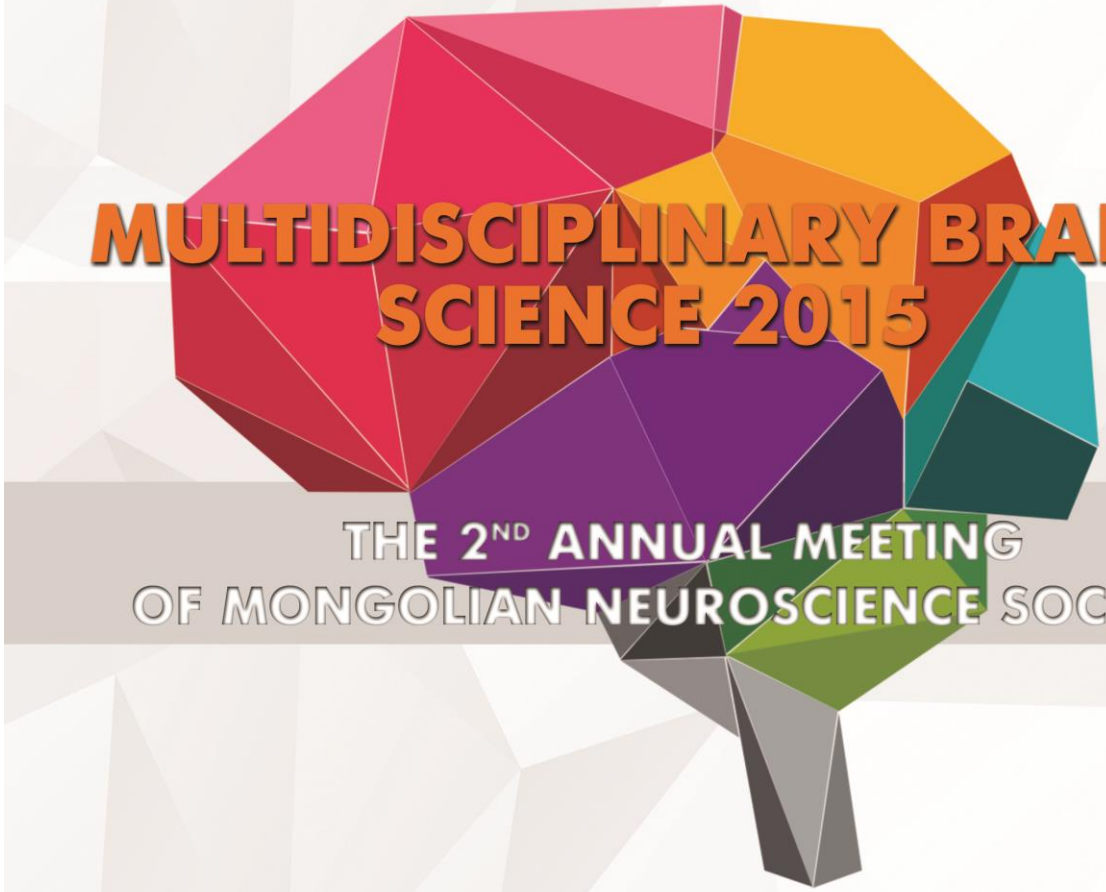
MNS MONGOLIAN NEUROSCIENCE SOCIETY



MULTIDISCIPLINARY BRAIN SCIENCE 2015

THE 2ND ANNUAL MEETING OF MONGOLIAN NEUROSCIENCE SOCIETY

NEUROSCIENCE | NEUROLOGY | NEUROSURGERY
NEUROIMAGING | PSYCHIATRY | SOCIAL PSYCHOLOGY

VENUE: CORPORATE HOTEL and CONVENTION CENTER - ULAANBAATAR - MONGOLIA - AUGUST 28-29 - 2015

INFORMATION http://neuroscience.mn

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Contents

1. Congratulatory Message 4
2. Congratulatory Message 5
3. PROGRAM AT A GLANCE 6
4. Functional division among prefrontal areas 11
5. Brain mechanisms of intuitive problem solving in board game experts 12
6. Glucose and hormones produce appetite and satiety through hypothalamic NPY/AgRP, nesfatin-1 and oxytocin neurons 15
7. The review of development of neurology service in Mongolia and prospects for the future 16
8. Тархины цусан хангамжын цочмог дутагдал болон цус хомсрох харвалтын үеийн мэс заслын эмчилгээний үр дүн 20
9. Chronic Alteration in Network Activity Induces a Circuit-specific Homeostatic Remodeling in Mature Hippocampus 25
10. Thalamocortical input onto layer 5 pyramidal neurons in primary somatosensory cortex 26
11. Brain Science, Mongolian's intelligence 26
12. Epidemiology of neurohereditary diseases in the population of some provinces (aimags) existence in south and central part of Mongolia 27
13. Some issues of cerebral infarction in Mongolian young adults 28
14. Clinical features of symptomatic epilepsy after brain injury. 29
15. Epilepsy genetic 30
16. Results of cognitive-behavioural therapy, risk factors and some clinical symptoms for somatization disorder 31
17. Time series analysis results on fatal suicide cases among Ulaanbaatar population in 1992-2014 years 32
18. Clinical issue of bipolar disorder 33
19. Stigmatization and discrinimation towards mental patients 34
20. Psychological factors on employee productivity in Mongolia 35
21. Psychological issues facing high school students: analysis on comparison study and intervention program 36
22. The study of the attachment style of adolescent children with at-risk behavior to their parents 36
23. Introduction to Psychosomatic Medicine 37
24. Coro-Heart Medicine – a new psychological intervention 38
25. Development of Neuroimaging in Mongolia 38
26. Neuroimaging of the brain tumor 40

27. Paraventricular NUCB2/nesfatin-1 is directly targeted by leptin and mediates its anorexigenic effect....44
28. Outcome and results of Dowling's surgery for removal of helminthic brain cyst....45
29. Defect of proteoglycan synthesis embodies a cause of the marfan syndrom....46
30. Correlation between s100 protein-immunopositive cells and survival time in traumatic brain injury....47
31. Research results on social workers' job satisfaction....48
32. Social worker's job stress in Ulaanbaatar....48
33. Epilepsy in Women....49
34. Current state of mental health service in Mongolia....50
35. Drug treatment regimen of epileptic patient with status by morisky test result....51
36. Diabetic peripheral neuropathy was diagnosed by pgp 9.5 antibody....52
37. Уураг тархины тэгш бус хэмд суурилсан сургалтын аргын нэгэн хувилбар: 4 алхамт загвар ба туршилтын үр дүн....54
38. Help seeking attitudes of freshman, who have mental health problems towards non-professional aid....60
39. Stigmatization and discrinimation towards mental patients....61
40. Results of cognitive-behavioural therapy, risk factors and some clinical symptoms for somatization disorder....62
41. Neuroprotective activity of hydroponic teucrium polium following bilateral ovariectomy....63
42. Identification of 8q21.13 genomic loci associated with body height in Mongolians....64
43. Sleep apnea and primary snoring contributes to development of obesity – a case-control study....65
44. Social attitudes towards people with intellectual disability....66
45. Results of study on examining the factors contributing to sleep disturbance and determining serum melatonin levels....67
46. Electroclinical Study of Posttraumatic Epilepsy in Ulaanbaatar....69
47. Prevalence of structural abnormalities in mongolian patients with epilepsy as detected by 1.5t MRI....69
48. ТАЛАРХАЛ....81

Congratulatory Message

Ladies and Gentlemen,
Dear researchers and Distinguished Professors, and Special guests

Neuroscience is the study of brain and nervous system, which is one of the latest great frontiers of knowledge. Research on Neuroscience spans from molecules, through signals and pathways, all the way up to complex human behaviours such as everyday human body activities and ways of how brain generates our thoughts, memories and emotions.

Scientists worldwide have worked for many years to unravel the complex workings of the brain. Their astonishing scientific and technical progresses in all fields of brain research have greatly improved our understanding of brain function. However, as with any scientific endeavour, more knowledge has produced new mysteries and most of the processes responsible for the integrated functioning of billions of brain cells remain to be a mystery. It is therefore our greatest wish to combine efforts of our Mongolian scientists and researchers to contribute to the existing knowledge-base and further demystify certain aspects of Neuroscience, particularly in the fields of cellular, molecular and developmental Neuroscience.

Furthermore, in the past few decades the scientific study of the brain and nervous system has increased significantly primarily due to the advances in modern technology as well as the progresses achieved in other related fields such as computational neuroscience, electrophysiology and molecular biology. Neuroscience continues to absorb technological advances from other fields of science that are by no means limited to the traditional areas of biology.

Although Neuroscience is a relatively young branch of scientific study worldwide Mongolian scientists and professors of Neuroscience and Brain Research have been working tirelessly and wholeheartedly for contribution and progress on understanding of brain function. As such, Ministry of Education and Science of Mongolia fully supports all Mongolian scientists and researchers in their successful endeavour in the field of Neuroscience.

Hence, I, Minister for Education and Science of Mongolia, would like to congratulate and wish the very best of success to the team members and fellow participating professors, researchers and students alike for organising "Multidisciplinary Brain Science-2015" conference in Mongolia and may your future research in this field be prosperous and make a great progress.

I look forward to the success of this event.

L. GANTUMUR
Minister for Education, Culture and Science of Mongolia

Congratulatory Message

Ladies and Gentlemen…

On behalf of all the members of Mongolian Neuroscience Society, I would like to give great thanks to honored professors and all the participants in the Multidisciplinary Brain Science 2015 international scientific meeting. Especially, we appreciate to organize the brain science conference in Mongolia. I am sure that this event will provide an exciting opportunity for exchanging our newly scientific data and establishing more close friendship with all the members who joined as meeting.

As we know, we are faced in the stages of life sciences. Particularly, the neuroscience is rapidly advancing to be a leading core of the sciences in this century. Furthermore, the contribution from the Asian-Pacific region for the development of brain science research field will become increasingly important and prominent. In addition, we are glad to share the good news that The Mongolian Neuroscience Society could be as an official member of International Brain Research Organization in 2015.

I really hope that this initiative would set the stage for the conferences that will result in long-lasting cooperative relationship and more fruitful collaboration. We strongly support the development and dissemination of our knowledge in life science and other related science fields.

Finally, I sincerely hope we will enjoy a beneficial meeting in here, Mongolia, not only the excellence of science but also the historical and beautiful country of Mongolia. Based on this symposium, I believe that we have plenty of new ideas for our researches and build our gorgeous human relationships.

I will look forward to the success of this event.

Welcome to Mongolia and let's create an innovation together!

Thank you very much.

Boldbaatar Damdindorj Ph.D.
President of the Mongolian Neuroscience Society

"MULTIDISCIPLINARY BRAIN SCIENCE-2015"
The 2nd Annual Meeting of Mongolian Neuroscience Society

PROGRAM AT A GLANCE

August 28 - 29, 2015; Corporate Hotel & Convention Center, Ulaanbaatar, Mongolia
Mahatma Gandhi street, 15th khoroo, Ulaanbaatar, Mongolia

FRIDAY, AUG 28, 2015

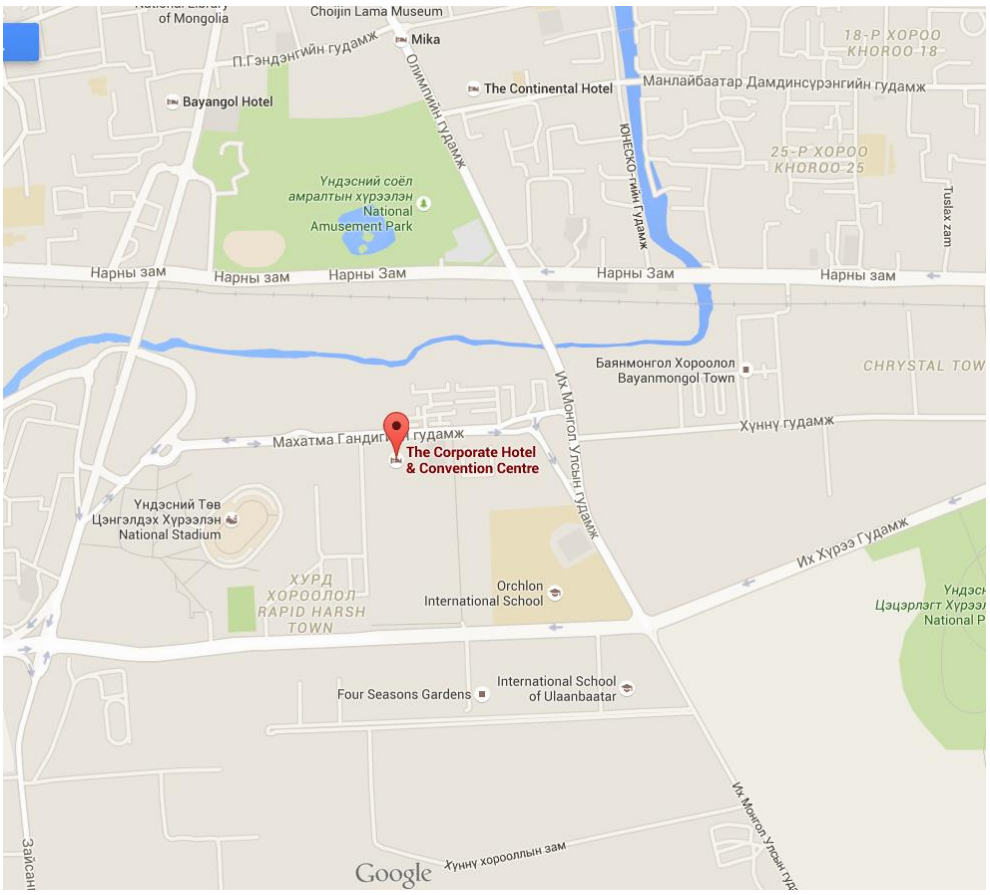
THE CORPORATE HOTEL AND CONVENTION CENTRE

Board Meeting	
12.00-12.50	LONDON HALL (LOBBY OF Corporate Hotel And Convention Centre)
Registration 12.00-13.00	
Opening Speech 13.00-13.20	**Dr. Damdindorj.B** President of MNS **Mr. Gantumur.L** Minister for Education and Science **Dr. Oyunsuren.E** Director, DMEIA, Ministry of Health and Sports **Prof. Batbaatar.G** President of MNUMS
13.20- 13.30	Group photo
Plenary Lectures	**World Renowned Leaders in Neuroscience** UB HALL Chaired by **Dr. Damdindorj B, Dr. Battuvshin L**
13.30- 14.30	Professor Keiji Tanaka Chairman of IBRO/APRC, President of Japan Neuroscience Society, Vice Director of Riken Brain Science Institute, Japan 1. *Functional division among prefrontal areas* 2. *Brain mechanisms of intuitive problem solving in board game experts*
14.30- 15.10	**Professor Toshihiko Yada** Chairman, Department of Integrative Physiology, Jichi Medical University, Director of JASSO, Japan *Central Regulation of Feeding*
15.10- 15.20	**Coffee break**
Introductory Lectures	Chaired by Professor Toshihiko Yada, Prof. Amarsaikhan B
15.20- 15.40	**Professor Guntev Tsagaankhuu** Academician, State's Honored Lecturer, General Consultant in Neurology at the Ministry of Health, Professor Emeritus at MNUMS *The Review Of The Development Of Neurology Service In Mongolia And Prospects For The Future*
15.40- 16.00	**Professor Khairula J.** State's Honored Physician, Professor Emeritus at MNUMS *NEUROSCURGERY in Mongolia: Past, Present, and Future*
16.00- 16.20	**Dr. Nasantsengel Lkhagvasuren** Director, National Center of Mental Health, Mongolia *Current state of mental health service in Mongolia*
16.20- 16.40	**Professor Badamsed.Ts** Department of Radialogy, State Third Central Hospital, Mongolia *NEUROIMAGING in Mongolia: Past, Present, and Future*
16.40- 17.00	**Dr. Battuvshin Lkhagvasuren** Executive Director of the MNS, Lecturer at MNUMS *Development of Neuroscience in Mongolia*
Welcome Reception 18.00- 20.00	WINE LOUNGE

THE CORPORATE HOTEL AND CONVENTION CENTRE

Symposium I:	**IBRO special lectures** UB HALL Chaired by **Dr.Bilegtsaikhan.Ts, Dr. Battuvshin.L**
09.00- 09.20	**Dr.Masanori Murayama** Team Leader, Riken Brain Science Institute, Japan *Optogenetic control of central circuits and sensory perception*
09.20-09.40	**Dr. Kea Joo Lee** Department Head, Principal Investigator, Korean Brain Research Institute, Korea *Chronic Alteration In Network Activity Induces A Circuit-Specific Homeostatic Remodeling In Mature Hippocampus*
09.40- 10.00	**Dr. Jong Cheol Rah** Principal Investigator, Korean Brain Research Institute, Korea *Thalamacortical input onto layer 5 pyramidal neurons in primary somatosensory cortix*
Symposium II:	**Holistic Medicine** Chaired by **Dr. Enkhsaikhan L, Dr. Hiramoto T**
10.00-10.25	**Dr. Tetsuya Hiramoto** Department of Psychosomatic Medicine, National Hospital Organization, Fukuoka Hospital *Introduction to Psychosomatic Medicine*
10.25-10.50	**Professor Davaakhuu S** Professor Emeritus at MNUMS *Brain Science, Mongolian's intelligence*
10.50-11.00	**Coffee break**
Symposium III:	**Neurology** Chaired by **Professor Tovuudorj.A, Professor Tsagaankhuu.G**
11.00- 11.15	**Professor Baasanjav D, Dr. Erdenechimeg Ya** Head, Division of Neurology, Institute of Medical Science, Mongolia *Epidemiology of Neurohereditary diseases in the population of some provinces (aimags) existence in south and central part of Mongolia*
11.15-11.30	**Professor Tsagaankhuu G** Academician, State's Honored Lecturer, General Consultant in Neurology at the Ministry of Health, Professor Emeritus at MNUMS *Some Issues of Cerebral Infarction in Mongolian Young Adults*
11.30- 11.45	**Dr. Amarjargal M** Department of Neurology, School of Medicine, MNUMS *Clinical features of symptomatic epilepsy after brain injury*
11.45- 12.00	**Dr. Sansarmaa D** Department of Neurology, School of Medicine, MNUMS *Epilepsy genetics*
12.00-12.40	**Lunch break / Sponsors presentation**
Symposium IV:	**Psychiatry** Chaired by **Dr. Khishigsuren Z, Dr. Battuvshin L**
12.40-12.55	**Dr. Jargal B** Department of Mental Health, School of Medicine, MNUMS *Results of cognitive-behavioural therapy, risk factors and some clinical symptoms for somatization disorder*
12.55-13.10	**Dr. Oyunsuren D** Department of Mental Health, School of Medicine, MNUMS *Time series analysis on fatal suicide cases among Ulaanbaatar population in 1992-2014*
13.10-13.25	**Dr. Gantsetseg T** Department of Mental Health, School of Medicine, MNUMS *Clinical issues of bipolar disorder*
13.25-13.40	**Dolgorsuren S** Department of Mental Health, MNUMS *Stigmatization and Discrinimation towards mental patients*

Symposium V:	**Social Psychology** Chaired by ***Dr. Sugarmaa M, Dr. Oyunsuren D,***
13.40-13.55	**Enkhjargal Ts, MA** National Psychology Center *Psychological factors on employee productivity in Mongolia*
13.55-14.10	**Delgermend Ts** National Psychology Center *Psycological issues facing high school students: analysis on comparison study and intervention program*
14.10-14.25	**Bayarmaa Ts** Department of Psychology and Methodology, School of Educational Studies, Mongolian National University of Education *Study of the attachment style of adolescent children at-risk behavior to the parents*
14.25-14.40	**Hiramoto T** Department of Psychosomatic Medicine, National Hospital Organization, Fukuoka Hospital *Kokoro Medicine – a new psychological intervention*
Symposium VI:	**Neuroimaging** Chaired by ***Dr. Munkhbaatar D, Dr. Tuvshinjargal D***
14.40- 14.55	**Professor Badamsed Ts** Department of Radiology, State Third Central Hospital *Neuroimaging of hypoxic ishemic encephalopathy*
14.55- 15.10	**Dr. Munkhbaatar D** Department of Radiology, MNUMS *Neuroimaging in brain tumors*
15.10- 15.20	**Dr. Tuvshinjargal D** Department of Radiology, UB Songdo Hospital *Neuroimaging in epilepsy*
15.20- 15.30	**Mr. Undrakh-Erdene E** Department of Radiology, United Family Intermed Hospital *Neuroimaging of stroke*
15.30- 15.40	**Dr. Nasanbayar E** Department of Radiology, Grand Med Hospital *A Systematic Anatomic Approach to Differential Diagnosis of a Sellar or Parasellar Mass*
15.40- 15.50	**Coffee break / Poster session**
Symposium VII:	**Neuroscience and Neurosurgery** Chaired by *Dr.* Batbold B, Dr. Darambazar G
15.50- 16.10	Dr. Darambazar G Department of Basic Science, MNUMS *Paraventricular NUCB2/nesfatin-1 is directly targeted by leptin and mediates its anorexigenic effect*
16.10- 16.25	**Dr. Orkhontuul Sh** Department of Neurosurgery, State Third Central Hospital, Mongolia *Results of neurosurgical treatment in helment-induced brain cystus by Douling method*
16.25-16.40	**Dr. Sevjidmaa B** Department of Physiology, MNUMS *Defect of proteoglycan synthesis embodies a cause of Marfan syndrome*
Closing remarks 16.40-16.50	**Professor Tsagaankhuu G, Dr. Enkhsaikhan L** Academician, State's Honored Lecturer, General Consultant in Neurology at the Ministry of Health, Professor Emeritus at MNUMS Secretary General of the MNS



