female was born in 1962 developed her first neurologic problem, right optic neuritis, in 2004 at age 42. At that time, she was treated with intravenous (IV) steroids and experienced a full recovery of eye function.

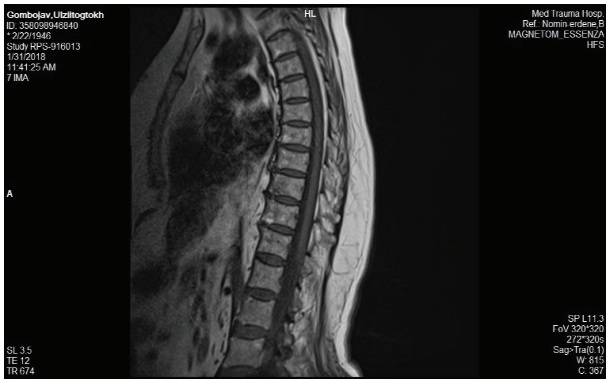
Her second neurologic episode, in 2017, involved the cervical spine, with impaired gait, diffuse numbness of all extremities, and urinary urgency. She again received IV steroid treatment and experienced a good recovery at University General Hospital, MNUMS. At this point, the patient fulfilled the Poser criteria for clinically definite MS.

Brain and cervical magnetic resonance imaging (MRI) was first performed in 2018 and showed multiple periventricular, infratentorial, and cervical cord plaques, consistent with the diagnosis of MS. Subsequently, she experienced occasional relapses, mainly spinal and brainstem attacks.

She was treated for her relapsing-remitting disease with intravenous (IV) steroids a breakthrough spinal attack with increasing disability and less satisfactory response to steroids, with incomplete recovery. Her disease then became more steadily progressive. When the patient was first referred to our hospital in September 2017, she presented with asymmetrical spastic paraparesis, generalized increased reflexes, bilateral Babinski and Hoffmann signs, bilateral optic atrophy, spastic and ataxic gait, and moderate arm, leg, and truncal dysmetria, all translating into an Expanded Disability Status Scale (EDSS) score of 6.5. Her disease continued to progress despite treatment, and she became wheelchair-bound in 2018 but with fairly good cognitive, hand, and brainstem functions.



Axial FLAIR, T2-weighted axial brain magnetic resonance images showing typical and sometimes confluent cerebral white matter lesions along with mild cerebral atrophy



FLAIR and T2-weighted sagittal spinal cord with multiple cord lesions.

EPIDEMIOLOGY OF COMMON PSYCHOSOMATIC DISORDERS: HOSPITAL-BASED DESCRIPTIVE STUDY

Anir Khurelbaatar1, Damdindorj Boldbaatar2, Battuvshin Lkhagvasuren3
1Department of Neurology, School of Medicine, Mongolian National University of Medical Sciences; 2Department of Physiology, School of Biomedicine, Mongolian National University of Medical Sciences; 3Science and Technology Center, Mongolian National University of Medical Sciences

Objective: To determine the nationwide prevalence of most common psychosomatic disorders including arterial hypertension, diabetes mellitus, anxiety, and depressive disorders in the health care settings. Methods: Data were retrospectively abstracted from the annual reports of 2009 and 2017. The epidemiology of the selected disorders registered in both inpatient and outpatient health care settings was determined and compared at the given dates. Results: The prevalence of arterial hypertension has been increased by 6 times during the time (in 2009: 180.1 and in 2017: 1122.3 per 10000 population, respectively; $P<0.001$). Whereas, the prevalence of diabetes mellitus by 20 times (in 2009: 25.13 and in 2017: 501.4 per 10000 population respectively; $P<0.001$), the prevalence of anxiety disorders by 30 times (in 2009: 0.88 and in 2017: 26.1 per 10000 population; $P<0.001$), and the prevalence of depressive disorders have been increased by 2 times during the given dates (in 2009: 1.47 and in 2017: 3.11 per 10000 population; $P<0.01$). Conclusion: These results suggest that the prevalence of both physical and psychiatric disorders which considered as the most common psychosomatic disorders have been dramatically increased in the past 8 years in the nationwide population.