Corporate Hotel & Convention Center, Ulaanbaatar, Mongolia
Mahatma Gandhi street, 15th khoroo, Ulaanbaatar, Mongolia

Keiji Tanaka

Position

Head, Cognitive Brain Mapping Laboratory,
RIKEN Brain Science Institute,
2-1 Hirosawa, Wako-shi, Saitama, 351-01, Japan

Education and Degree

B. Sci Department of Biophysical Engineering, Faculty of Engineering Science, Osaka University, 1973

M. Sci Department of Biophysical Engineering, Faculty of Engineering Science, Osaka University, 1975

Ph. D. Faculty of Medicine, University of Tokyo, 1983 (by dissertation)

Appointments

1975-1989 Researcher, NHK Science and Technical Research Laboratories

1989-1996 Head, Laboratory for Neural Information Processing, Frontier Research Program, RIKEN

1992-1997 Head, Information Science Laboratory, RIKEN

1997-present Head, Cognitive Brain Mapping Laboratory, RIKEN Brain Science Institute

2003-2015 Deputy Director, RIKEN Brain Science Institute (2008-2009, Acting Director)

Award

1994 Nakaakira-Tsukahara Memorial Prize

1995 The Tenth Alice and Joseph Brooks International Lecture on the Neurosciences, Harvard **University**

1997 The Third International Conference on Functional Mapping of the Human Brain, Talairach **Lecture**

2002 Toshihiko-Tokizane Memorial Prize

2007 Neuronal Plasticity Prize (Foundation IPSEN, France)

2008 Science and Technology Prize (Ministry of Education, Culture, Sports, Science and Technology, Japan)

Editorial board

Cognitive Brain Research (1993-2005)
Neuroscience Research (1994-: Receiving Editor, 2000-2009; Deputy Editor-in-Chief, 2006-2009)
Neural Networks (1994-2001)
Science (1996-1999)
Cerebral Cortex (1996-)
Visual Neuroscience (1996-1998)
Neuron (1998-)
Journal of Neurophysiology (2000-)

Neuroscience (Section Editor, 2001-2006)
Neuroimage (2002-2003)
The Journal of Neuroscience (2005-2010)
Progress in Neurobiology (2008-)
Annals of Neurosciences (2009-)

Academic Society activity

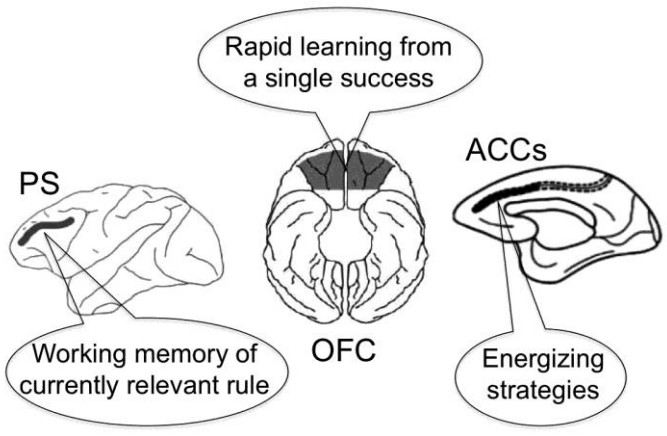
Member of Board of the Japan Neuroscience Society (JNS) (2006-)
Chairperson of the 30th Annual Meeting of the Japan Neuroscience Society (2007)
Vice Chair, Governing Board of the International Neuroinformatics Coordinating Facility (INCF) (2009-)
Vice President, Japan Neuroscience Society (JNS) (2011-2013)
President, Japan Neuroscience Society (JNS) (2014-)
Chair, Asian-Pacific Regional Committee, International Brain Research Organization, (IBRO-APRC) (2013-)

Functional division among prefrontal areas

Keiji Tanaka
RIKEN Brain Science Institute, keiji@riken.jp

The neural circuitries in the prefrontal cortex are thought to be critical for the flexible control of behavior in primates, but the mechanisms remain largely unknown. Because the prefrontal cortex is composed of multiple areas each with unique anatomical connections with other brain sites, we expect that the comparison of functional roles among the prefrontal areas would help disentangle the processes of flexible behavioral control.

Application of previously learned behavioral rules beyond simple stimulus-action is required in goal-directed behavior in complicated environment, and the currently relevant rule is often not directly indicated by sensory cues. The Wisconsin Card Sorting Test (WCST) mimics such a situation. We have developed an animal version of WCST and trained macaque monkeys with the task. In the task, the monkey selected one of the three test stimuli by matching it with the sample stimulus in color or in shape. The matching rule was constant within a block of trials, but changed between blocks without giving any notice to the monkey. There was no cue to indicate the currently relevant rule: the monkey had to determine the rule based on the reward history in recent previous trials. Lesion-behavioral studies and single-cell recordings from intact monkeys have been conducted: these two methods are complimentary with each other. Bilateral lesion of the principal sulcus region (PS), orbitofrontal region (OFC) or anterior cingulate cortex sulcus region (ACCs) resulted in significant degradation of the overall performance of the monkeys.



Further analyses of the monkeys' performance in the task and in other probe tests showed that the reasons of the degradation were different among the lesion groups. Only the PS lesion impaired maintenance of abstract rules in working memory; only the OFC lesion impaired rapid learning of rule value from a single success; and the ACS lesion impaired slowing responses under uncertainty. These results show that the prefrontal areas contribute to the flexible control of behavior by playing individually specific functional roles.

We have also expanded our lesion study to the frontal pole (area 10). Based on its anatomical connections, the frontal pole is assumed to be located at the highest level in the cortical hierarchy. Monkeys with the frontal pole lesion didn't show degradation of the WCST performance, whereas they were more efficient in conflict adaptation (faster reaction time, which means a better control after an experience of conflict) and less disturbed by experimentally inserted disturbances (face detection task trials or free rewards given during inter-trial intervals). These results suggest that the frontal pole works in disengagement of cognitive resource from the current task to new possibilities, whereas posterior prefrontal areas contribute to the execution of the current task.

Related publications from his own laboratory:

Mansouri, F. A. and Tanaka, K. (2002) Behavioral evidence for working memory of sensory dimension in macaque monkeys. *Behav. Brain Res.* 136: 415-426.

Mansouri F, Matsumoto K, Tanaka K (2006) Prefrontal cell activities related to monkeys' success and failure in adapting to rule changes in a Wisconsin Card Sorting Test (WCST) analog. *J. Neurosci.* 26: 2745-2756.

Mansouri FA, Buckley MJ, Tanaka K (2007) Mnemonic function of lateral prefrontal cortex in conflict-induced behavioral adjustment. *Science* 318: 987-990.

Buckley MJ, Mansouri FA, Hoda H, Mahboubi M, Browning PFG, Kwok SC, Phillips A, Tanaka K (2009) Dissociable components of rule-guided behavior depend on distinct medial and prefrontal regions. *Science* 325: 52-58.

Kuwabara M, Mansouri FA, Buckley MJ, Tanaka K (2014) Cognitive control functions of anterior cingulate cortex in macaque monkeys performing a Wisconsin Card Sorting Test analog. *J. Neurosci.* 34: 7531-7547.

Mansouri F, Buckley MJ, Tanaka K (2014) The essential role of primate orbitofrontal cortex in conflict-induced executive control adjustment. *J. Neurosci.* 34: 11016-11031.

Mansouri FA, Buckley MJ, Mahboubi M, Tanaka K (2015) Behavioral consequences of selective damage to frontal pole and posterior cingulate cortices. *Proc. Natl. Acad. Sci. U. S. A.* 112: E3940-E3949.

Brain mechanisms of intuitive problem solving in board game experts

Keiji Tanaka
RIKEN Brain Science Institute

Psychological studies of cognitive experts have shown that unconscious, automatic process is essential for their superior capability. The process is often referred to as "intuitive," because it is

quick and cannot be explained. Board games provide a good opportunity to study mechanisms underlying cognitive expertise, because the games are played in accordance with a set of well-defined rules. In an early study (de Groot 1946), both world-class and local-club players were asked to think aloud while playing spot games of chess, and no difference was found in the depth or width of search between the two groups. Instead, a difference was found in the selection of game tree branches that the player put into search: the best next-move was always included in the first part of search in world-class players, whereas local-club players often missed it in their large search. de Groot inferred that world-class players generate one or a few best next-moves by cued recall, not by search. Subsequently, it was found that chess experts quickly perceive chess patterns using various stereotyped arrangements of several pieces, called "chunks," as units of perception (Chase and Simon, 1973). The perception of chunks may automatically generate an idea of the best next-move in chess experts. Despite these rich psychological studies, neural substrates of the automatic processes have not been revealed. We examined brain activity during generation of the idea of the best next-move to a given board pattern by using fMRI. Whereas distributed association cortical sites were activated, as expected, when the subject was allowed to think consciously for 8 s for each board pattern, the head of the caudate nucleus, a part of the basal ganglia, was also recruited when the subject was given only 1 s and had to solely depend on intuitive generation. The activation in the caudate head was stronger and more consistent in professional players than in amateurs. Moreover, when we trained novices for fifteen weeks to learn a simple board game, the activation in the head of caudate nucleus developed over the course of training, in parallel to the development of the capability to quickly generate the idea of the best next-move. These results suggest that the board-game expertise is supported by the specific neural circuit involving the caudate head, which implements the automatic processes of next-move generation.

Related publications from his own laboratory:

Wan X, Nakatani H, Ueno K, Asamizuya T, Cheng K, Tanaka K (2011) The neural basis of intuitive best next-move generation in board game experts. *Science* 331: 341-346.

Wan X, Takano D, Asamizuya T, Suzuki C, Ueno K, Cheng K, Ito T, Tanaka K (2012) Developing intuition: neural correlates of cognitive-skill learning in caudate nucleus. *J. Neurosci.* 32: 17492-17501.

Wan X, Cheng K, Tanaka K (2015) Neural Encoding of Opposing Strategy Values in Anterior and Posterior Cingulate Cortex. *Nature Neurosci*. 18: 752-759.

Toshihiko Yada

Educational Career

1975 Graduated from Hokkaido University, Sapporo, Japan
1983 Graduated from Kyoto University, Graduate School of Medicine, Kyoto, Japan
1983 Ph.D., Kyoto University, Japan

Professional Career

1983-1984 Research Associate, Tokyo Medical and Dental University, School of Medicine, Department of Physiology, Japan
1984-1986 Postdoctoral Fellow, University of Miami, School of Medicine, Department of Physiology and Biophysics, USA
1986-1987 Postdoctoral Associate, Cornell University, College of Veterinary Medicine, Department of Pharmacology, USA
1987-2000 Associate Professor, Kagoshima University, School of Medicine, Department of Physiology, Japan
2000-present Professor and Chairman, Department of Physiology, Division of Integrative Physiology, Jichi Medical University, School of Medicine, Japan

1992-1993 Visiting Associate Professor, Tulane University, School of Medicine, Department of Medicine, USA
1996-2000 Adjunct Associate Professor, National Institute for Physiological Sciences, Division of Intracellular Metabolism, Okazaki, Japan
2009-present Adjunct Professor, National Institute for Physiological Sciences, Department of Developmental Physiology, Division of Adaptation Development, Okazaki, Japan
2010-present Visiting Professor, Health Sciences University of Mongolia (Mongolian National University of Medical Sciences), Ulaanbaatar, Mongolia

Awards

1995 Kodama Memorial Award for distinguished research
2007 Best Publication Award, Jichi Medical University
2010 Tahara Memorial Lecture, Japan Physiological society
2010 Best Publication Award, Jichi Medical University
2011 President, Japan Association for the Study of Obesity
2014 Prize of Japan Association for the Study of Obesity
2015 Endcocrine Journal Best Publication Award, Japan Endocrine Society

Professional Affiliations

Japan Society for the Study of Obesity: Director, Councilor
The Physiological Society of Japan: Councilor
Japan Diabetes Society: Councilor
Japan Endocrine Society: Councilor
American Diabetes Association: Member
The American Physiological Society: Member
European Association for Study of Diabetes: Member

Glucose and hormones produce appetite and satiety through hypothalamic NPY/AgRP, nesfatin-1 and oxytocin neurons

Toshihiko Yada
Department of Physiology, Division of Integrative Physiology, Jichi Medical University School of Medicine

Fasting lowers blood glucose and raises plasma ghrelin, and thereby reduces Na^+,K^+-ATPase activity in the hypothalamic arcuate nucleus (ARC), the first order center of feeding/metabolism. Reduced Na^+,K^+-ATPase activity activates NPY/AgRP neurons in ARC and thereby produces appetite. Upon intake of food, plasma glucose, insulin and leptin increase, and all these activate nesfatin-1 neurons in the paraventricular nucleus (PVN), the second order center. Nesfatin-1 activates oxytocin neurons in PVN to induce satiety. Rhythmic expression of nesfatin-1 in PVN drives circadian feeding rhythm, playing a key role in maintaining healthy energy metabolism. Impaired rhythms of nesfatin-1 and oxytocin cause metabolic syndrome, which is corrected by oxytocin treatment.

The review of development of neurology service in Mongolia and prospects for the future

Professor G.Tsagaankhuu
Department of Neurology, MNUMS

The history of beginning and development of Mongolian Neurology has been considered in 3 periods of the second half of XX century and beginning of XXI.

First period (1939-1960) was presented by founding of neurological service in Mongolia from middle of 1940. Really, the formation of fundamentals of Neurology service in our country was connected with creation of Department of Neurology at the Medical Faculty of Mongolian State University (MSU) in 1947. Exactly, in 1947, the Department of Neurology and Psychiatry of the present School of Medicine, Mongolian National University of Medical Sciences (MNUMS) was founded at First Central Hospital of Ulaanbaatar City by the Russian professor G.Ya.Liberzon together with our national personnel Dr. G.Lodon, graduate in 1947 from the Medical Faculty of the MSU and Dr. L.Dagzmaa, graduate in 1938 from Omsk Medical Institute, Russia.

The first national specialist in Neurology Dr. G.London after completing his doctoral program at the Irkutsk Medical Institute of Russia, obtained his PhD degree on the subject of Intracranial hypertension in chronic neuroinfections (in 1953), and later in 1954 he was appointed head of the Department of Neurology and Psychiatry, and taking the responsibility as consultant in neurology until 1968. His research interests was focused on the study neurosyphilis, epidemic encephalitis and poliomyelitis, and the data of his investigations published in the series Proceedings of Neurology and Psychiatry of Mongolia in 1960-1969, and in his book titled "Acute Poliomyelitis in Children" in 1968.

The First Central Hospital in the beginning having 10 neurological beds in 1939, was expanded till 25 beds in 1947, and also over 50 beds during 1950-1953. In 1950 the Neurological Department was moved to Psychiatric Hospital, but in 1953 have moved back to the First Central Hospital because of there was no rest for neurological patients exerting anxiety from delirious psychiatric patients. The neurosurgical intervention has introduced into neurology clinics from 1966. In this period basically has been carried training medical students in neurology and some general practitioners have specialized in neurology under the mentorships of Russian neurologists. During this years was prepared more 10 neurologists servicing mainly to population of Ulaanbaatar and giving them outpatient and inpatient assistance. To the provincial populations was rendered neurological aid in the form of emergency call. Research works was carried only by means of clinical observation in cerebrovascular diseases and some neuroinfections using analysis of cerebral spinal fluid and X-ray scan of cranium and vertebral column in peripheral nervous disorders, and brain and spinal cord tumors.

Second period is occupied 1960-1990 years and was presented with establishment of neurological aid network in cities and provincial centers of our country. In this period was prepared over 140 neurologists by means cycle of training courses (4-5 months), that have worked in the Ulaanbaatar city hospitals and in countryside outpatient clinics.

In 1965 was organized department of neurology of 50 beds with neurosurgical unit (in 1966) in the Third Central Hospital, and also the pediatric neurological department of 30 beds in the National

Center of Maternal and Child Health. Also in 1985-1989 has been organized neurological department of 20-40 beds in the structure of the hospitals of every Aimag center.

Dr. D.Ravdandorj after receiving his PhD degree on the subject of Neurosyphilis from the Irkutsk Medical Institute of Russia (in 1971), he was been held following chief of the Department of Neurology and Psychiatry from 1971 to 1985. At the same time he was provided the responsibility of consulting for neurology services and his main research interests was focused on study of neurosyphilis and epidemiology of nervous diseases in Mongolia.

In 1969, Dr. G.Tsagaankhuu was selected as the faculty member at the Department of Neurology and Psychiatry, he completed his doctoral research at the Mongolian State Medical Institute and obtained his PhD degree on the subject of visceral reflex mechanisms in the pathogenesis of head and back pain syndromes in 1973. Dr. G.Tsagaankhuu from 1985 to1998 held as the Head of the Department of Neurology of the School of Medicine, MNUMS. At the same time since 1985 to now days he has held long-term appointments as chief consultant in Neurology and from 1986 to 2012 served as the chairman of Neurology Board of Ministry of Health, Mongolia. His research interests in Neurology focused on headaches, back pains, stroke, epilepsy, hereditary disorders and multiple sclerosis.

In the results of research works carried in field of Neurology during this time born 7 neurologists with degree of doctor of philosophy. The diagnostic tools introduced into neurological clinics were a neurophysiological (EEG, EMG) and neuroradiological (CT, cerebral carotid angiography) methods.

Since 1987 works the Section of Neurology at the National Research Institute under the leadership Dr. D.Baasanjav, and carried researches on the account of financed projects for study of problems of neurological disorders.

The first manual for students written by associate professor D.Ravdandorj was published in 1972 under the title of "Practicum in neurology" (1972), at the same time has published monography "The automatic nervous system" written by Russian Dr. E.P.Zagorovski with Mongolian Dr. G.Tsagaankhuu (1972) and later "The common Neurology" written by Dr.G.Tsagaankhuu (1988).

Third period (after 1990) is presented by expansion of research works and development of foreign relations in field of neurology with overseas countries.

From 1998 to 2003 Dr. D.Ulziibayar with degree of PhD obtained from the Russian Research Institute of Neurology in 1989, served as head of the Department of Neurology and then since 2003 to 2012 the position of the Department's chairman occupied Dr. L.Otgonbayar with degree of PhD received from the Poland Research Academia in 1999, and since 2012 the head of Department of Neurology appointed Dr. A.Tovuudorj with degree of PhD obtained from MNUMS in 2002.

From the middle 1990 on suggestion of professor G.Tsagaankhuu the faculty member of the Department has expanded to the level of over 7, which are basic neuroscience research workers. All are involved in teaching and research works. The teaching responsibilities of the Department are mainly to teach Neurology to residents and medical students, and post-graduate neurologists. Resent time research interests in Neurology focused on the previous problems such as stroke, multiple sclerosis, epilepsy and movements disorders.

In 1995-1998 was organized Neurological Department of 20-40 beds in the structure of the hospitals of every District, in Ulaanbaatar.

From 1990 years training programs in neurology for under graduate, graduate and postgraduate students of Mongolian National University of Medical Sciences has revised, and was started a new special program for training of residency, master of medicine and doctor of philosophy. In 1990-2014 years has prepared over 100 young neurologists, 18 master of medicine and 16 doctor of philosophy.

The number of Neurologists comes to 6.6 in 100000 persons, number of neurological beds accounts for 3.0 in 100000 populations (in Ulaanbaatar 3.1 and in Regional Aimags Centers 2.9 which are very high indicator if compare with some Asian countries in the World.

The research works have presented with study the major neurological diseases such as a stroke, epilepsy, multiple sclerosis, Parkinson disease, and hereditary muscular dystrophies. According to the results of studies neurologic outpatient clients account for 230 cases per 10000 inhabitants, and inpatient admissions 133 cases per 10000 populations which are relatively high rates of morbidity. In the world the stroke annual incidence account for 100-300 cases per 100000 persons and in Mongolian populations the stroke incidence is 290 cases per 100000 persons (2006), therefor our country is considered in the high risk associated with stroke. The mortality rates of circulatory system disorders and of strokes are 23.0 cases per 10000 inhabitants, thus these disorders compose the leading causes of death. In the populations of our country the prevalence of following disorders such as epilepsy is 250-390:100000 (1993-2005), of multiple sclerosis — 5-10:100000 (2006-2010), and Parkinson's disease — 130:100000 (2003) which results is established in a recent studies (D.Baasanjav, 1993-2006; G.Tsagaankhuu, 1993-2010).

The neurological clinics are installed neuroimaging techniques (MRI, MRA, CTA) and ultrasonographic instruments (TCD, Duplex scan) for diagnosis of different neurological diseases and for conducting of a research works.

In the first 14 years of XXI century has published University textbooks of Neurology written by professor G.Tsagaankhuu such as "Diagnosis of nervous diseases" (2002), "Diagnosis and management of neurological disorders" (2002), and "Neurology" revised edition of 2007, 2011, 2014 for students, graduates, and postgraduates of the Mongolian National University of Medical Sciences.

In 2013-2014 years the Neurological Clinics at Third and First Central Hospitals are organized stroke units for emergency aid including the thrombolysis therapy to the stroke patients and neurosurgery intervention.

The Department of Neurology of School of Medicine, MNUMS from the foundation time together with the Board of Neurology at the Ministry of Health, the Mongolian Society of Neurologists (founded in 1994), the Mongolian Epilepsy Society (founded in 2001), the Mongolian Stroke Association (founded in 2009), and the Mongolian Neurology Society (founded in 2014) taking on a teaching, research and consulting responsibilities in Neurology, played a leading role in developing and expanding of neurological service in Mongolia.

The foreign relations in field of Neurology with overseas countries has began since 2006 and such collaboration allowed to held every year international workshops, conferences and symposiums in Ulaanbaatar together with top neurologists and scientists from the developed countries including European, Asian, Australian and USA regions.

During past 70 years in field of Mongolian Neurology in the result of carried researches have been worked out 24 doctoral monographs, 6 textbooks and 18 handbooks, 13 scientific reports in written form of performed research projects, 15 patent rights, 11 useful models, and 14 guidelines for diagnosis and treatment of neurological diseases.

The prospects for the future:

1. Create independent Neurology Center at the Mongolian National University of Medical Sciences;
2. Organize the sections of stroke, epilepsy, multiple sclerosis, headache, peripheral and neuromuscular disorders at the tertiary hospitals in Ulaanbaatar, and according to this task prepare specialists in assistance with the developed countries;
3. Cut down the number of inpatient cases served by one neurologist till 6-8 (beds) and reduce the number of outpatient cases served by one neurologist in the working time of the day till 10-12;
4. Provide the Neurological Clinics with new investigation techniques
5. Carry a study of cerebrovascular diseases, epilepsy, multiple sclerosis, and neuromuscular disorders in the high scientific level using the neuroradiological, neurophysiological and ultrasonic methods, and also equally the hematological, neuroimmunological, biochemical, and molecular biological tests;
6. Work in close co-operation with researchers from neurology, neurosurgery, psychiatry, and neuroscience team to study the brain in high scientific level using methods of neurophysiology (EEG) and neuroimaging (functional MRI), and tests for elucidation of brain cognitive functions.

Conclusions: In the past over 70 years of foundation of Neurology service in Mongolia was trained more than 14000 students, prepared over 200 neurologists, born 24 scientists with degree of Doctor of Philosophy and Doctor of Sciences, 18 Master of Medicine, 3 professors, 5 associate professors, 6 honored doctors and also both merited scientist and distinguished professor. Has been published 6 textbooks and 18 handbooks, 24 doctoral monographs, 30 popular books and many hundred articles in the national and foreign scientific journals. In the time of development of Neurology service of country was introduced into clinical practice the Neurophysiological (EEG, EMG), Ultrasonographic (TCD), Neuroradiological and Neuroimaging (CT, MRI) diagnostic methods. The future goals of Mongolian Neurology is to organize separate Neurology Center in the Mongolian National University of Medical Sciences, to prepare young scientific generations, to equip the Neurological Clinics with new investigation techniques and to study of cerebrovascular diseases, epilepsy, multiple sclerosis, and neuromuscular disorders in the high scientific level.

Keywords: Neurological Service, Department of Neurology, Mongolia

Тархины цусан хангамжын цочмог дутагдал болон цус хомсрох харвалтын үеийн мэс заслын эмчилгээний үр дүн

Ж.Хайрулла[1], Б.Батчулуун[1], Л.Аваажигмэд[2], Б.Батболд[2], С.Абай[2], Д.Бямбацэнд[3], С.Уранчимэг[4]
1 – Шастины Төв Эмнэлэг, Мэдрэлийн Мэс Заслын зөвлөх эмч
2 - Шастины Төв Эмнэлэг, Мэдрэлийн Мэс Заслын тасаг bat_bold11@yahoo.com
3 - Шастины Төв Эмнэлэг, Мэдрэлийн мэс заслын төслийн мэргэжилтэн
4 - "Топаз" эмнэлэг, Мэс заслын эмч

Түлхүүр үг: Тархины цусан хангамжын дутагдал болон цус хомсрох харвалт, мэс заслын аргачилал, мэдрэлийн мэс засал

Үндэслэл: Тархины тодорхой хэсэгт цусны эргэлт саатсанаас цус хомсрон тархины сөнөрөл явагддаг. Тархины судас бөглөрсөнөөс тархинд цус багадалтын цус харвалт /ischemic cerebrovascular disease/ болон тархины шигдээс /infarction/ үүсдэг. Судасны бөглөрөлт эмгэг гавлын гаднах болон доторхи судсуудын нарийсалт эмгэгүүд, атеросклероз, артерийн гипертензийн хамааралт судасны гиалиноз, чихрийн шижингийн ангиопати, зүрхний гаралтай эмгэгүүд, халдвар харшлын васкулит зэрэг өвчнүүдийн суурин дээр голчлон бий болдог. [1,4]

Дэлхийн хөгжилтэй орнуудад тархины харвалт жилд 100000 хүн ам тутамд дунджаар 100-300 тохиолдол байгаа бол Монголд 100000 хүн амд дунджаар 290 тохиолдол бүртгэгдэж харвалтын өвчлөлөөр дэлхийн дундаж үзүүлэлтийн дээд түвшинд байна. Хөгжилтэй орнуудад тархины шигдээс нийт харвалтын 87% -д тохиолддог бол манай оронд тархины шигдээс, цус харвалтын харьцаа 1:1 байна.

Дэлхийн эрүүл мэндийн байгуулгын (WHO) судалгаагаар тархины харвалтын 80-85% -ийг цус хомсрох харвалт, 15-20%-ийг тархины цус харвалт, 10%-ийг аалзавч доорхи харвалт тус бүр эзэлдэг нь тогтоогдсон байна.

Тархины цус хомсрох харвалтаар дэлхий нийтэд жилдээ 15 сая хүн өртдөг бөгөөд үүнээс 5 сая хүн нас бардаг байна. (WHO) [2] Мөн 100 000 хүн ам тутамд 45-54 насны 72 тохиолдол, 75-аас дээш насны 1786 тохиолдол бүртгэгдсэн байна. (Mayo Clinic, Rochester, Minnesota, 2006) Эр:эм=1.3:1. Сүүлийн жилүүдэд залуужих хандлагатай байгаа. Зөвхөн АНУ-д гэхэд л жил бүр 700000 хүн шинээр буюу давтан харвалтанд өртөж , түүнээс 158000 тохиолдол үхлээр төгсөж, дэлхийд тархины харвалт нас баралтын тэргүүлэх 3 дахь шалтгаанд ордог.

Тархины шигдээс нь хэдэн секундээс хэдэн минутын хооронд гэнэт илрэх ба тухайн тэжээгч судасны бүсээс хамаарч тодорхой эмнэл зүйн шинж тэмдэгүүд өгдөг. Тархины шигдээс нь гол төлөв тархины дунд артерийн бүсэд 75%, нуруу-суурийн артерийн бүсэд 20% тохиолддог байна.

Манай орны хувьд өнөөдрийг хүртэл мэдрэлийн болон мэдрэлийн мэс заслын клиник практикт тархины цус багадалтаас үүдэлтэй тархины сөнөрөлийн /ischemic, infarction/ үндсэн эмчилгээнд эмийн болон бүлэн хайлуулах эмчилгээ голлох байр суурь эзэлдэг. Сүүлийн нэг жилийн хугацаанд тархины цус багадалтаас үүдэлтэй тархины сөнөрөлийн /ischemic, infarction/ үед эмийн болон бүлэн хайлуулах эмчилгээнээс гадна судас залгах /bypass-STA-MCA, superfacial temporal artery-middle cerebral artery anastomosis/, судас суулгах /EDAS-

encephalo-duro-arterio-synangiosis, EMAS-encephalo-myo-arterio-synangiosis, EMS-encephalo-myo-synangiosis/ шинэ мэс заслын аргуудыг нэвтрүүлж байна.

Судас суулгах /EDAS-encephalo-duro-arterio-synangiosis, EMAS-encephalo-myo-arterio-synangiosis, EMS-encephalo-myo-synangiosis/ аргыг ихэвчлэн бага насны хүүхдүүдэд буюу Моя-моя эмгэгийн /Moya-Moya disease/ үед мэс засал хийдэг бол насанд хүргэгчдэд судас залгах /bypass-STA-MCA, superfacial temporal artery-middle cerebral artery anastomosis/ мэс засал хийдэг.

Судас залгах /bypass-STA-MCA, superfacial temporal artery-middle cerebral artery anastomosis/ мэс заслын арга нь манай клиникийн практикт шинэлэг мэс заслын арга бөгөөд одоогоор гурван тохиолдолд мэс засал хийгдлээ.

Эмнэл зүйн тохиолдол

Тохиолдол 1.

Эмчлүүлэгч Л.Ц 53 настай, эмэгтэй

2014.01.18 нд DS: Окклюзия ВСА в обоих сторонный . Последствие Ишемия инсульта, АГ III , Сахарный диабет (2 талын гүрээний дотор артерийн бөглөрөл , цус хомсрох харвалтын дараах үлдэц хүндрэл, артерийн даралт ихсэх эмгэг, чихрийн шижин) оноштой , толгой өвдөнө, үгээ зөөж, эрүүгээ зууж ярина, команд бүрэн биелүүлэхгүй, нойронд муу гэсэн зовиуртай, баруун гар , хөл гүн саатай тус тасагт хэвтсэн.

Компьютер томографи шинжилгээ (2013.12.01) нд : 2 тал бөмбөлөгийн зулай, чамархайн гүнд ишемийн зон илэрсэн.

Катетрт ангиографи (2014.12.01) : 2 талын гүрээний дотор тараагуурын эхлэх хэсэгт товруугаар бөглөрсөн. Гавлын дунд тараагуур чамархайн цонхгүй тул тодорхойлох боломжгүй.

Дээрхээс үндэслэн 2014.01.24 нд Л.Аваажигмэд, С. Алтан-Очир нар зүүн талд Bypass STA-MCA M4 мэс засал хийсэн. Залгалт хийсэн MCA M4 диаметр 1.3 мм. Хагалгааны эрт үед эмчлүүлэгчийн биеийн байдал харьцангуй сайжирсан боловч хагалгаанаас 2 сарын дараа өвчтөн ухаан алдаж, давтан компьютер томографи шинжилгээгээр зүүн таламус, гадна капсулд жижиг цус хуралт тодорхойлогдсон тул баруун талд дахин судас залгах мэс засал хийхийг хойшлуулсан.

Тохиолдол 2.

Эмчлүүлэгч Б 57 настай, эрэгтэй

2014.12.08 нд DS: Тромбоз ВСА слева. Ишемия в бассейн левой ВСА (Гүрээний дотор артерийн бөглөрөл , цус хомсрох харвалт) оноштой , ухаан бүдэг сайн ярьж чадахгүй, хэл нь ээдэрсэн , яриа нь ойлгогдохгүй зовиуртай, баруун гар , хөл саатай тус тасагт хэвтсэн.

Компьютер томографи шинжилгээ (2014.12.01) нд : 3үүн тал бөмбөлөгийн зулай, чамархайн гүнд ишемийн зон илэрсэн.

Катетрт ангиографи (2014.12.01) : 3үүн талын гүрээний дотор тараагуур эхлэх хэсгээсээ дээш бөглөрсөн.

Дээрхээс үндэслэн С.Абай, Ш.Орхонтуул нар зүүн талд Bypass STA-MCA M4 мэс засал хийсэн. Залгалт хийсэн MCA M4 диаметр 1.7 мм. Хагалгааны үеийн (интероперационный) болон дараах доплерографи шинжилгээний үзүүлэлтээр залгасан судас бүрэн ажиллаж эхэлсэн.

Тохиолдол 3.

Эмчлүүлэгч О.Б 58 настай , эрэгтэй

2015 оны 02 дугаар сарын 15 –ны өдөр гэнэт хахаж цацан, нүүр муруйж, зүүн гар , хөл сулран , тархины баруун тал бөмбөлөгийн цус хомсролын цус харвалт оношлогдон тус тасагт хэвтсэн. 2014 оны 11 дүгээр сарын 06 –ны өдөр тархины цус хомсролын цус харвалт оношилогдон, эмийн эмчилгээ хийгдэж, саа сэргэсэн.1998 оноос чихрийн шижин оношилогдон, инсулин эмчилгээ хийгддэг.

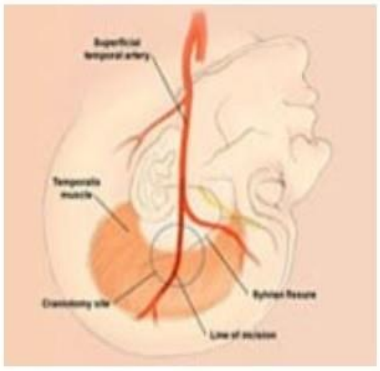
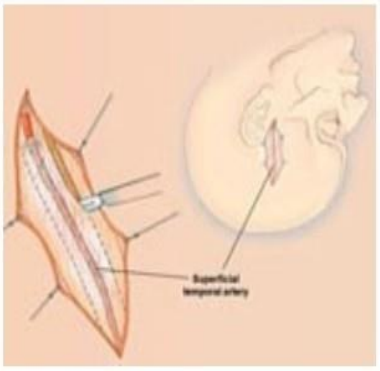
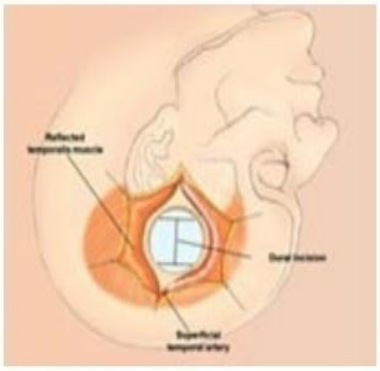
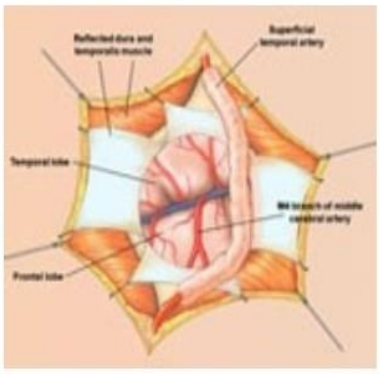
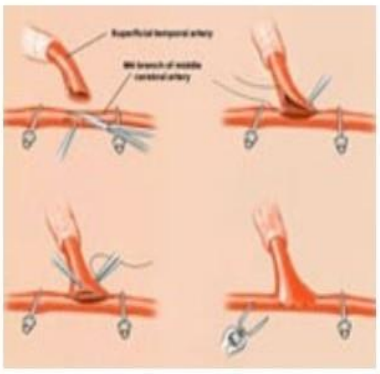
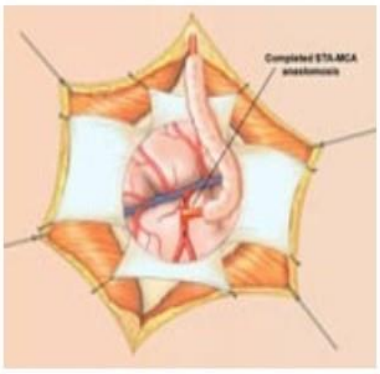
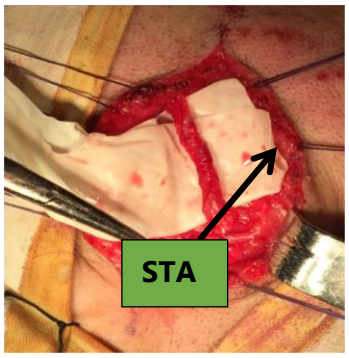
Катетрт ангиографи (2015.02.17) : Баруун гүрээний дотор тараагуурын бифуркацийн /салаалалтын / түвшинд бүрэн бөглөрөлттэй. Зүүн талаас 2 талын ПМА /тархины өмнөд тараагуур / , мөн баруун СМА / тархины дунд тараагуур / , коллатеральд тодролгүй. ПА / нуруу-суурийн тараагуур / зүүнд эхлэх хэсэгт нугаларал их.

Тархины соронзон үелзүүрт томографи (2015.02.16) :

- A large right thalamic acute hematoma with strong susceptibility effect due to narrowing left lateral ventricule. No intraventricular extention.
- Multiple peripheral microbleeds in parietal lobes.
- Old hemorrhages in the left thalamus.
- Diffuse acute of ischemic / infarction in the right frontal and temporal, parietal cortix and cortical white matters
- Anteroposterior 3D TOF MRA shows no signal from flow-related enhancement along the right C1 cervical internal carotid artery and M1 middle cerebral artery segment 1: - Stenosis of C1 cervical internal carotid artery and M1 middle cerebral artery segment 1 .

Дээрхээс үндэслэн 2015.02.27 –ны өдөр Л.Аваажигмэд , Б.Батболд, Д.Бямбацэнд С.Уранчимэг нар Bypass STA-MCA M4 мэс засал хийсэн.

Мэс заслын явц : ЕМА-ын дор өвчтөнийг баруун хажуугаар байрлуулж, зүүн чамархайд чамархайн өнгөц тараагуур судасны дагуу 16 см зүслэг хийж, өмнөд болон арын салааг ялгаж , тусгаарлав. Сонсголын гадна нүхнээс дээш 6 см – т гавлын ясыг өрөмдөж цоолон, тархины хатуу хальсыг “I “ хэлбэрээр нээж , диаметр нь 1 мм МСА М4 / тархины дунд тараагуур судасны төгсгөлийн салаа /салааг ялгав. Чамархайн өнгөц тараагуур судасны арын салааг тайрч , “fish mouth” үүсгэн , тархины дунд тараагуур судасны төгсгөлийн салаан дээр ханын дагуу 0,5 см зүслэг хийсэнтэй холбож, prolene 8 утсаар зангилаат оёдол тавив. Хавчаарыг авч шалгахад холбоосноос цус гарахгүй, цус бүрэн дүүрч байсан тул цус тогтоолт хийж, шархыг үечлэн хаав.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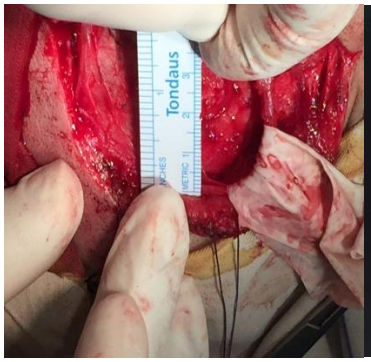
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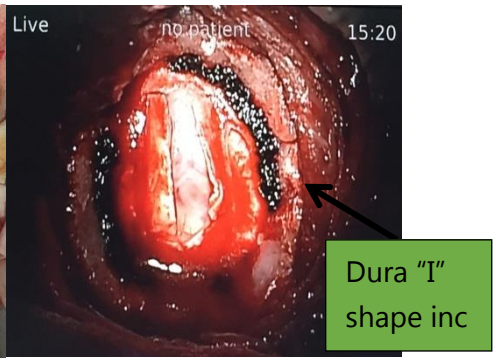
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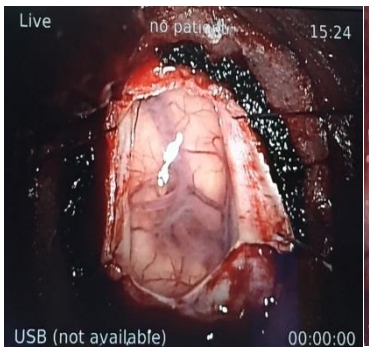
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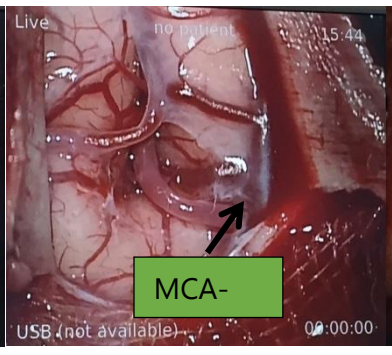
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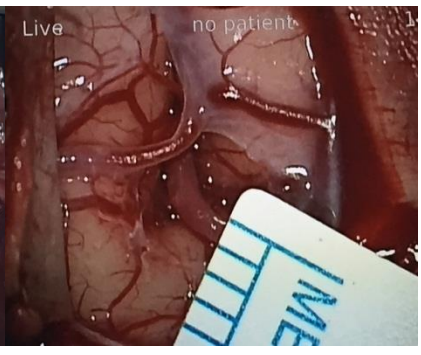
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Хагалгааны дараа эмнэл зүйн шинж тэмдэг бүдгэрч , хагалгааны дараах тархины судасны доплерографи шинжилгээнд (хагалгааны дараах 7 дахь хоног) тархины баруун тал бөмбөлөгийн коллатераль сайжирч, сигналийн эрчим өндөрссөн үзүүлэлттэй байв.

Хэлцэмж:

1. Цөөн тохиолдол боловч мэс засал эмчилгээний үр дүн сайн (66,6%) байгаа нь манай оронд тархины судас залгаж, дахин судасжуулах мэс засал (bypass) хийх орчин нөхцөл , мэдлэг чадвар бүхий баг, хамт олон бүрдсэн гэж дүгнэж болохоор байна.

2. Салбар хоорондын хамтын ажиллагааг сайжруулснаар харвалтын эрт үед (эхний 6 цагийн дотор) тархины судас залгаж, дахин судасжуулах мэс засал хийх нь эмчилгээний үр дүнг улам сайжруулах юм.
3. Цаашид мэс засал эмчилгээний нэр төрлийг олшруулах, зөвхөн цус хомсрох харвалтын үед төдийгүй тархины суурийн хавдар, хүндэрсэн хэлбэрийн судасны цүлхэн зэрэг бусад эмгэгүүдийн үед хийх

Optogenetic control of central circuits and sensory perception

Riken BSI MURAYAMA

Top-down control of sensory processing by higher cortical areas is essential for sensory perception. Despite its importance, little is known about the mechanisms executing this control. Here, we report the identification and characterization of a neural circuit mediating top-down control in the mouse somatosensory system. The circuit comprises a long-range recurrent horizontal projection between S1 primary somatosensory cortex and M2 secondary motor cortex. Physiological recordings revealed that M2 top-down input provides temporally coincident input to the upper and lower layers of S1, initiating dendritic spikes and large firing of layer 5 neurons. Conversely, optogenetic inhibition of M2 top-down input in somatosensory cortex decreased L5 firing and lead to inaccurate perception of tactile surfaces. These data demonstrate that bottom-up and top-down inputs to somatosensory cortex initiate discrete temporal and spatial cortical processing mechanisms that shape dendritic activity in L5 pyramidal neurons and are necessary for the maintenance of accurate sensory perception.

Chronic Alteration in Network Activity Induces a Circuit-specific Homeostatic Remodeling in Mature Hippocampus

Kea Joo Lee
Department of Structure & Function of Neural Network, Korea Brain Research Institute (KBRI), Daegu 701-300, Korea

Network activity provokes bidirectional changes in synaptic efficacy to constrain neuronal output. However, it remains unclear how such adaptations are implemented without perturbing associative (Hebbian) plasticity-generated information potentially encoded as patterns of differential synaptic strength, especially in established networks. In this talk, I present that in mature hippocampal neurons *in vitro*, bidirectional homeostatic synaptic plasticity (HSP) of excitatory synapses occurred in a cell type- and a circuit-specific fashion. HSP occurred predominantly at proximal dendritic synapses that exhibited morphological, functional, and molecular signatures of the specialized contacts between mossy fibers of dentate granule cells and thorny excrescences (TEs) of CA3 pyramidal neurons. Chronic *in vivo* activity manipulation also selectively altered TE size. These results implicate that the mossy fiber-TE synapse serves as an independently tunable gain control locus that permits efficacious homeostatic adjustment of CA3 neurons, while preserving synaptic weights that potentially encode information at other synapses within the mature hippocampal circuit.

Keywords: synapse, plasticity, dendritic spine, AMPA receptor

Thalamocortical input onto layer 5 pyramidal neurons in primary somatosensory cortex

Jong Cheol Rah

The subcellular locations of synapses on pyramidal neurons strongly influences dendritic integration and synaptic plasticity. Despite this, there is little quantitative data on spatial distributions of specific types of synaptic input. Here we use array tomography (AT), a high-resolution optical microscopy method, to examine thalamocortical (TC) input onto layer 5 pyramidal neurons. We first verified the ability of AT to identify synapses using parallel electron microscopic analysis of TC synapses in layer 4. We then use large-scale array tomography (LSAT) to measure TC synapse distribution on L5 pyramidal neurons in a 1.00 × 0.83 × 0.21 mm^3 volume of mouse somatosensory cortex. We found that TC synapses primarily target basal dendrites in layer 5, but also make a considerable input to proximal apical dendrites in L4, consistent with previous work. Our analysis further suggests that TC inputs are biased toward certain branches and, within branches, synapses show significant clustering with an excess of TC synapse nearest neighbors within 5-15 µm compared to a random distribution. Thus, we show that AT is a sensitive and quantitative method to map specific types of synaptic input on the dendrites of entire neurons. We anticipate that this technique will be of wide utility for mapping functionally-relevant anatomical connectivity in neural circuits.

Brain Science, Mongolian's intelligence

Emeritus Professor Davaakhuu. S
Mongolian National University of Medical Sciences

The human brain is the core of the human biological elements. The all greatest creations of humankind are a product of the brain.

1. The most influential critical factor of humankind of development and prosperity, which is intelligence and there is a no way forward without giving priority to the intellectual field. Brain, about the wonders of his study that is should not be put aside. As a leading issue of country's development we should make a research regarding the education's fundament and learning basics of neurobiology.

Therefore there is big need to make a research and unify all the results of nowadays research about brain.

2. As a result of brain research from scientists here are the concepts about new directions;

- General principles of brain function
- Two hemispheres of the brain function, their characteristics and their relation with thoughts
- The gene of study desire
- The key gene of the chain reaction that makes temporary memory into long-term memory
- New fields of brain sciences and their brief introduction

3. About Mongolian intelligence

- Knowledge about our ancestry's brain;

- Thinking features of Mongolians
- Mongolians enlightenment, and enlightenment roots;

Ancient Mongolians educational system, content, structure and methods

Epidemiology of neurohereditary diseases in the population of some provinces (aimags) existence in south and central part of Mongolia

D.Baasanjav, Ya.Erdenechimeg, B.Chimeglkham, T.Sarantsetseg, B.Oyungerel, D.Bolormaa
Institute of Medical Science Mongolia
e-mail: mri_neuro@yahoo.com

Background: Our previous study has shown that the prevalence and structure of the neurohereditary diseases were different by provinces and some form of these diseases as "indigenous" in some isolated population. There are some scientific results of our researches– genetics about consanguineous, which is more potential factor of community is some area of Mongolia. All these circumstance is giving to carry out this study.

Materials and methods: We used descriptive epidemiological method for revealing hereditary neurological diseases in the population of 6 provinces (aimags) of Mongolia: Dornogobi (Easth-gobi), Sukhbaatar, Gobisumber, Central aimag, Bulgan, and Darkhan-Uul. Total population of these provinces is 363072. The number of population in 6 provinces was fluctuated in the range from 15.000 (Govisumber) to 88.875 (Darkhan-Uul). Prevalence was accounted for 100.000 population.

Results: The prevalence of neurohereditary diseases makes up 17.08 cases per 100.000 populations among these 6 provinces. 79% of these are hereditary neuromuscular diseases i.e 49 patients from 29 families. Myotonic dystrophia and genetic neuropathies Charcot-Marie-Tooth have comparative high prevalence over test forms of disease.

The high rate neurohereditary diseases was established in the population of Bulgan ($35.80 \bullet 10^{-5}$), Sukhbaatar ($31.17 \bullet 10^{-5}$), and Dornogobi ($21.33 \bullet 10^{-5}$) provinces. Their prevalence's prevailed in the 7-10 times over rates Darkhan-Uul, 3-5 times over rates of Gobisumber aimags.

No neuromuscular forms of neurohereditary diseases i.e spastic paraplegia (11.3%) and spinocerebeller ataxia (9.68%) accounts for 21% among all forms of neurohereditary diseases.

The prevalence of neuromuscular diseases in the population of these six provinces is two times high then the average rate of the population of Russia (1980 years). First reason is may be associated with high predisposition of based on consanguineous through reproductive way in some of these provinces of Mongolia.

Key words: neurohereditary diseases, myotonic dystrophia, hereditary muscular diseases

Some issues of cerebral infarction in Mongolian young adults

G.Tsagaankhuu[1], Ts.Delgermaa[2], D.Tuvshinjargal[1], A.Tovoodorj[1]
[1]Mongolian National University of Medical Sciences
[2]First Central Hospital, Dept. of Neurology, Ulaanbaatar

Background: Strokes occur much less frequent among young people than older individuals. However, strokes among young people have major impacts on the productively of individuals and society.
Objective: of this study is to determine the risk factors and etiological subtypes of cerebral infarction (Ischemic Stroke in young patients who were admitted to the First central hospital in Ulaanbaatar, Mongolia.
Methods: This paper is based on a review of hospital-based studies of patients who have suffered from a cerebral infarction in age range 20-49 years which was conducted from 2009 to 2013. Data regarding the onset of the cerebral infarction, clinical manifestations, and diagnostic test results of patients were examined during their hospital treatment as well as a modified Rankin Scale scores at discharge. Subtyping of cerebral infarction was conducted in accordance with the Trial of Org 10172 in Acute Stroke Treatment (TOAST) criteria.
Results: Out of 1289 patients admitted for cerebral infarction, 259 (20.1%) were in the 20-49 year age range and the male-to-female ratio was 1.3:1. The most common conventional risk factors were hypertension (39.8%), premature atherosclerosis (20.8%) and dyslipidemia (17.8%). Rare specific risk factors of cerebral infarction in young patients were migraine with aura combined with other risk factors including hypotension and cerebral vasculopathies. The majority of subtypes of cerebral infarction was undetermined (34.7%), followed by other determined etiologies (19.7%). Among the category of undetermined etiology, incomplete evaluation (71.1%) was predominant. Most of the patients demonstrated good functional outcomes, at the time of hospital discharge, 86.9% patients had Rankin Scale scores in the range of 0-2.
Conclusions: Young adults account for 20.1% of all patients with cerebral infarction in First central hospital in Ulaanbaatar. Risk factors including conventional and particularly specific causes which are relatively prevalent in young adults. Additionally, a high rate of the patients are categorized under conventional risk factors, and other determined and undetermined etiologies. Cerebral infarction in the young people requires a different approach to investigate and manage than strokes among the elderly given the differences in possible underlying causes. The results show the needs for persistent management of conventional risk factors and proper patient investigation to determine etiology of cerebral infarction in Mongolia.
Keywords: Cerebral Infarction; Subtyping; Young adult

Clinical features of symptomatic epilepsy after brain injury.

Amarjargal.M, Tovuudorj.A Department of Neurology MNUMS

Key words: Post traumatic epilepsy, focal seizure. seizure frequency, generalized seizure

Purpose: to study clinical features and variants of the course, significant predictive factors for symptomatic PTE

Methods: This was a descriptive, observational study of 109 PTE patients who came to district health associations in Ulaanbaatar and central first clinic from 2011 to 2013. We obtained the patients' history and conducted a questionnaire and clinical examination to evaluate seizures in accordance with a semiological classification of epileptic seizures and the international classification from the International League Against Epilepsy.[1,2] Clinical data was matched with the results of the electroencephalography (EEG), computed tomography (CT), and magnetic resonance imaging (MRI) investigations.

Results: Of the 109 patients, 85% (93) presented secondary generalized partial seizures (SGPS), 15% (16) with partial seizure, and 60.5% (66) with motor phenomena. Patients complained of headaches (51.1%), memory deficiency (18.8%), and neurasthenic symptoms (10.1%). There was no obvious correlation between symptoms, duration, and seizure type of PTE. The frequency of seizures was not correlated with the structural brain abnormalities, but there was inverse association ($r = -0.32$, $p<0.001$) between seizure free time and the duration of PTE. PTE was positively correlated with severe injury, contusion, early onset of seizures ($p<0.05$), and operative brain injury ($p<0.005$).

For 73.5% (80) of participants, tiredness precipitated seizures. If the patient has experienced over 5 years of prolonged seizure, it was precipitated by alcohol ($p<0.05$).

Conclusion: Clinical features of PTE is presented in partial (15%), secondary generalized seizure (85%), and motor phenomena (60.5%). PTE is characterized by long durations of high frequency of seizure (90%) and various clinical manifestation ($r = -0.32$, $p<0.001$). PTE is affected by factors such as severity and type of head injury, and an operative brain injury($p<0.05$).

Epilepsy genetic

Sansarmaa D.[1],Tovuudorj A.[2],Purevdorj.I[2]
MNUMS- Dornogobi MS[1], MNUMS – MS[2], Pharmacy School of pharmacy and Bio-Medicine[2]

Early reports on epilepsy go back to the ancient Assyrian and Babylonian texts, scanning a period of almost 4,000 years. Major advances in the understanding of epilepsy came much later, during the 18th and 19th century. The advent of the 20th century led to the in-depth understanding of the mechanisms of the disease, the development of effective drugs, and neuro-imaging methods.
Genetic era created the use of molecular methods in the Genetic solution.
Advances in the field of genetics of the epilepsies continue to develop as new genes are discovered and the functional consequences of the disease-causing mutations are unraveled.
For epilepsy several groups of genes are emphasized.

1. Na, K, Ca, Cl channel genes
2. Stimulation delay's neuromediator genes (GAMK, serotonin)
3. Receptor and carrier protein genes that support neuromediator molecules actively enter through neuron's membrane.

There are two main methods to study these genes:

A. Location mapping study
B. Complete genome screening

Through the method of complete genome screening several type of epilepsy genes location was established.
According to survey epilepsy is genetically variable (geterogen). For instance, Juvenile myoclonic epilepsy which is the most common among children and teenagers was related to 15q14, 6p11, 6q24, 8q24 locus. Identification of Ala322Asp mutation (5q34) was reported in Franco-Canadian families who were diseased by the autosomal dominant form that is the rare case of Juvenile myoclonic epilepsy. Research work that using Complete genome screening method has proved that Families who had various forms of Generalize idiopathic epilepsy were associated with 14q23, 2q36, 3q26 locus. It shows that when this type of epilepsy is developed at least 3 locus' are demanded to involved. Therefore it means most of epilepsy types have polygenic inheritance. It makes research of epilepsy genetic difficult. Some of epilepsies are established by expans mutation. For instance, 12 nucleotid that named CCCCGCCCCGCG repeated 35-80 times (normally repeated 2-3 times) on the region 21q22.3 of the Delayed myoclonic epilepsy. It begins early and occurs severe for the next descenders due to expans frequency is prolonged to the next-generation. Advances in the understanding interactions between gene-gene and gene-environment make possible for facilitate diagnosis, right prevention, choose best treatment based on individual's genotype feature.
Finally the term of "epilepsy" includes variety of clinical and genetic epilepsy. Those genetic epilepsies that mentioned in this study are not completely studied.

Results of cognitive-behavioural therapy, risk factors and some clinical symptoms for somatization disorder

B. Jargal1, N. Altanzul1, Z. Khishigsuren1 MNUMS, School of Medicine, Mental Health Department[1]

Background: Among the general population, there is a subgroup of patients with somatization disorder characterized by several disparate physical symptoms that are not fully explained by general medical investigations. These individuals visit many doctors and undergo numerous physical examinations and diagnostic tests, but no physical evidence can be found. Majority of these kinds of complains more common reveal among the patients in the primary health care practice.

According to the comparative benchmark result 2013 to 1992 on the research prevalence of common mental disorder among the population of Mongolia , stress related mental disorder increased 10 times thereupon somatization disorder revealed in 2 % of population.

Goal: The objective of this study is to identify and illustrate risk factors and common clinical symptoms indicative of somatization disorder and thus describe the received medical service related to special features of disorder and to identify results of cognitive-behavioral therapy among somatization disorder.

Methodology: A total of 73 patients with somatization disorder and 148 matched healthy controls were involved in this case control and clinical trial study. In addition, qualitative research was conducted as part of the semi-structure questionnaire. All of these 73 patients were already seeking and receiving medical and non-medical care at least 6 times in the past 2 years. – All of these 73 patients already, were been seeking and receiving medical and non-medical care at least 6 times in the past 2 years.

Result: The final selected this study sample who were interviewed and comprised of 168 (76%) female and 53 (24%) male patients, ages between 21-78 (40.9±10.93) years old. The average age is 40.9±10.93. Average put in time for medical care 9.1±8.3 years , average medical admission 12.2±8.33 in last 2 years, average medical tests 20.1±11.9,average amount of money for medical care 4.281.818.2±7.411.896.03. Permanent negative memory of life experience (OR 15.82) (P утга 0.001), terrifying news (OR 15.82) (P утга 0.01), loss of loved one (OR 2.49) (P утга value 0.066) correlating to somatization disorder. Somatization disorder occur more common among the patients with hyperesthesia, hyperpnoea and physical exhaustion. Somatic symptoms decreased 4-5 times, which revealed before cognitive-behavioral therapy is statistical importance. The statistical importance of this study is somatic symptoms decreased 4-5 times after the CBT thus revealed before the cognitive –behavioral therapy.

Conclusion:

1. Risk factors of somatization disorder are followings; financial difficulties, loss of permanent negative memory of life experience
2. A variable constellation of autonomic symptoms, such as hyperesthesia, hyperpnoea and physical exhaustion reveal most frequently along with somatization disorder.

3. People with somatization disorder visit various doctors many times and undergo numerous physical examinations and diagnostic tests, lay out large amount of money for medical treatment.
4. Somatic symptoms decreased 4-5 times after the cognitive behavioral therapy , which revealed before the therapy

Key words: Somatization disorder, risk factor, clinical symptoms, cognitive-behavioral therapy

Time series analysis results on fatal suicide cases among Ulaanbaatar population in 1992-2014 years

Oyunsuren D, Khishigsuren Z
Department of Mental Health, SOM, MNUMS
oyunsuren.d@mnums.edu.mn

Introduction: Suicide is considered an important public health problem and is one of the main leading manners of death among the most productive age group (15–44 years) in worldwide and Mongolia. Time series analysis is resorted to for knowing the trend of an event, forecasting future for planning. Here time is the variable. Time series analyses were extensively used in biostatistics.
Goal: To examine the relationship between Ulaanbaatar suicide cases and some meteorological factors (air temperature, humidity and pressure).
Material and methods: Trends of suicide cases and meteorological values were evaluated by moving averages time series analysis (ARIMA Model). Suicide cases and meteorological factors were subjected to Pearson Correlation Coefficient and p value.
Results: Totally 4168 fatal suicide cases were registered among Ulaanbaatar population from 1992 to October, 2014 years and 82.8% of those were male. Average age of suicide completers was 33.41±12.520; male aged 20-34 and female aged 15-29 were more completed suicide (CI 95%, t=130.981, p≤0.000). High fatal suicide cases (n=384) was registered in 2005 and low cases (n=36) was in 1996. Most of fatal suicidal behavior cases are registered in spring time, particularly in March, April and May (CI 95%, t=50.070 p≤0.000). Month's average air temperature was 16.1±14.15°C; average air humidity was 870.6±3.62 mmHg and average air pressure was 54±17.99%. The correlation between month's air temperature and fatal suicide cases was statistically no significant (r^2=0.385, t= -0.475, p≤0.635). But the correlation between month's air humidity (r^2=0.422, t= 4.308, p≤0.000) or air pressure (r^2=0.45, t= 5.789, p≤0.000) and fatal suicide cases were statistically significant by (ARIMA 1,0,0).
Conclusions: Trend of fatal suicide cases among Ulaanbaatar population was increased to 2005 and decreasing to present time. The finding of a positive correlation between fatal suicide cases and some meteorological factors (month's air humidity and air pressure) requires further probing with individual components.

Clinical issue of bipolar disorder

Gantsetseg T, Altanzul N, Jargal B, Dolgorsuren S, Oyunsuren D, Khishigsuren Z
Department of Mental Health, School of Medicine, MNUMS
Gantsetseg.t@mnums.edu.mn

Introduction: According to literature the prevalence of bipolar affective disorder in the world is about 3% and it is differently by nationality and men and women. Bipolar affective disorder starts in late of adolescence and clinical symptoms continues about 20 to 30 years. In Mongolia, although there are studies about clinical symptoms of bipolar affective disorder which had done under a name of depression or manic syndrome respectively, there is no complex study about this disorder.
Purpose: We aimed to study about some influence factors, common clinical symptoms, incidence of dangerous acts to others, diagnostic delay, disability and risk of suicide of bipolar affective disorders.
Methods: This study is cross-sectional study used purposive sampling model. We conducted our study in clinical departments of National Center for Mental Health. We collected patient history from participants by subjective and objective anamnesis and by interviewing we determined the mental status of participants and we filled 546 item-questionnaire cards with 35 subsections on each of them. Also we used data logging method to collect data from clinical records of archive and outpatients control cards.
Results: Our study included in total 112 patients with mean age of 42.05±0.97 years, ranging from 14 to 62 years; 31(27.7%) were male and 81(72.3%) were female. Only 4.5% (n=5) of participants had no diagnostic delay or sought help and got treatment from psychiatrist within a month and 95.5% had length of diagnostic delay more than a month. But mean age at symptom onset of patient-related diagnostic delay was 27.9±0.8 which means older age at onset is significantly to patient-related delays (*P*value 0.011). Mostly occurred influence factors in start or relapse of bipolar affective disorder were psycho trauma like family conflict (n=73, 65.2%), family alcoholism (n=46, 41.1%), being jobless (n=72, 64.3%) and etc. Also, 53.6% (n=60) out of the total 112 participants had a hereditary history of mental disorder and by drawing the hereditary picture, it might be inherited due to incompletely expressed autosomal dominant gene. According to comparison between disability and clinical types of bipolar affective disorder, efficiency of bipolar clinical types to disability were differently (Pvalue 0.009) and statistically significant.
Conclusion: Mostly occurred influence factors in start or relapse of bipolar affective disorder were psycho trauma like family conflict, family alcoholism and being jobless and also it might be inherited by unrelated with sex, incompletely expressed autosomal dominant gene.
Key words: mania, depression, delay, disability

Stigmatization and discrinimation towards mental patients

Dolgorsuren S, Gantsetseg T, Oyunsuren D, Khishigsuren Z
Department of Mental Health, School of Medicine, MNUMS

Background: According to the WHO reports (2001), mental health and behavioral disorders are main health problems worldwide and constitute about 10-12% of the global burden of diseases. It should be increasing to 15% in 2020. Currently, 1 in 4 people in the world are suffered from any mental disorders and 5 of 10 diseases, which lead to disability, are mental disorders. However 25 of 100 people with mental health problems among total population, are able to get any mental health care, but 75 mental patients have not been able to get any level of mental health care. It is associated with lack of individual mental health education and knowledge; high level of misunderstanding or misconceptions about mental health. Stigmatization and discrimination towards mental patients due to misconceptions about mental illness, is leading mental patients to hide and refuse from any medical assistance.

Goal: To define current situation of stigmatization and discrimination towards mental patients.

Method and material: The survey was conducted in National Center for Mental Health and Narcology Center from June to December, 2014. A cross-sectional descriptive study was carried out among mental out or inpatients, aged 18-55 suffering from common mental disorders and sample size of 450 was drawn from total in or outpatients, who seeking care from National Center for Mental Health and Narcology Center using a random sampling technique.

Results: Totally 450 (male 52.2%, n=235; female 47.8 %, n=214) subjects, aged 18-66 years were participated in our survey and average age was 39.7 ± 0.4. Most of participants (73.3% n=330) are unemployment due to their mental diseases and only 16% (n=36) are employees. 77% (n=346) of total participants were urban people and 23 % (n=104) were living in rural areas. 34,4% of them are married, 16,9% are divorced, 5.1% are widowed, 27.1% are single, and 15.8% are never married. 86 (19%) of total 450 participants are answered, that they are attempted suicidal behaviors at least one time in their life and 1.1% of those patients are attempted 10 times. 30.2 % of those attempts caused due to stigmatization and discrimination from others, particularly as their family member's pressure (x^2=476.986; p≤0.000). Participants, who are attempted suicidal behaviors were diagnosing as F31.0 (36%, n=31); F20.0 (29%, n=25); F10.0 (13.9%, n=12), F07.8 (11.6%, n=10) and F70.0 (9.3%, n=8). Correlation between diagnosis of patients and frequency of suicide attempts was statistically significant (x^2=44.281; p≤0.000). 62% (n=279) of total 450 subjects are answered, that they have any label or marker from their family, friends and society. The relationship of prejudice and social distance with the other factors were analyzed using multivariate regression analysis. Due to mental patient's feelings, such as denial from them, avoid help or support them, to be socially misunderstood, loneliness (58.2%), fear and produced strong negative emotions as fear (r=0.672), shame (50.6%; r=0.767), others angry or frustrated (38.4% ; r=0.469). Individual social distance on mental illness is not only determined by individual factors but also influenced by the surroundings. In other words, social distance differs from prejudice in terms of influence of contextual characteristics (r=0,639) with statistically significant (p≤0.000).

Conclusion:

1. Of total subjects, 62% were stigmatized from their family, friends and society and it is related to diagnosis of mental patients
2. Due to mental patient's feelings, such as denial from them, avoid help or support them, to be socially misunderstood, loneliness (58.2%), fear and produced strong negative emotions as fear, shame (50.6%), others angry or frustrated (56.8%; 38.4%).
3. Social distance is not just a matter in the individual level so that we could tackle structural discrimination to improve the public's attitude.

Keywords: Discrimination, stigma, mental patient, society, social distance,

Psychological factors on employee productivity in Mongolia

Enkhjargal Tsoodol
National Psychology Center

Background: As people spend most of their time and energy in workplace, employee productivity has become a major challenge to understand. Only few researches conducted to assess the psychological factors affecting employee productivity. This study was to determine how "soft skills" such as adapting with others emotionally or understanding customer could affect the productivity level of employees. We determined six factors influencing people at work; personality, emotional capacity, lifestyle, leaders' influence, company culture and motivation for working. Our assumption was that the employee productivity level changes in relation to these six factors.
Methods: Study sample consisted of 772 employees working in mining, communication, manufacturing, trading and financial service. 360 degree feedback survey was taken from the managers of each employee in order to determine employee productivity level.
Results: Our study concluded that employees who were more productive had better lifestyle, were more immune to negative behaviors at work, put more time to personal development, were more likely to receive support from others, matched their life purpose with team purpose and were emotionally more competent in communication.
Conclusions: Even though, our research was first of its kind to bring psychological perspectives to employee productivity; we have now specific factors to study further and build more culture-specific skill development programs to increase productivity.
Key words: Productivity, employee psychological capacity, organization's psychological management

Psychological issues facing high school students: analysis on comparison study and intervention program

Delgermend Tserendamba
National Psychology Center

Background: Environment where the family resides influences the children's behavior and psychological competence. This statement has been the major stereotype in mongolia to make decisions related to education. We conducted the assessment to determine if there was difference in psychological competence between students living in downtown and suburb areas.
Methods: 160 students aged 14-17 years from 2 high schools in two areas and 160 parents were surveyed. Students' psychological competence included personal attitude toward 13 conditions, social adaptability, level of anxiety and happiness. Parents were surveyed on level of attention and requirement they provide to their children.
Results: The assumption that students differ in psychological competence based on where they reside was not supported. The difference between two locations was not significant in self-esteem, positive attitude toward family and friends. On the other hand, all students scored low in understanding others' value. Student's anxiety level was high. There was a high correlation between parent's positive attention and student's self-esteem (r=0,342**) while the defensive communication between parents was positively correlated to risk of negative behavior (r=0.360**).
Conclusions: Stereotypes in society need to be examined more often to lower the discrimination against one another. The location where family lives was not the determinant of the student's psychological competence. However, the family culture where children thrive influenced the competence level of psychological skills.
Keywords: Adolescents, psychosocial competence, stereotype

The study of the attachment style of adolescent children with at-risk behavior to their parents

Bayarmaa Tsend
MNUE

The studies on why children gain at-risk behavior (who are at risk of committing crimes) have not been combined and explained from the attachment theories. Attachment theory is a psychological model that attempts to describe the dynamics of long-term interpersonal relationships between humans, more specifically, how human beings respond within relationships when hurt, separated from loved ones, or perceiving a threat. John Bowlby and Mary Ainsworth found that this relationship plays an important role to facilitate children's mental health, cognitive development, trusting or untrusting others, adaptation to their surroundings, learning actions, and communicating others. They have identified three different attachment classifications in children: secure attachment, anxious-ambivalent attachment, and anxious-avoidant attachment.

The study shows that the adolescent-parent attachment style influences on children to gain at-risk behavior. The first stage of the study aimed at identifying what indicators could be used to classify children with at-risk behavior, while conducting surveys and interviews among class tutors, social workers, and education managers from schools and child protective investigators from districts. At the next stage of the study, we identified at-risk adolescents. We had a random selection from 200 at-risk adolescents from 6 UB schools, and selected 32 male and 34 female children for the two categories: children must be 15 year old and live with their parents. The result of the study shows that the rate of adolescents with anxious-ambivalent attachment and anxious-avoidant attachment was quite high. Especially, the anxious-ambivalent attachment rate of adolescents who live with their fathers was r=0.796. Finally, the study proves that the evolutionary basis of communication and child-parent relationship greatly depend on how children's attachment patterns have been developed.

Introduction to Psychosomatic Medicine

Tetsuya Hiramoto, M.D., PhD.
Chief Doctor of the Department of Psycosomatic Medicine, National Hospital Organization, FUKUOKA HOSPITAL

The Japanese Society of Psychosomatic Medicine (PSM) was founded as Nihon-Seishin-Shintai-Igakukai on November 30 1959 at Kyushu University to promote the study of psychosomatic medicine, an academic discipline that focuses on the relationship between the mental and physical aspects of illness.
The characteristic of PSM is, I think, that we can treat patients with having several viewpoint, such as mental (mind) - body(physical) -behavioral aspect, biological - psychological - social factor, etc. There are many cases we cannot treat or cure only having one viewpoint.
I would like to introduce how PSM doctor see and treat patient, and show the importance of having multiple viewpoints.

Coro-Heart Medicine – a new psychological intervention

Tetsuya Hiramoto, M.D., PhD.
Chief Doctor of the Department of Psycosomatic Medicine, National Hospital Organization, FUKUOKA HOSPITAL

When we treat patients, we often understand we need to treat heart (mind) and body separately.
The body is moving and maintained by Solar Energy (calorie; made of glucose and oxygen), while, we need other special energy when we want to do something; we behave, or we make action.
Without understanding the differences, we cannot treat the patients suffering from PSM symptoms.
The term of "mind" containing the contents of brain, and the term of the "Heart" isn't explain the content of "mind", "spirit", and/ or "soul", besides, the "Heart" often explains the organ send blood around the body, so we need to have new simple word which only explain "heart" "spirit" and/or "soul" in the medical field.
Thus in this lecture we (Dr. Battuvshin and I) show the new term "Coro-Heart"; it doesn't include the contents of organ. Using this new word, let's try to think the meaning of the "Coro-Heart" and the "body", and try to understand the meaning of two energies "Kokoro-Energy" and "Solar Energy".

Development of Neuroimaging in Mongolia

D.Tuvshinjargal[12], D. Munkhbaatar[1], S.Badamsed[3], D.Gonchigsuren[4]
1- MNUMS, Department of Radiology, 2- Department of Radiology, Ulaanbaatar Songdo Hospital, 3- The Third Central Shastin Hospital, 4- GrandMed Hospital

First X-ray equipment was introduced in 1934 at the State Central Hospital(currently the First State Central Hospital), with V.S. Sokolov, P.S. Omelchenko and Nodagt as first radiologists & radiology technician in Mongolia. First X-ray equipment in Mongolia was produced in USSR "Burevestnik" factory. Fist X-ray examinations included fluoroscopy and radiographs of chest, stomach, esophageal, head, joint.
During the Khalkhin-Gol military conflict, a mobile military hospital with transportable X-ray was organized, and for the first time X-ray studies were carried out outside of Ulaanbaatar. After this conflict, additional X-ray facilities were opened at People's Hospital, Internal Affairs' Hospital in Ulaanbaatar, and in Bayan-Tumen, Khovd and Ulyastai towns. Untill 1960s, the Ministry of Health provided X-ray machines to every provincial central hospital, to all high-qualified hospitals; after 1962 even inter-soum hospitals started to receive their first X-ray machines.
In 1969 by the initiative of the academician T.Shagdarsuren, the first angiographic suit was purchased for the Third State Hospital(currently The Third Central Shastin Hospital). It was an "ELEMA - Shanonder" apparatus of Swedish company, which allowed to make 10-20 radiographs in 2-positions.
First open carotid artery insertion was performed by J.Khairullaa in 1969, then in 1970 B.Oyun performed first direct puncture of the carotid and axillary arteries. In 1995. P.Boldbat performed first angiographic study of extra-and intracranial arteries by Seldenger method through a.

femoralis. These were first milestones in the development of the neuroimaging as subspeciality in Mongolia.

In 1975, first and till the modern time single Nuclear Medicine Department was opened at the First State Central hospital under the supervision of P.Onkhuudai. Here the first radioisotope studies of brain was introduced in the late 1980s. The latest upgrading of its equipment was in 2014, when two-head SPECT machine was installed.

Beginning from the mid1980s, further essential for the neuroimaging examinations such as Doppler sonography (B.Oyun et al), Computed tomography (R. Purev et al)were introduced in Mongolia. First CT was presented by Japan in 1986 November 26 at the Department of Radiology at the Third Shastin Hospital. FirstCT examinations were interpreted by the legend of Mongolian Radiology, academician, People's Doctor R. Purev.

High-field MRI examinations were introduced in 2007 November 13 at the Ulaanbaatar Songdo Hospital. Currently 6 MRI facilities are operating in Ulaanbaatar city, from them 5 are of 1.5T strength and 4 are installed after 2012.

This year Mongolian Radiological Society celebrates its 20th anniversary, joined by its satellite societies of Mongolian Society of NeuroImaging (founded in 2008), Mongolian Society of NeuroImaging,Head& Neck(founded in 2011), Mongolian Society of Magnetic Resonance in Medicine and Biology(founded in 2012).

"NeuroImaging 2014" 2014-08-21

Neuroimaging of the brain tumor

D.Munkhbaatar MD.,PhD
Department of Radiology, School of Medicine, MNUMS

Analysis of a brain tumor: Age of the patient, Localization, Intra vs extra axial, What compartment
Midline crossing, CT and MRI characteristics, Calcification, Fat, Cystic, Contrast enhancement
Effect on surrounding structures, Mass effect, Edema, Solitary/ Multiple, Pseudotumor

Incidence of CNS tumors

Roughly one-third of CNS tumors are metastatic lesions, one third are gliomas and one-third is of non-glial origin. Glioma is a non-specific term indicating that the tumor originates from glial cells like astrocytes, oligodendrocytes, ependymal and choroid plexus cells. Astrocytoma is the most common glioma and can be subdivided into the low-grade pilocytic type, the intermediate anaplastic type and the high grade malignant glioblastoma multiforme (GBM). GBM is the most common type (50% of all astrocytomas). The non-glial cel tumors are a large heterogenous group of tumors of which meningioma is the most common.

Age distribution

The age of the patient is an important factor for the differential diagnosis. Specific tumors occur under the age of 2, like choroid plexus papillomas, anaplastic astrocytomas and teratomas. In the first decade medulloblastomas, astrocytomas, ependymomas, craniopharyngeomas and gliomas are most common, while metastases are very rare. When they do occur at this age, metastases of a neuroblastoma are the most frequent. In adults about 50% of all CNS lesions are metastases. Other common tumors in adults are astrocytomas, glioblastoma multiforme, meningiomas, oligodendrogliomas, pituitary adenomas and schwannomas. Astrocytomas occur at any age, but glioblastoma multiforme is mostly seen in older people.

Tumor spread

Intra- versus Extra-axial

When we study an intracranial mass, the first thing we want to know is whether the mass lies in- or outside of the brain. If it is outside the brain or extra-axial, then the lesion is not actually a brain tumor, but derived from the lining of the brain or surrounding structures. 80% extra-axial lesions, meningioma or schwannoma. In an adult an intra-axial tumor will be a metastasis or astrocytoma in 75% of cases.

Sign of an extra-axial origin: broad dural base or a dural tail of enhancement (meningiomas), bony changes (chordomas, chondrosarcoma, metastases) they can also be secondary, as is seen in meningiomas and other tumors. Extra-axial tumors are not derived from brain tissue and do not have a blood-brain-barrier, so most of them enhance homogeneously.

Intra- vs Extra-axial

The differentiation between intra-axial versus extra-axial is usually straight forward, but sometimes it can be very difficult and imaging in multiple planes may be necessary.

Subarachnoid seeding

Some tumors show subarachnoid seeding and form tumoral nodules along the brain and spinal cord.

This is seen in PNET, ependymomas, GBMs, lymphomas, oligodendrogliomas and choroid plexus papillomas.

Primitive neuroectodermal tumours (PNET) form a rare group of tumors, which develop from primitive or undifferentiated nerve cells. These include medulloblastomas and pineoblastomas

Local tumor spread

Another important consideration is the effect on the surrounding structures. Primary brain tumors are derived from brain cells and often have less mass effect for their size than you would expect, due to their infiltrative growth.

Midline crossing

The ability of tumors to cross the midline limits the differential diagnosis.

Glioblastoma multiforme (GBM) frequently crosses the midline by infiltrating the white matter tracts of the corpus callosum. Radiation necrosis can look like recurrent GBM and can sometimes cross the midline. Meningioma is an extra-axial tumor and can spread along the meninges to the contralateral side.

Lymphoma is usually located near the midline. Epidermoid cysts can cross the midline via the subarachnoid space. MS can also present as a mass lesion in the corpus callosum. The differential diagnosis for these cortical based tumors includes oligodendroglioma, ganglioglioma and Dysembryoplastic Neuroepithial Tumor (DNET). A DNET is a rare benign neoplasm, usually in a cortical and temporal location. Patients with a cortically based tumor usually present with complex seizures

CT and MR Characteristics

Fat - Calcification - Cyst - High density

Fat has a low density on CT (- 100HU). On MR, fat has a high signal intensity on both T1- and T2WI. On sequences with fat suppression fat can be differentiated from high signal caused by subacute hematoma, melanin, slow flow. When you see high signal on T1WI always look for chemical shift artefact, as this indicates the presence of fat. The chemical shift artefact occurs as alternating bands of high and low signal on the boundaries of a lesion and is seen only in the frequency encoding direction.

Fat within a tumor is seen in lipomas, dermoid cysts and teratomas. Some tumors can have a high density on CT. This is typically seen in lymphoma, colloid cyst and PNET-MB (medulloblastoma).

Perfusion Imaging: Perfusion imaging can play an important role in determining the malignancy grade of a CNS tumor.

Perfusion depends on the vascularity of a tumor and is not dependent on the breakdown of the blood-brain barrier.

Blood brain barrier: The brain has a unique triple layered blood-brain barrier (BBB) with tight endothelial junctions in order to maintain a consistent internal milieu. Contrast will not leak into the brain unless this barrier is damaged.

Enhancement is seen when a CNS tumor destroys the BBB. Extra-axial tumors such as meningiomas and schwannomas are not derived from brain cells and do not have a blood-brain barrier. Therefore they will enhance. There is also no blood-brain barrier in the pituitary, pineal and choroid plexus regions.

Some non-tumoral lesions enhance because they can also break down the BBB and may simulate a brain tumor. These lesions include like infections, demyelinating diseases (MS) and infarctions.

A systematic anatomic approach to differential diagnosis of a sellar or parasellar mass

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

Systematic approach to the pituitary region is crucial as small lesions can have a profound impact on the patient, and can be subtle even on high quality dedicated MRI imaging. Successful assessment of the pituitary region relies not only on a clear understanding of the local anatomy but also of the relatively wide variety of pathologies which occur in the region.
Imaging protocol: A typical targeted MRI examination of the pituitary region includes coronal and sagittal small field of view T1 and T1 post contrast images, as well as dynamic contrast enhanced coronal images, which are critical for the identification of small microadenomas. T2 weighted sequences are often also included, although are of relatively little added benefit.
Normal appearance on MRI: Before being able to interpret MRIs of the region it is important to understand the normal anatomy of the pituitary gland and surrounding structures:

- Pituitary gland
- Pituitary stalk
- Optic chiasm
- Hypothalamus
- Carotid artery
- Cavernous sinus
- Meninges
- Sphenoid sinus

The pituitary gland's anterior and posterior parts are distinct on MRI. The anterior part is isointense on both T1 and T2 weighted images. The posterior pituitary has intrinsic high T1 signal, and is of hypointense signal on T2 weighted images [1]. During the dynamic contrast enhanced sequence, contrast can be seen to wash into the gland from the infundibulum and gradually spread to the more peripheral parts of the gland.
Age dependent changes: The pituitary gland volume changes depending on hormonal status and what would be a normal gland in one demographic would be grossly abnormal in another.
Generally speaking, young adults have larger glands than older individuals, and hormonally active individuals (puberty / pregnancy) have the largest glands. These plump glands completely fill the pituitary fossa, and have a convex upper border, whereas older individuals will have a largely empty pituitary fossa, with a deflated and thinned gland lying in the floor of the sella.
Although one should always be wary of measurements, they can serve to quantify what may otherwise seem overly subjective impressions. These are reasonable maximal figures for the height of the gland:

- children (<12 years): 6mm (upper surface flat or slightly concave)

- puberty: 10mm (upper surface convex; more striking in females)
- young adult
  - male: 8mm
  - female: 9mm
  - pregnancy: 12mm
- older adult (> 50 years): gradually decreases in size

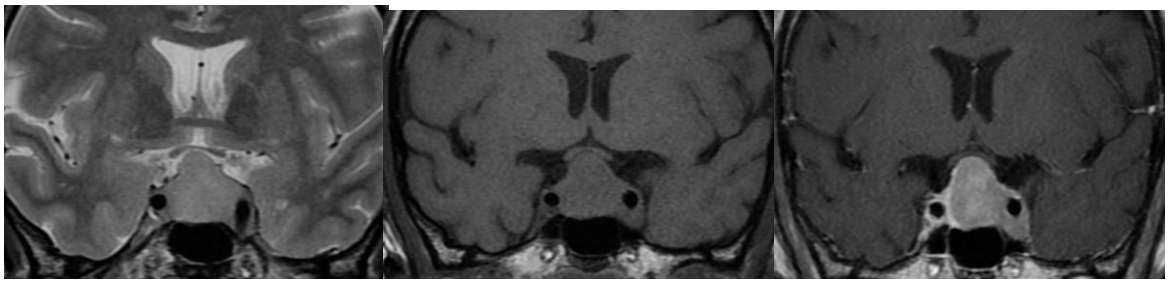
Pituitary Gland: On a coronal section through the brain the reference structure is the pituitary gland which lies in the sella turcica. The most common abnormalities that arise in the pituitary gland are pituitary adenoma, Rathke's cleft cyst and craniopharyngioma.

Pituitary adenoma are primary tumours that occur in the pituitary gland and are one of the most common intracranial neoplasms.

Depending on their size they are broadly classified into:

- Pituitary microadenoma: less than 10 mm in size
- Pituitary macroadenoma: greater than 10 mm in size

Although this distinction is largely arbitrary, it is commonly used and does highlight an important fact: small intra-pituitary lesions (microadenomas) present differently and have different surgical and imaging challenges than larger lesions (macroadenomas) that extend into the suprasellar region. As such, it is not unreasonable to discuss them separately. This article is a general overview.



Pituitary stalk: The next structure to identify is the pituitary stalk. This is a vertically oriented structure which connects the pituitary gland to the brain. It is thinner at the bottom and thicker at the top.

Embryologically, it is also derived from Rathke's cleft epithelium and therefore the pathologies, which can arise in the pituitary gland can also arise in the stalk. There are a few unusual things to be considered in children, such as germinomas and eosinophilic granulomas. In adults metastases and occasionally lymphoma can arise in the pituitary stalk.

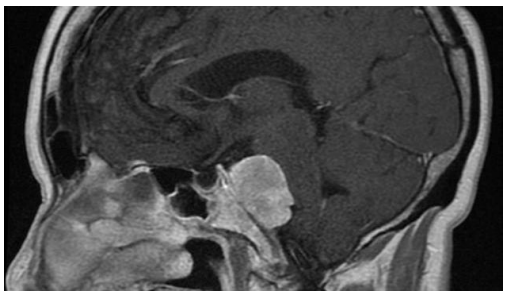
Optic chiasm: Another major structure in the suprasellar cistern is the optic chiasm. It is an extension of the brain and looks like the number 8 lying on its side. It is glial tissue - therefore the most common tumors to originate here are gliomas.

Hypothalamus: Further cephalad lies the base of the brain, which at this location is the hypothalamus.

Anatomically the hypothalamus forms the lateral walls and floor of the third ventricle. The most common pathologies to arise here are gliomas - in children hamartomas, germinomas and eosinophilic granuloma.

Carotic artery: A very important structure in this area is the internal carotid artery. It runs a complex anatomic course as it passes through the skull base shaped like an S on lateral

views. Aneurysms and ectasias are pathologies that can arise here. One must also be aware of congenital variations in the course of the internal carotid. Sometimes it is very medially positioned and can actually lie in the midline.
Cavernous sinus: The cavernous sinus is a paired complex of venous channels. In the lateral wall of the sinus run nerve III (oculomotorius), IV (trochlearis), V1 and V2 (trigeminus). The sixth cranial nerve (abducens) runs more medially and is located caudal to the carotid artery. The most common pathologies occurring in the cavernous sinus include schwannomas arising from the cranial nerves and inflammation, which can lead to thrombosis.



Meninges: The meninges cover the cavernous sinus. They are thicker laterally and superiorly than medially and inferiorly. The most common tumor to arise from the meninges is of course the meningioma. Dural metastasis is the second most common tumor to arise here.

Paraventricular NUCB2/nesfatin-1 is directly targeted by leptin and mediates its anorexigenic effect

Darambazar Gantulga
Department of Basic Science, School of Pharmacy and Biomedicine, MNUMS

An adipokine leptin plays a central role in the regulation of feeding and energy homeostasis via acting on the hypothalamus. However, its downstream neuronal mechanism is not thoroughly understood. The neurons expressing nucleobindin-2 (NUCB2)-derived nesfatin-1 in the hypothalamic paraventricular nucleus (PVN) have been implicated in feeding and energy homeostasis. This study aims to clarify novel role of hypothalamic paraventricular NUCB2/nesfatin-1 neuron in the leptin signaling pathway.
To clarify physiological role of endogenous NUCB2/nesfatin-1 in PVN, we used adeno-associated virus (AAV) vectors encoding short hairpin RNAs targeting NUCB2 (AAV-NUCB2-shRNA). Effect of central injection of leptin on food intake, body weight and NUCB2 mRNA expression is investigated using physiological and molecular biological tools. Cytosolic calcium concentration ($[Ca^{2+}]_i$) in single PVN neuron is measured to determine direct effect of leptin, followed by identification of neuron species by immunocytochemistry.
PVN-specific NUCB2 knockdown resulted in increases in food intake during light phase and body weight gain without affecting energy expenditure. Furthermore, the anorexigenic ability of leptin injected centrally and peripherally was impaired in mice injected with AAV-NUCB2-shRNA. Moreover, leptin markedly increased NUCB2 mRNA expression in PVN *in vivo* and *in vitro*. Leptin evoked Ca^{2+} signaling in single NUCB2/nesfatin-1-containing neurons isolated from PVN.
PVN NUCB2 knockdown results in obesity and hyperphagia demonstrating NUCB2/ nesfatin -1 expressing neurons in the PVN plays an essential role in regulation of energy balance. Moreover, this study shows that the PVN NUCB2/nesfatin-1 neuron is the direct and major target for leptin,

and substantially mediates the anorectic action of leptin. These findings provide important implications regarding the signaling pathway by which leptin regulates energy balance and metabolism.

Outcome and results of Dowling's surgery for removal of helminthic brain cyst

Khusayan.Kh, M.D Neurosurgeon, clinical professor, Agvaanjigmed.LM.D Neurosurgeon, clinical professor, Tugbayar.TsM.D Neurosurgeon, clinical professor, Abay.SM.D Neurosurgeon, Batbold.B M.D, M.M Neurosurgeon, Orkhontuul.SH M.D, M.MNeurosurgeon

Background: *Echinococcusgranulosus*is a parasitic helminth to definitive host of carnivorous small intestine. Larva of echinicoccus is capable to infecting in chest and abdominal cavity of intermediate host - herbivorous animals. During breeding, the helminth transmits actively through anus to mouth of a human. In intestine, external sheath of larva is digested. Then invading into blood circulation through intestinal wall, within brain it forms double-walled, fluid containing cyst.
Due to increasing of morbidity and reinfection rate of echinococcal brain cyst, this trial aids to use newer method to fight morbidity.
Method and Results
In our study, 120 cases from 2000 to 2014 are included for contrast of conservative and newer method. Echinococcal brain cyst proportion within focal brain disorders is about 1-2%. Commonly cyst is located in parietal, frontal and temporal lobes. 80-90% of cases are 5-8 years old aged children. Sex ratio male to female is about 2:1. Total pericystectomy method of Dowling's starts from removal of less tension area of cyst to brain.

- Insertion point of tube for saline injection should be close to less tension area of cyst and gradually compressed
- Saline injection is performed until the wall of cyst is completely removed from brain parenchyma without any rupture

Discussion: In prospective observation of 6 months, newer method had no recurrence and complications. While conservative method for removal surgery had about 38% of recurrence. This study shows that Dowling's method is effective surgical treatment of echinococcal brain cyst.

Defect of proteoglycan synthesis embodies a cause of the marfan syndrom

Sevjidmaa Baasanjav[1,2], Katrin Hoffmann [1]
1. Martin-Luther-University Halle Wittenberg, Institute for Human Genetics
2. Mongolian National University of Medicine, School of Pharmacy and Bio-Medicine, Department of Physiology

The Marfan syndrome is a neuromuscular disorder of the connective tissue, which is autosomal dominantly inherited. Furthermore, its clinical manifestations are aortic aneurysms, bicuspide aortic valves, mitral valve prolapses, skin elasticity alterations and skeletal anomalies.

The pathophysiological mechanism is the decreased stability of the connective tissue. It has been previously shown that the Marfan syndrome is heterogeneous and mainly caused by mutations in fibrillin 1. These mutations are still not examined to the fullest, therefore we cannot explain these alterations in the elasticity yet.
Our study examines the following 4 genes: *B3GAT3, EXT1, EXT2, EXTL3*, which are linked to the biosynthesis of fibrillin. Eventually, we found pathogenic mutations in the *EXTL3*-Gen, which encodes glucosyltransferase and detected altered enzyme activity in these mutant cells.
In conclusion, alterations of the proteoglycan synthesis including descreased glucosyltransferase activity impact the elasticity and stability of the connective tissue.
This decreased glycosyltransferase activity embodies a further cause of the Marfan syndrome, which causes bicuspide aortic valves and aortic aneurysms.
Key Word: Marfan Syndrome

Correlation between s100 protein-immunopositive cells and survival time in traumatic brain injury

Uurtsaikh.B[1], Khatantuul. B[2], Khandaa. O[3], Batgerel. B[4], Dolgormaa.D[5], Erdenetsogt. D[6], Jian Yi Li[7]
[1,2,3,4] Mongolian National University Of Medical Science
[5]Mongolian Center Hospital of Forensic Medicine
[6]School of Medicine, Mongolian National University Of Medical Science
[7]Hofstra North Shore-LIJ School of Medicine
E-mail: uurtsaikh.mnums@yahoo.com

Instruction: S100B protein is highly specific to CNS astrocytes and commonly used as astrocyte marker. (Donato, 1986, Donato, 2003). In traumatic brain injury cases part distant from primary injury is rarely studied by immunohistochemistry method. Informed by Dong Ri-Li and Hitoshi Maeda, S100-immunopositive astrocytes significant decreases survival chronologically in group of TBI than control group. Moreover It is curious that hemisphere without primary injury affects. We aimed to evaluate quantitive correlation between s100 positive glial cells and survival time in part apart from primary injury.
Methods: This cross sectional study, performed on 90 samples based on 9 brains in one year period from november 2014 to april 2015 by biomedical ethic (2/3/201402). Samples were divided into 3 groups according to the survival time including less than 3 hours, 6 to 72 hours and over 72 hours. For controls, sudden cardiac deaths were used. Insula, forental, occiptal pariatal and hippocampus tissues were prepared for 3μm slides. Hippocampus was sliced coronal section by the Williams&Wilkins technique. Tissues were stained S100 protein by ABC technique. s100 Immunopositive glial cells were counted under Olympus BX-51 light microscope, 200x magnification. Nonparametric Mann-Withney test was used for statistical analyze.
Result: the number of immunopositive glial cells in the cerebral white matter between hippocampal regions and traumatized between non-traumatized brain hemisphere have no significantly differences ($p>0.05$).
Comparison between control and case groups including less 3, 6 to 72 and over 72 survival hours were in white matter ($p=0.14$; $p=0.85$, $p=0.8$) in hippocampus ($p=0.29$; $p=0.71$; $p=0.8$).
Discussion: These findings suggest that S100-immunopositivity cells might be useful for non-traumatized brain hemisphere.
Key words: S100 protein, survival time, traumatic brain injury, central neural system

Research results on social workers' job satisfaction

Khandmaa Sukhbaatar[1], Erdenechimeg Gankhuyag[2]
[1] Department of Behavioral Science and Community Health,
School of Public Health, MNUMS
[2] Tseden-Erdene Family Health Center
E-mail: s.khandmaa@mnums.edu.mn

Background: Lack of employment longevity and high turnover among social workers is common in Mongolia, as it is globally. There are many contributing factors in the literature, including lack of role clarity and work requirements that exceed job description, which leads to job dissatisfaction. High turnover can lead to poor services delivery and loss of professional capacity. In Mongolia, **s**ocial work profession has been developed for 16 years; school social work has developed 1997, welfare and health social work is developed after 2000. In Ulan-Bator, total of 317 social workers work in public sector including school, welfare and health setting. It is essential to study current situation of social workers' job satisfaction to advance social work practice.
Aim: To determine (1) the level of general job satisfaction among social workers (2) differences in job satisfaction among social workers across sectors.
Methods: The study was conducted using the questionnaire on Job Satisfaction Scale (Koeske, 1994). There are n=95 participants from Bayanzurkh, Chingeltei, Songinokhairkhan districts of Ulan-Bator.
Results: The gender ratio for the subjects was 71 female (74.7 percent), and 24 male (25.3 percent). Of the participants, 78 (82 percent) were of the ages up to 35, 17 (18 percent) were more than 35 years of age. In terms of working sector, 48 participants (50.5 percent) were from welfare social workers, 24 participants (25.3 percent) from health setting, and 23 participants (24.2 percent) from school setting. Results show that social workers are moderately satisfied with their job, and there are no significant differences between school, welfare and health settings.
Conclusion: Social workers are moderately satisfied with their job in general, and there are no significant differences on job satisfaction between working fields of social workers.
Key words: Job satisfaction, social workers

Social worker's job stress in Ulaanbaatar

Khandmaa Sukhbaatar[1], Uuganbat Delgerbat[2]
[1,2] Department of Behavioral Science and Community Health,
School of Public Health, MNUMS
E-mail: s.khandmaa@mnums.edu.mn

Purpose: To investigate (a) the job stress among social workers in Mongolia, (b) differences of job stress of social workers who work in health, welfare and school sector (c) main factors of job satisfaction of social workers in Mongolia

Design and methods: Descriptive study model was used to investigate these situations among 64 of total 317 social workers in health, welfare and school sector. Data were collected using a structured questionnaire, which included the Stress thermometer questionnaire developed by Carlton E. Munson and the demographic form. Descriptive statistics: correlations of job stress level and working fields, and hierarchical regression techniques were used to analyze the data.
Results: Two in tree of Mongolian social workers has middle level of job stress. There are no significant differences on job satisfaction among social workers who work in health, welfare and school sector in Mongolia. The main factors of job stress among Mongolian social workers are role ambiguity, low salary and lack of supervision.
Conclusion: Results indicted the job stress level of social workers, as well as its main factors, the need for further research to test the U-shaped relationship between job stress, job satisfaction and personal factors.
Key words: Job stress, social workers

Epilepsy in Women

Khandmaa D, Tovuudorj A
Mongolian National University of Medical Sciences
E-mail: khandmaa.d@mnums.edu.mn

Epilepsy is a group of neurologic conditions characterized by recurrent unprovoked seizures. Approximately 1 percent of the population has epilepsy, making this one of the most common chronic health conditions affecting reproductive - aged women. Epilepsy in Women raises special reproductive and general health concerns. Seizure frequency and severity may change at puberty, over the menstrual cycle, with pregnancy, and at menopause. Estrogen is khown to increase the risk of seizures, while progesterone has an inhibitory effect. Care for women with epilepsy presents several specific challenges toward antiepileptic drug (AED) selection and prescription in light of drug risks during any potential pregnancy, planned or unplanned, and the complex interactions between the AEDs and female sex steroid hormones. Many antiepileptic drugs induce liver enzymes and decrease oral contraceptive efficacy. Women with epilepsy also have lower fertility rates and are more likely to have anovulatory menstrual cycles, polycystic ovaries, and sexual dysfunction. Irregular menstrual cycles, hirsutism, acne, and obesity should prompt an evaluation for reproductive dysfunction. Children who are born to women with epilepsy are at greater risk of birth defects, in part related to maternal use of antiepileptic drugs. This risk is reduced by using a single antiepileptic drug at the lowest effective dose and by providing preconceptional folic and supplementation. Breastfeeding is generally thought to be safe for women using antiepileptic medications.

Current state of mental health service in Mongolia

Khishigsuren.Z[1]
[1]*Department of Mental Health, School of Medicine, MNUMS*

In 1929, mental health service was founded by USSR experts in Mongolia. In early years Russian experts Strelchuk. I.V, Anisimova.N.A and Ilien.A.V worked to develop mental health service. It has been 85 years since then that Mongolia prepared national mental health experts and developed mental health service.

Mongolia is showing mental health service as a three stage which are primary care, basic healthcare service and specialized care.

As today, we are showing mental health service by National center of Mental health with 450 beds, Narcology hospital, drug and substance abuse force treatment place and mental health departments of 21 province in Mongolia.

According to 2005 WHO assessment of Mongolian mental health service, 2% of total heath expense is spent on mental health field.

Human source of mental health expert is very important and as 2014, there is one psychiatrist per 60.000 people. However, in Ulaanbaatar there are 2.1 beds and in provinces and districts there are 0.7 beds per 100.000 people which is 2 times less than beds number of Western region of pacific ocean.

Mongolia has a mental health policy that in 2000, Mongolia established The Mental Health Law which was revised in 2013 and between 2002 to 2007, the first program on mental health had been processed and assessed the result of fulfillment and the second program on mental health is still in action from 2009 to 2016. Mongolia has put into practice and has control over the enforcement of legal acts which are cared by international countries: "Human rights declaration of people with intellectual disability", "The united convention on drugs ", "The convention on psychotropic medication", "The rights of patients with mental disorder" and "Declaration of Madrid".

As showing mental health service, we face to requirements that to study prevalence of mental illness and character of disease. In the result of study performed in our country from 1984 to 1992, there are 20 to 24 incidences per 1000 people and intellectual disability was higher in character of disease.

Since then, the next major research called "The prevalence of common mental disorders" was done in 2013. The result of this research shows that anxiety occupies 18.5%, insomnia occupies 17.1% and neurasthenia occupies 16.2% which placed in first three places among population and there is a preliminary result that disorders based on mentality has increased 10 times and alcohol abuse has increased 40 times compared to the research result in 1992 .

In current state of Mongolian mental health service, the average duration of hospitalization is long, high recurrence, low supplement of atypical psychotropic medication and low expense per mental bed are the mean issue.

Thus, in the future we have to transfer hospital based mental health service into community-based mental health service, increase the number of mental health experts, improve the management of service and add new technologies to treatment in the nearest furure.

Drug treatment regimen of epileptic patient with status by morisky test result

Orhonselenge.Ts[1], Khishigsuren.Z[2]
[1] National Center for Mental Health
[2] Department of Mental Health, School of Medicine, MNUMS

Introduction: There are 50-70% of positive results for the patient with epileptic status to reduce status numbers when patient hold the drug treatment regimen. But patient with epileptic status doesn't follow the drug treatment regimen due to many reasons.
We used internationally approved drug treatment regimen of Morisky test to our research.
Purpose: To determine patients situation of drug treatment regimen against Epileptic status.
Objective: To evaluate the drug treatment regimen of research attendants and to determine the relativity of recognitions with drug treatment regimen
Methods: Cross sectional method and questionary methods are used to the research and processed all the collected information on SPSS-21 program.
Morisky 4 and 8 standard questionary are used to the epileptic patients on regimen and Folstein tests are used for recognition reduction.
Research results: There are total 110 patients attended to our research and 60 males, 50 females at age between 20-71 years old with average age of 44,3±1,2.
55,5% of patients use their drugs under the control of close family member and 44,5% of patients use their drug by themselves.
By the Morisky test drug treatment regimen, there are poor regimen or don't follow the regiment for 85,7% on 4 questionary, for 97,1% on 8 questionary. Further inspection, patients who doesn't follow the drug regimen are 20% for 4 questionary variation and 77,1% for 8 questionary variation. Also, when we define the sensitivity level of 2 Morisky test, 8 questionary test was statistically important to determine realistically (p=0.004).
According to our research, not following the drug treatment regimen will reduce the recognition process and will influence to complicate it. From the Folstein test which evaluated the recognition skill of patient, 70% (n=77) of research attendants have no sign of dementia, 20,9% (n=23) of attendants have mild dementia and 9,1% (n=10) of attendants have severe dementia. When we compare and check the relations of the recognition reduction of research attendants with Morisky's points of drug treatment regimen by simple linear regression sloping point was 0,63 (p=0.0001).
Conclusion: When dementia develops to the patient, drug treatment regimen has linear correlation and 8 questionary test was more sensitive to the drug treatment regimen. Also when Morisky test point increases by 1, recognition reduction increases by 0,63% which has statistically linear correlation.

Diabetic peripheral neuropathy was diagnosed by pgp 9.5 antibody

Oyunbileg B[1], Altanzul A,[1] Oyuntugs B[1], Bayasgalan T[1],
Gerel B[1], Suvd J[1], Sainbileg S[1], Bayarmaa E[2]
[1]School of Medicine, MNUMS
[2] School of Biomedicine, MNUMS

Background: Diabetes mellitus is one of the world's leading causes of morbidity and mortality. More than 50 percent of the people have diabetes peripheral neuropathy (DPN), and of those diagnosed with DPN risk lower limb amputation by more than 25 percent. Seventy percent of world wide leg amputation surgery is diabetes-related. Researchers believe they will be able to prevent about 85 percent of leg amputation.

Objective: The aim of this study was evaluate to Diabetic Peripheral Neuropathy (DPN) was diagnosed by PGP 9.5 antibody.

Methods: This study included 30 (10 male, 20 female) diabetic patients hospitalized at the Endocrinology hospital in Ulaanbaatar city last one year. The DPN was diagnosed by questionnaire, by foot examination using "Milgamma PNP- Diagnose- Set" (monofilament, tip-therm, tuning fork, neurotips and cotton wool). This is descriptive study that used PGP 9.5 antibody and immunohystochimestry method; data analysis was done by using the SPSS 19 statistical program.

Results: The study included 9 patients with type 1 diabetes (30 percent), 21 patients with type 2 diabetes (70 percent), the mean age was 49.07±4.09, mean diabetes duration was 9.46±5.74 years (0-23 years), mean Hb1AC level was 9.81±1.90 percent (type 1 patients 9.98±1.77 percent and type 2 patients 9.73±2.00 percent).

Among diabetic patients with poorly controlled or HbA1C level >7.5 percent was 94 percent, 3 percent was moderate controlled or HbA1C level 6.5-7.5 percent, and 3 percent was good controlled or HbA1C level <6.5 percent. Qualitative and quantitative results of intraepidermal nerve fiber density (IENFD) was diagnosed by immunohystochimestry using PGP 9.5 antibodies.

DM patients with no DPN was 5 (16.7 percent), with mild DPN was 8 (26.7 percent), with moderate DPN was 12 (40 percent) and with severe DPN was 5 (16.7 percent). Among type 1 patients diagnosed with DPN was 89 percents and type 2 patients with DPN was 81 percent. Diabetic peripheral neuropathy was detected was correlated with diabetic duration (V=0.876, p<0.0001) and HbA1C level (V=0.760, p<0.0001).

If IENFD was more than in 1 mm area 12 nerve fiber was diagnosed no peripheral neuropathy and less than in 1 mm area 12 nerve fiber was diagnosed peripheral neuropathy. Among diabetic patients with no DPN was 4 (13.3 percent), with mild DPN was 6 (20 percent), with moderate DPN was 7 (23.3 percent) and with severe DPN was 13 (43.4 percent). IENFD was decreased 100 percent in type 1 diabetic patients and was decreased 87 percent in type 2 diabetic patients. Mean IENFD in 1 mm area was 7.87±4.72 (type 1 was 6.44±2.83, and type 2 was 8.48±5.27) nerve fiber.

Specificity and sensitivity of immunohystochimestry using the 2x2 table tests for specificity was 40 percent and sensitivity was 92 percent.

Conclusion:
Among diabetic patients by clinical examination with DPN was diagnosed 83.3 percent (type 1 was 89 percent and type 2 was 81 percent) and DPN was correlated with diabetic duration (V=0.876, p<0.0001) and HbA1C levels (V=0.876, p<0.0001).
DPN was diagnosed by PGP 9.5 antibody with 86.7 percent in diabetic patients (type 1 was 100 percent and type 2 was 81 percent) and immunohystochimestry of sensitivity was 92 percent and specificity was 40 percent.
Key words: Diabetic peripheral neuropathy, intra-epidermal nerve fiber density, immunohystochimestry, PGP 9.5 antibody.

Clinical findings and diagnosis of Meniere's disease

Oyunchimeg.B, Tovuudorj A
Mongolian National University of Medical Sciences
e-mail:oonoo_bayan@yahoo.com

Meniere's disease is a disorder of the inner ear that is also known as idiopathic endolympathic hydrops. Meniere's disease is characterised by recurrent attack of vertigo, fluctuating hearing loss, tinnitus and a sensation of aural fullness. Attacks are sudden in onset, typically accompanied by an intense sensation of movement, nausea, vomiting and diarrhae. The term endolympathic hydrops is often used synonymously with Meniere's disease and Meniere's syndrome. However, Meniere disease is idiopathic by definition, whereas Meniere's syndrome can occur secondary to various processes. These are including autoimmune disease, allergic response, obstruction, autonomic imbalances, viral infection, dietary deficiencies and vascular irregularities. The underlying mechanism is believed to be distortion of the membranous labyrinth resulting from over accumulation of endolymph. Meniere's disease is can be seen in all ages. Female to male ratio is 1.3-1.8:1.The prevelance varies widely 15-157 per 100.000 population by geographic difference. Diagnosis of Meniere's disease is mainly based on patient's complain and medical history. The useful investigation tests are standard pure tone audiogram, a vestibular function test and electrocochleagraphy, MRI or CT scan.To clarify diagnosis , treatment and prognostication of patients with Meniere's disease AAO-HNS has published last guideline in 1995. The disease symptoms and progression are presented widely. In early stages because of vertigo most bothersome, the time goes by the symptoms changes to progressive hearing loss. Meniere's disease is said "burn out"over time. The spontaneous remission rate is high: over 50% within 2 years and over 70% after 8 years. Pharmacologic treatments include diuretics, migraine prophylactic medication, histamine analogs and oral steroids, surgical procedures include intratympanic steroid and gentamicin perfusion, shunt and ablative procedures, labyrinthectomy when conservative treatments fail. Meniere's disease is not common and because of rareness and no specific diagnostic test and treatment, it is not well studied. We still need more specific and sensitive diagnostic tests and randomized, controlled trials to prove the real effectiveness of treatment.

Уураг тархины тэгш бус хэмд суурилсан сургалтын аргын нэгэн хувилбар: 4 алхамт загвар ба туршилтын үр дүн

Батаагийн Оюунчимэг
МУБИС, МБУС-ийн биологийн тэнхмийн багш, боловсрол судлалын докотрант, oyunchimegb@yahoo.com

This paper suggests a new mode for learning (e-learning) as a method of innovation based on activities left and right hemisspheres of the brain

Key words: 4 steped new mode for learning, the activities of brain, left and right hemispheres

Оршил: Хүний уураг тархины орчин үеийн судалгаа нь сургалтын аргын шинэ дэвшилтэт хувилбарыг гаргахад томоохон нөлөө үзүүлсээр байна.Судлаач Sharon K.Ferrett (2008) уураг тархины баруун тал давамгайлсан хүмүүс ба зүүн тал давамгайлсан хүмүүсийн тухай, "Эмоцийн оюун ухаан"(2010), докторант Б.Оюунчимэг "Уураг тархины асимметр чанарт суурилсан сургалтын аргын нэгэн хувилбар "(2013) бүтээлд шинэ санаанууд тусгагдсан юм. Бид уураг тархины хоёр тал бөмбөлгийн үйл ажиллагааны онцлогийг сургалтын арга судлалын үүднээс дараахь бүдүүвч дээр авч үзэв.Үүнд: (Зураг 1. Тархины дээрээс нь харсан зураглал.)

Тархины зүүн тал бөмбөлөг	**Тархины баруун тал бөмбөлөг**
Дэс дараалсан шугаман зарчимаар ажилладаг	Нэгэн зэрэг зэрэгцээ зарчимаар ажилладаг
• *Логик* • *Задлан шинжлэх* • *Учир зүй* • *Бичих* • *Унших* • *Математик, Хэл яриа*	• *Дүр дүрслэл,хөгжим, нэгтгэн дүгнэх* • *Танин мэдэх* • *Хэм хэмнэл* • *Зөн совин* • *Уран сэтгэмж* • *Орон зайн хэмжээс (3D)*

Үндсэн хэсэг: Бидний харьцуулсан судалгааны үр дүнд боловсролын инновацид багтах арга зүйн дараахь шинэ боломж гарч байна.Энэ нь, уураг тархины зүүн тал ба баруун тал бөмбөлөгт нөлөөлөх дидактикийн тусгай ажлуудыг боловсруулж, тэдгээрийг ашиглан суралцагчийн уураг тархины чадавхи ба боломжийг бүрэн дүүрэн ашиглах, оюун ухааныг жигд хөгжүүлэхэд оршино.Үүний тулд докторантаас дараахь дөрвөн алхамт загварыг шинээр боловсруулж, туршсан болно. Дэвшүүлж буй загвар нь:

1 алхам. Ерөнхий ойлголтыг уламжлалт аргаар тайлбарлан ярих, зэрэг энгийн аргаар өгөх.(Асуудал дэвшүүлж тайлбарлах г.м)(Комьютер ашиглан товч эх сэдэв бэлтгэх)

2 алхам. Ерөнхий ойлголтын хүрээнд бүрэлдэхүүн хэсгүүдийг нарийвчлан авч үзэж тэдгээрийг хооронд нь жиших, харьцуулах.(Комьютерээр бүрэлдэхүүний элементүүдийг харьцуулан зураг үйлдэх)

3 алхам. Мэдээллийн зарим хэсгийг (процесс ба тохиолдлыг) сонгон авч задлан шинжилж, нэгтгэн дүгнэх.

4. алхам. Тухайн мэдлэгийг төсөөтэй ба шинэ нөхцөлд шилжүүлэн хэрэглэх (Цахим ба интернет орчинд өгөгдсөн мэдлэгийг баяжуулж,мэдээллийн шинэ технологид суурилсан бага хэмжээтэй төсөл зохиох) зэрэг дөрвөн гол бүрэлдэхүүн хэсэгтэй юм.

Судалгааны явцад бид дээрх загварыг ашиглан дараахь сурган хүмүүжүүлэх туршилт, ажиглалтыг явуулсан болно. Туршилт ажлыг явуулахдаа дээрх загварын эхний хоёр алхам болон 3дахь алхамын зарим хэсгүүдийг анги танхимд багшийн үзүүлэн таниулах, тайлбарлан ярих уламжлалт аргуудыг ашиглан явуулав. Уг судалгаанд МУБИС-БУС-ийн ББШ, ЭХ, ГЗБ, БЭМ ангиудын нийт 88 оюутныг хамруулсан болно. Туршилтыг дараахь сэдвүүдээр 2013оны 11, 12 сар 2014 оны 3 саруудад МУБИС дээр явуулав. Үүнд:

Туршилтын хичээлийн үндсэн сэдэв ба агуулга:

Цус, зүрх судасны тогтолцоо.

Бие махбодын дотоод орчин

Зүрхний бүтэц үйл ажиллагаа

Цус төлжүүлэх аппарат

Хүүхдийн зүрх судасны системийн онцлог

Зүрх судасны системийн эрүүл ахуй

Мэдрэхүйн эрхтэн тогтолцоо:

Мэдрэхүйн эрхтний тухай.

Харааны мэдрэхүй.

Сонсголын мэдрэхүй.

Биеийн мэдрэхүй.

Амтлах мэдрэхүй

Тэнцвэрийн мэдрэхүй

Мэдрэхүйн эрхтнүүдийн эрүүл ахуй зэрэг ухагдахуун, ойлголтуудаас тогтож байв.

Харин туршилт ажлын дараагийн шатанд танхимаас гадуурх бие даасан ажлууд багтсан юм. Мэдээллийн шинэ технологи, арга хэрэгсэлд тулгуурлан задлаг, нийлэг бүдүүвч зураг зохиох, мөн сэдвийн хүрээн дэх мэдээллийг баяжуулан, түүнийг практикт хэргэлэхэд чиглэгдсэн тусгай төсөл зохиох ажлууд түүнд багтсан болно. Туршилтандд хамрагдсан 88 оюутныг ажлын үр дүнгээр нь 1-ээс 4 түвшинд хуваж бүлэглэсэн (зэрэглэсэн)болно. Тухайлбал, дөрвөн алхамт загварын

1-р алхмын ажилд 1оноо

2-р алхмын ажилд 2оноо

3-р алхмын ажилд 3оноо (задлан шинжилж нэгтгэн дүгнэх түвшин)

4-р алхмын ажилд 4оноо (мэдлэгээ шинэ нөхцөлд шилжүүлэн хэргэлэх, үнэлгээ өгөх дээд түвшин)

Судалгааны дүнг дараахь хүснэгт 1 -ээр харуулав.

Хүснэгт-1 ээс үзэхэд дэвшүүлж буй сургалтын шинэ арга болон дөрвөн алхамт загвартай холбоотой дараахь хандлага ажиглагдсан болно. Үүнд:

Туршилтаас үзэхэд сургалтын уламжлалт аргыг шинэ E-Learning-цахим сурахуйн барилтай хослуулан хэрэглэснээр ууриг тархины (баруун, зүүн талын) чадавхийг өндөр түвшинд зэрэг ашиглаж болох нь харагдав.

Дэвшүүлж буй арга нь оюутан, суралцагчдаас мэдлэгээ шинэ ба төсөөтэй нөхцөлд шилжүүлэн хэрэглэх арга барилд сургах замаар тэдний оюун ухааны хөгжилд сайнаар нөлөөлж буй нь тогтоогдов.

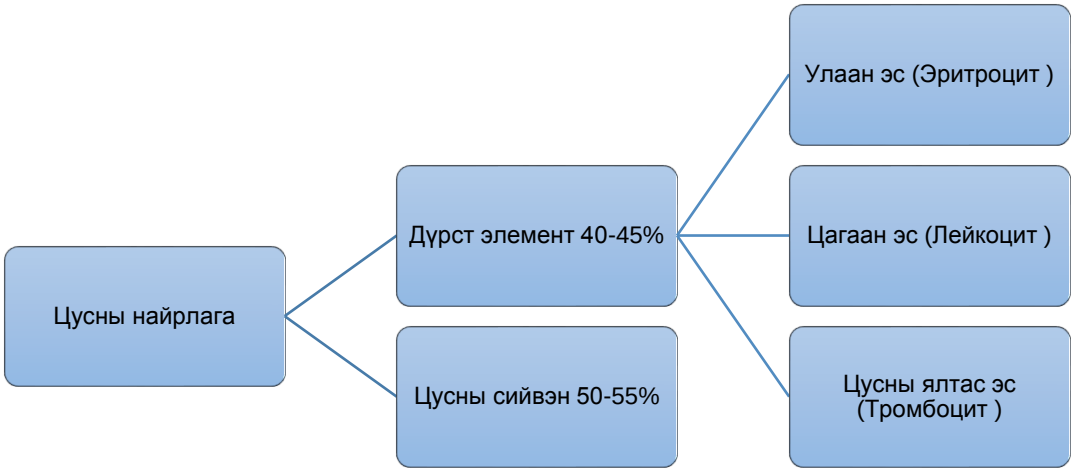
Түүнчлэн орон зайн сэтгэлгээ, бүтээлч үйл ажиллагааг хөгжүүлэхтэй холбоотойгоор баруун тал бөмбөлөгт чиглэсэн бичил төсөл зохиох ажлууд нь арга зүйн зохих ач холбогдолтой болох нь тодорхойлогдов.

Тухайлбал :

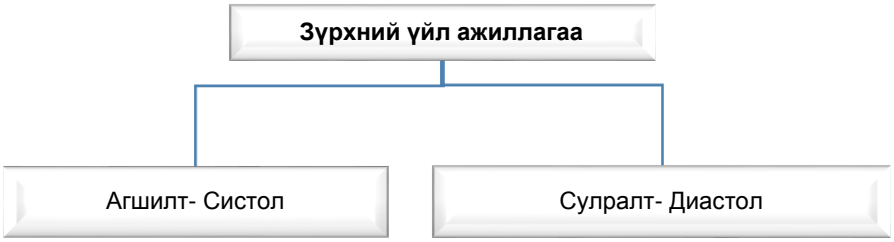
- Бүдүүвч жишээгээр: ВЕМ-3 Л.Энхцэцэг

1. Агуулгыг харьцуулсан бүдүүвч

2. Агуулгыг харьцуулсан бүдүүвч



3.Агуулгыг харьцуулсан бүдүүвч



4. Агуулгыг харьцуулсан бүдүүвч

- Бичил төсөл жишээгээр:
  - Сэдэв: Зүрхний шигдээс өвчин.
  - Хэрэгжүүлэгч: БЭМЗ-Л.Нямсүрэн
  - Хугацаа:5-6сар
  - Зорилго: Зүрхний шигдээс өвчин ямар шалтгаанаар үүсдэг болон энэ өвчнөөс хэрхэн урьдчилансэргийлэх талаар хүмүүст мэдлэг олгоход оршино.
  - Зорилт: Зорилтот бүлгийн хүмүүст
    - ✓ Зүрхний шигдээс үүсэх шалтгаан
    - ✓ Зүрхний шигдээс өвчний шинж тэмдгийг тайлбарлан, урьдчилан сэргийлэх талаар ойлголт олгох
  - Агуулга:
    - ✓ Зүрхний шигдээс үүсэх шалтгаан
    - ✓ Зүрхний шигдээс өвчний шинж тэмдэг
    - ✓ Урьдчилан сэргийлэлт
  - Хүрэх үр дүн:
    - ✓ Зүрхний шигдээс өвчний талаар мэдлэгтэй болсноор уг өвчин үүсэхэд нөлөөлдөг хүчин зүйлсээс татгалзах болон 1-3 хорт зуршлаас бүрмөсөн татгалздаг болсон байх.

Туршилтын явцад, дэвшүүлж буй арга нь суралцагчдын сонирхлыг ихээхэн татаж танин мэдэх сонирхлыг төрүүлж буй нь харагдав. Үүнд:

- Санал сэтгэгдэл жишээгээр:

- ЭХ-3 ангийн оюутан Х.Э
  - Энэхүү биедаалтыг хийснээр танин мэдэхүй, бүтээлч сэтгэхүй, оршихуйн, нийгэмшихүйн, хийж гүйцэтгэхүйн гэх мэт олон цогц чадамжуудыг хөгжүүлж, онолын мэдлэгээ амьдрал

практикт хэрэгжүүлж сурах аргын үндэстэй болгож, даалгавар нь хөнгөнөөс хүнд рүү гэх мэт зэргээр шат дараатай байснаараа давуу талтай байлаа. Цаашид бие даалтын энэ маягаар өгвөл оюутан бүрийн бүтээлч сэтгэхүйг хөгжүүлж, тэдэнд хүртээмжтэй өөрт нь мэдлэг болж үлдэж чадаж байна.

- ЭХ-3 ангийн оюутан Г.А
  - Энэхүү бие даалтыг хийснээр цус, зүрх судасны системийн талаар мэдлэгтэй болсон. Мөн сэдвийн хүрээг хамарсасн бүвүүвч хийж сурлаа. Хамгийн сүүлд нь жижиг төслийн хүрээнд өөрийнхөө гэр бүлд хэрхэн зүрх судасны өвчнөөс урьдчилан сэргийлэх талаар мөрдөж болох аргуудыг хэрэгжүүлж эхэлсэн.
- ББШ3 ангийн оюутан Ц.С
  - Оюутнуудаар бие даалт хийлгэн төсөл бичүүлж сургаж байгаа явдл нь хичээлийн үр илүү дүнг илүү үр дүнтэй болгож байна. Үзсэн лекцээр болон нэмэлт материал цахаим хэрэглэгдэхүүн авч бие даалтыг гүйцэтгэсэн. Төсөл гэж юу болохыг судалж сэдвийн хүрээнд төсөл дэвшүүлж даалгаврыг хийлээ. Урьд өмнө нь бие даалтыг үр дүнгүй гүйцэтгэж байсан гэдгээ ойлгосон. Үр дүнтэй бүтээлч даалгавар болж чадсан. Цаашид иймэрхүү загвараар бие даалтыг хийлгэж байх нь зүйтэй юм.

Туршилт судалгааны ажлын зарчим үр дүн.

Сургалтын уламжлалт аргыг орчин үеийн электрон сурахуйн аргатай оновчтой хослуулснаар суралцагчийн уураг тархины чадавхи ба боломжийг илүү өндөр түвшинд ашиглах арга зүйн боломжтой болох нь тодорхойлогдов.

Товч дүгнэлт.

Уураг тархины үйл ажиллагааны тэгш бус хэмд суурилсан “Дөрвөн алхамт загвар”нь их дээд сургуулийн сургалтанд зохистой хэрэглэгдэж болохоос гадна сургалтын уламжлалт арга ба орчин үеийн электрон сурахуйн аргыг хослуулан нэгдмэл, интеграцчлагдсан арга болох нь туршилт ажиглалтаар тогтоогдов.

№	Оюутны нэрс	I	II	III	IV
1	Хүрэлшагай ЭХ	1	2	2	
2	Бурмаа ББШ	1	1	3	4
3	Сумъяасүрэн ЭХ	0.5	1	3	
4	Ардабек ЭХ	1	2	3	4
5	Бадамханд ББШ	1	2	3	4
6	Мядагсүрэн ББШ	1			
7	Сайнцэцэг ББШ	1	2	2	4
8	Амарсанаа ЭХ	0.5	2	0	2
9	Хулан ЭХ	1	2	0	2
10	Дашцэрэн ЭХ	1	2	3	2
11	Үүрцайх ЭХ	1	2	0	0
12	Нямсүрэн БЭМ	1	2	3	4
13	Ариунжаргал ББШ	1	2	3	4
14	Батзаяа ЭХ	1	2	3	4
15	Уранчимэг ЭХ	1	2	3	4
16	Сугармаа ЭХ	1	2	0	4
17	Пагмадулам ЭХ	1	2	0	4
18	Гэрэлчулуун ББШ	1	2	3	4
19	Золзаяа ЭХ	1	2	3	4
20	Сарангэрэл ББШ	1	2	3	4
21	Аззаяа ЭХ	1	1	2	4
22	Билгүүн ЭХ	1	1	2	4
23	Энхцэцэг БЭМ	1	2	3	4
24	Болор ЭХ	1	2	3	4
25	Хандцэрэн ЭХ	1	2	3	4
26	Дулмаа ББШ	1	2	3	4
27	Мөнхөө ББШ	0.5	2	3	4
28	Урнаа ББШ	1	2	2	2
29	Нандин-Эрдэнэ ББШ	1	2	3	2
30	Чимидбат ББШ	1	2	0	4
31	Чанцалдулам ГЗБ	1	2	0	4
32	Гантөмөр ГЗБ	1	2	0	2
33	Энхмэнд ББШ	1	1	0	0
34	Заяажаргал ББШ	1	2	2	4
35	М.Оюунгэрэл ГЗБ	1	1	2	0
36	О.Оюунгэрэл ГЗБ				
37	Очирбат ГЗБ	1	1	0	0
38	Очирмаа ГЗБ	1	0	0	0
39	Мөнхцэцэг ГЗБ	1	2	2	2
40	Нургүль ГЗБ	1	2	3	2
41	Батжаргал ББШ	1	2	0	2
42	Дэлгэрмаа ББШ	1	2	3	2
43	Туяамаа ББШ	1	2	3	2
44	Отгончимэг ББШ	1	1	0	0
45	Төртогтох ББШ	1	2	0	2
46	Навчаа ББШ	1	2	3	4
47	Ариунжаргал ББШ	1	2	3	4
48	Ундармаа ББШ	1	2	2	0
49	Болорцэцэг ЭХ	1	2	3	2
50	Мөнгөнцэцэг ГЗБ	1	1	0	0
51	Жаргалмаа ЭХ	1	2	0	2
52	Мягмардулам ЭХ	1	2	2	0
53	Жанбота ГЗБ	1	2	3	2
54	Даваацэрэн ГЗБ	1	2	3	2
55	Тогтохжаргал ГЗБ	1	2	0	0
56	Пүрэв-Эрдэнэ ГЗБ	0	2	0	0
57	Өлзийбаяр ГЗБ	1	1	0	0
58	Пүрэвзаяа ГЗБ	1	1	0	0
59	Нарангэрэл ГЗБ	0.5	2	0	2
60	Гантуяа ЭХ	1	2	3	4
61	Цэцэгбалжид ГЗБ	1	2	3	4
62	Сарантуяа ГЗБ	1	2	0	0
63	Норжинлхам ГЗБ	1	2	2	2
64	Чанцал ГЗБ	1	1	0	2
65	Мичидмаа ГЗБ	1	2	0	0
66	Эрхэмсайхан ГЗБ	1	2	3	2
67	Отгонцэцэг ГЗБ	1	2	2	4
68	Уянга ГЗБ	1	2	0	2
69	Амарсанаа ГЗБ	1	2	0	2
70	Баярмагнай ГЗБ	1	2	3	4
71	Оюунцэцэг ГЗБ	1	1	0	0
72	Хатанбатар ГЗБ	1	2	3	4
73	Мөнгөнцэцэг ГЗБ	1	2	0	0
74	Баасандорж ББШ	1	2	0	2
75	Гажидваанчиг ЭХ	1	1	0	0
76	Бамчимэг ГЗБ	1	1	0	0
77	Даваасүрэн ГЗБ	1	1	0	0
78	Лхамсүрэн ГЗБ	1	2	2	2
79	Азжаргал ББШ	1	2	0	0
80	Чанцалдулам БЭМ	1	2	3	4
81	Ренчинханд БЭМ	1	2	3	2
82	Сумьяасүрэн БЭМ	1	2	3	4
83	Шүхэрцэнд БЭМ	1	2	2	2
84	Бат-Эрдэнэ БЭМ	1	2	3	4
85	Энхмэнд	1	2	3	4
86	Анар-Отгон	1	2	3	4
87	Сарангэрэл ББШ	1	2	2	4
88	Номинзул ББШ	1	1	3	4
		93%	**77%**	**43%**	**42%**

Хүснэгт1. /Цус , зүрх судасны эрхтэний тогтолцоо./

Help seeking attitudes of freshman, who have mental health problems towards non-professional aid

Uyangaa M[1] Oyunsuren D[2] Khishigsuren Z[2]
[1]National Center for Mental Health
[2]Department of Mental Health, SM, MNUMS

Background: According to Mental health law, it is indicated that "Only the legal person who has the authorization to show Mental health care will serve by mental health care".
But In recent times, due to people with mental health problems are increased to go to non-professional institution, late diagnose is occurring and people are involving to the health, mind and financial loss.
Purpose: To determine the non-hospitalization visits and psychopathologic diagnose of patients who is visiting to the mental health center first time.
Methodology: Research involved the people who are visiting to the Mongolian National Center for Mental Health first time and research used cross sectional research method, purposed collecting method and questionary method.
Result: Our research involved 35 male and 52 female at age of 18-56 years old patients. The diagnoses of patients who involved to the research were 39% of schizophrenia and related diseases and 34,5% were psychological disease due to emotion by ICD-10. 70,1% of Research attendance visited to Neurological hospital, 65,5% visited to the psychologist and got advice, 55,2% visited to the acupuncture and cauterization and massager , and only 8% went directly to the Mental health center by duplicated number. Additionally, 56.3% of total subjects were visited to shamans and lama (55.2%) with statistically significant ($p \leq 0.000$). There are 3 cases who are taking mental health care after 7 years since the first sign revealed. They spent 400'000-500'000MNT (250USD) to 50'000'000MNT (25000USD) by finance. From the result of people who involved to the research, 48% of patients visited to shaman and monks got no treatment, 29,3% of patients feelings improved and 8 patient told mentally improved.
Also, attendances temperaments by Eysenck's Personality Inventory (EPI) were 34,5% of melancholic and 33,3% of phlegmatic patients.
Conclusion:
Main mental health problem of subjects, who are visited to non-professional aid, was schizophrenia or stress related problem and they have psychological and economic damages related to delayed diagnosis.
Keyword: shaman, lama, non-professional care, EPI

Stigmatization and discrinimation towards mental patients

Dolgorsuren S, Gantsetseg T, Oyunsuren D, Khishigsuren Z
Department of Mental Health, School of Medicine, MNUMS

Background: According to the WHO reports (2001), mental health and behavioral disorders are main health problems worldwide and constitute about 10-12% of the global burden of diseases. It should be increasing to 15% in 2020. Currently, 1 in 4 people in the world are suffered from any mental disorders and 5 of 10 diseases, which lead to disability, are mental disorders. However 25 of 100 people with mental health problems among total population, are able to get any mental health care, but 75 mental patients have not been able to get any level of mental health care. It is associated with lack of individual mental health education and knowledge; high level of misunderstanding or misconceptions about mental health. Stigmatization and discrimination towards mental patients due to misconceptions about mental illness, is leading mental patients to hide and refuse from any medical assistance.

Goal: To define current situation of stigmatization and discrimination towards mental patients.

Method and material: The survey was conducted in National Center for Mental Health and Narcology Center from June to December, 2014. A cross-sectional descriptive study was carried out among mental out or inpatients, aged 18-55 suffering from common mental disorders and sample size of 450 was drawn from total in or outpatients, who seeking care from National Center for Mental Health and Narcology Center using a random sampling technique.

Results: Totally 450 (male 52.2%, n=235; female 47.8 %, n=214) subjects, aged 18-66 years were participated in our survey and average age was 39.7 ± 0.4. Most of participants (73.3% n=330) are unemployment due to their mental diseases and only 16% (n=36) are employees. 77% (n=346) of total participants were urban people and 23 % (n=104) were living in rural areas. 34,4% of them are married, 16,9% are divorced, 5.1% are widowed, 27.1% are single, and 15.8% are never married. 86 (19%) of total 450 participants are answered, that they are attempted suicidal behaviors at least one time in their life and 1.1% of those patients are attempted 10 times. 30.2 % of those attempts caused due to stigmatization and discrimination from others, particularly as their family member's pressure (x^2=476.986; p≤0.000). Participants, who are attempted suicidal behaviors were diagnosing as F31.0 (36%, n=31); F20.0 (29%, n=25); F10.0 (13.9%, n=12), F07.8 (11.6%, n=10) and F70.0 (9.3%, n=8). Correlation between diagnosis of patients and frequency of suicide attempts was statistically significant (x^2=44.281; p≤0.000). 62% (n=279) of total 450 subjects are answered, that they have any label or marker from their family, friends and society. The relationship of prejudice and social distance with the other factors were analyzed using multivariate regression analysis. Due to mental patient's feelings, such as denial from them, avoid help or support them, to be socially misunderstood, loneliness (58.2%), fear and produced strong negative emotions as fear (r=0.672), shame (50.6%; r=0.767), others angry or frustrated (38.4% ; r=0.469). Individual social distance on mental

illness is not only determined by individual factors but also influenced by the surroundings. In other words, social distance differs from prejudice in terms of influence of contextual characteristics (r=0,639) with statistically significant (p≤0.000).

Conclusion:

1. Of total subjects, 62% were stigmatized from their family, friends and society and it is related to diagnosis of mental patients
2. Due to mental patient's feelings, such as denial from them, avoid help or support them, to be socially misunderstood, loneliness (58.2%), fear and produced strong negative emotions as fear, shame (50.6%), others angry or frustrated (56.8%; 38.4%).
3. Social distance is not just a matter in the individual level so that we could tackle structural discrimination to improve the public's attitude.

Keywords: Discrimination, stigma, mental patient, society, social distance,

Results of cognitive-behavioural therapy, risk factors and some clinical symptoms for somatization disorder

B. Jargal[1], N. Altanzul[1], Z. Khishigsuren[1]
MNUMS, School of Medicine, Mental Health Department[1]

Background: Among the general population, there is a subgroup of patients with somatization disorder characterized by several disparate physical symptoms that are not fully explained by general medical investigations. These individuals visit many doctors and undergo numerous physical examinations and diagnostic tests, but no physical evidence can be found. Majority of these kinds of complains more common reveal among the patients in the primary health care practice.

According to the comparative benchmark result 2013 to 1992 on the research prevalence of common mental disorder among the population of Mongolia , stress related mental disorder increased 10 times thereupon somatization disorder revealed in 2 % of population.

Goal:The objective of this study is to identify and illustrate risk factors and common clinical symptoms indicative of somatization disorder and thus describe the received medical service related to special features of disorder and to identify results of cognitive-behavioral therapy among somatization disorder.

Methodology: A total of 73 patients with somatization disorder and 148 matched healthy controls were involved in this case control and clinical trial study. In addition, qualitative research was conducted as part of the semi-structure questionnaire. All of these 73 patients were already seeking and receiving medical and non-medical care at least 6 times in the past 2 years. – All of these 73 patients already, were been seeking and receiving medical and non-medical care at least 6 times in the past 2 years.

Result: The final selected this study sample who were interviewed and comprised of 168 (76%) female and 53 (24%) male patients, ages between 21-78 (40.9±10.93) years old. The average age is 40.9±10.93. Average put in time for medical care 9.1±8.3 years , average

medical admission 12.2±8.33 in last 2 years, average medical tests 20.1±11.9,average amount of money for medical care 4.281.818.2±7.411.896.03. Permanent negative memory of life experience (OR 15.82) (P утта 0.001), terrifying news (OR 15.82) (P утта 0.01), loss of loved one (OR 2.49) (P утта value 0.066) correlating to somatization disorder. Somatization disorder occur more common among the patients with hyperesthesia, hyperpnoea and physical exhaustion. Somatic symptoms decreased 4-5 times, which revealed before cognitive-behavioral therapy is statistical importance. The statistical importance of this study is somatic symptoms decreased 4-5 times after the CBT thus revealed before the cognitive –behavioral therapy.

Conclusion:

1. Risk factors of somatization disorder are followings; financial difficulties, loss of permanent negative memory of life experience
2. A variable constellation of autonomic symptoms, such as hyperesthesia, hyperpnoea and physical exhaustion reveal most frequently along with somatization disorder.
3. People with somatization disorder visit various doctors many times and undergo numerous physical examinations and diagnostic tests, lay out large amount of money for medical treatment.
4. Somatic symptoms decreased 4-5 times after the cognitive behavioral therapy , which revealed before the therapy

Key words: Somatization disorder, risk factor, clinical symptoms, cognitive-behavioral therapy

Neuroprotective activity of hydroponic teucrium polium following bilateral ovariectomy

Karen Simonyan, Vergine Chavushyan

Ovariectomy is known as "surgical menopause" with decreased levels of estrogen in female rodents. Its reported risks and adverse effects include cognitive impairment. The action of hydroponic Teucrium polium on nucleus basalis of Meynert (bnM) neurons following 6 weeks of ovariectomy was carried out. The analysis of spike activity was observed by on-line selection and the use of a software package. Early and late tetanic, - posttetanic potentiation and depression of neurons to high frequency stimulation of hippocampus were studied. The complex averaged peri-event time and frequency histograms were constructed. The histochemical study of the activity of Ca^{2+}-dependent acid phosphatase was observed. In conditions of hydroponic Teucrium polium administration, positive changes in neurons and gain of metabolism leading to cellular survival were revealed. The administration of Teucrium polium elicited neurodegenerative changes in bnM.

Identification of 8q21.13 genomic loci associated with body height in Mongolians

M.Enkhdelger[1,3] T. Kimura[2], T.Kobayashi[2], B. Munkhbat[1,3]M.G.Oyungerel[1], H.Hayashi[2], A.Oka[2], I.Inoue[2], H.Inoko[2], N. Munkhtuvshin[1].

[1] Central Scientific Research Laboratory, National Institute of Medicine, Mongolia

[2] Department of Molecular Life Science, Tokai University School of Medicine, Isehara, Kanagawa, Japan

[3] CEO Laboratory, Monolab Co., Ulaanbaatar Mongolia

Background: Recently numerous studies are attempted to analyze the phenotypic traits and disease susceptibility in their association and interactions with environmental factors and genetic polymorphisms. Adult height usually follows normal distribution in a given population and sex, the phenotype representing a typical polygenic model of a human quantitative trait influenced by multiple genes each with small effects. A major goal of current human genome-wide studies is to identify the genetic basis of complex disorders, Quantitative Trait Loci and disease susceptibility which results from the interaction of environmental and individual's genetic factors and their polymorphisms.

Materials and methods: A total of 1.555 relatively healthy individuals of Khalkh-Mongolian origin participated in the current study, distributed in 4 groups divided by sex and stature. We recruited the participants meeting the inclusion criteria in the crowded areas of the Ulaanbaatar city such as free market, universities, organizations, factories.We performed a genome-wide association study with 23,465 microsatellite markers to identify genes related to adult height. Selective genotyping was applied to extremely tall and extremely short individuals from the Khalkh-Mongolian population.

Results: Two loci, 8q21.13 and15q22.33, which showed the strongest association with microsatellites, were subjected to further analyses of 82 SNPs in 782 tall and 773 short total 1555 individuals. The most signifficant association was observed with SNP rs2220456 at 8q21.13 (P = 0.000016). In the LD block at 15q22.32, SNP rs8038652 located in intron 1 of *IQCH* was strongly associated (P = 0.0003), especially the AA genotype of the SNP under a recessive model was strongly associated with adult height (P = 0.000046).

Conclusion: In our genome-wide association study with 23,465 microsatellite markers for detection of loci controlling adult height using the selective genotyping method, we had identified two candidate loci at 8q21.13 and 15q22.33-q23 in Mongolians.

Sleep apnea and primary snoring contributes to development of obesity – a case-control study

Ryenchindorj E[1], Munkhtulga G[1], Norov T[1], Adiyakhuu O[1], Altanzul A[1], Battulga Kh[1], Enkhchimeg Ts[1], and Damdindorj B[1]
1. Department of Physiology, Mongolian National University of Medical Sciences'

Introduction: Sleep apnea is a clinical syndrome, involuntary cessation of breath during sleep and snoring are key findings of this condition. Repetitively chronic hypoxemic state leading to oxidative stress process is a trigger for many comorbid diseases including cardiovascular and metabolic disorders. Intermittent hypoxia induces excessive lipid biosynthesis and furthermore leading to dyslipidemia. We aim to assess sleep apnea risk in obese and non-obese patients, also to determine reliability of some anthropometric measurements and fasting glucose level.
Methods: By a hospital based case-control study design, obese patients (BMI≥30kg/m^2) and non-obese (18.0<BMI≤24.9) subjects were enrolled. From 96 individuals whom enrolled, totally 70 subjects, matched by sex and age, 35 people each for case and control were eligible for both inclusion and exclusion criterions. For the assessment of sleep apnea risk, Berlin questionnaire were used which translated into Mongolian. Anthropometric measurements were followed by Framingham Heart Study protocol.
Results: Sleep apnea (OR=5.74, p=0.002) and snoring (OR=8.36, p=0.001) are strong risk factor for developing obesity. Within obese patients with sleep apnea and without sleep apnea, neck circumference was significantly higher (p<0.05) in sleep apnea. We observed difference (p<0.05) in fasting glucose between obese people with sleep apnea and normal controls. Systolic blood pressure was higher in sleep apnea patients than no sleep apnea subjects for both hands (p<0.05). Triceps skinfold did not differ in any groups (p>0.05).
Conclusion: These findings suggest that sleep apnea and primary snoring are a strong key triggers for metabolic syndrome through oxidative stress pathway specially obesity. Neck circumference size may have prognostic outcome in obstructive sleep apnea; in further studies objective measurements should assess the reliability.
Keywords: sleep medicine; neck circumference; obstructive sleep apnea; anthropometry; and hypodermal adiposity

Social attitudes towards people with intellectual disability

Dolgorsuren S, Gantsetseg T, Enkh-Uchral P[2], Khishigsuren Z
[1]Department of Mental Health, School of Medicine, MNUMS
[2] National Center for Mental Health

Intellectual disability is spreading widely around the world in last 30 years. Mongolian national center for mental health`s Statistical data 2013 shows there are 47.6% (n=3009) of total 6317 outpatients are in activated control and take health care services. But according to public low knowledge of mental health, there are many incidents of stigma and discrimination towards people with mental illness and their family.
Methodology: We aimed to study how people discriminate, stigmatize and labeling in bad way people with mental illness by assessing 42- item questionnaire (MICHAEL KING, SOKRATIS DINOS).
Results of study: We included in our study 46(51.1%) males and 44(48.9%) females, totally 90 people who were aged between 19-60 years old which mean age was 37.4±1.1. 78.8% of subjects were shown as feeling alone from mental illness, n=57, 63.3% of subjects were had a thought that people mistreat them because of their mental illness,and 68.8% of subjects said that it is irrigating how people treating their medical condition, the p score was 0.047. These reports shows that how public or family of people with mental health make them stay at home and to do nothing is making them isolated from society, lose their self esteem, self-care ability and they will become disabilitated person who depends on others.
Conclusion: According to public low education of mental health, there are many incidents of stigma and discrimination towards people with mental intellectual disability by their behavior and mental illness.
Key words: Stigma, family, society, discrimination

Results of study on examining the factors contributing to sleep disturbance and determining serum melatonin levels

D.Delkhiitsetseg[1], E.Odkhuu[1], M.Munkhzol[1]
[1]MNUMS, School of Pharmacy and Bio-Medicine.

Summary: Sleep is a complex neurochemical process that occurs in the brain. Disorders of sleep patterns such as insomnias or excessive somnolence and changes in sleep cycle have a negative effect on both physical and mental health. Melatonin is excreted in humans by the pineal gland and is called "night hormone" as it is suppressed by light and activated by darkness. The melatonin levels are influenced by many factors such as age, sex, and body weight and disturbance of the daily rhythm leads to sleep disturbance. Anxiety and depression caused by social relations as well as personal lifestyle and behaviors are among many factors that cause sleep disturbance.

The study was conducted using a cross-sectional study design with a random sample of 203 relatively healthy adults, and used the Pittsburgh Sleep Quality Index (PSQI), The State-Trait *Anxiety Inventory* (STAI), *Center for Epidemiologic Studies Depression Scale* (*CESD*). The study participants were divided into case and control groups and their serum melatonin levels were determined using the Melatonin ELISA kit at 0200 and 1000 hours.

Although the study participants did not seek medical help for their sleep disorders, the PSQI test results showed that 46.3% (n=94) had sleep disturbance and 53.7% (n=109) had normal sleep. The PSQI tests revealed that the average score (8.9 ± 2.8) of the participants with sleep disturbance was 3.17 times higher than that of the participants without sleep disturbance (2.8 ± 1.5) showing significant increase ($P < 0.0001$). The factors such as drinking strong tea or coffee before bedtime (OR=7.0; p=0.012), depression (OR=4.2; p=0.015), chronic stress (OR=2.6; p=0.009), irregular bedtime (OR=2.3; p=0.005), and eating a heavy meal before bedtime (OR=2.1; p=0.049) increased the risk of acquiring sleep disturbance, while sleeping at daytime among participants with normal sleep (OR=0.5; p=0.025) was a protective factor to prevent sleep disturbance. Serum melatonin levels were not affected by age and sex, while in participants with sleep disturbance they were decreased at night (cases 335.98 ± 192.69 pg/ml, controls 396.43 ± 199.1 pg/ml), and increased in the morning (cases 299.41 ± 182.43 pg/ml, controls 237.78 ± 193.84 pg/ml), which demonstrated the disturbance of daily rhythmic pattern of the hormone activation ($p < 0.05$).

Key words: Anxiety, depression, stress, sleep disturbance, melatonin.

Identification of n. Meningitidis between children in sukhbaatar and bayangol district .

B.Uyanga, MD[1], N. Munkhtuvshin PhD, Prof [2,] M. Oyundelger PhD[3]
[1] SOS Medica Mongolia UB International Clinic
[2] Central Scientific Research Laboratory, Nat'l Institute of Medicine, Mongolia
[3] MALM

Objectives: Detection of carrier state of meningococcal infection and study of their distribution in different area of Ulaanbaatar city for the period of January – April 2011.
Materials and Methods: 4720 throat swabs were collected and inoculated on Thayer – Martin agar medium, as used for primarily isolating Neisseria meningitidis and as the medium that inhibits the growth of the most other microorganisms. Biochemical properties of the isolated strains characterized on medias, enriched with different carbohydrates such as glucose, maltose, saccharose and lactose. Standartized methods have been used for testing of oxidase activity and serological typing.
Results: For the period of 2005 – 2010 registered several cases of spreads of meningococcal meningitis in the city, preceded by increase of "healthy" carriers of meningococci, who considered as the source of spreads to the surrounding people. 514 samples give growth of the N. meningitidis, where serogroup B detected as most prevalent type (69.74%), followed by serogroup C (10.3%) and serogroup A as the lowest type (0.19%), with irregularity in distribution in different parts of the city.
Highest positivity of carrier states were revealed geographically in Sukhbaatar and Bayan – Gol districts as taken together (70% of the total growth), and peak of the positivity of months of January and February followed by marked decline in the month of April. Age group of positivity falls between 0 and 7 years (65%), as expected and most of them were from kinder garden and only 27 kids were from home staying places.
Conclusion: 1. Serogroup B is the main type (~70%) of the meningococcal strain in Ulaanbaatar city and serogroup A is the least one (0.19%), with no registered serotype of D and Y.

1. Epidemiologically important carrier states were detected mostly in children visiting communal institutions like kinder gardens and schools (405 cases) and were characterized by seasonal and geographical differences in the city.

Electroclinical Study of Posttraumatic Epilepsy in Ulaanbaatar

Amarjargal Myangaa Tsagaankhuu Guntev Tovuudorj Avirmed
Department of Neurology, Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia

Purpose: To study clinical manifestations of the posttraumatic epilepsy, the variants of its course.
Methods: Descriptive study of 109 patients with PTE coming to districts health associations in Ulaanbaatar and central first clinic during 2011-2013. We obtained history of patients, questionnaire, clinical examination were conducted to evaluate the seizures in accordance with semiological classification of epileptic seizures and the international classification International League Against Epilepsy.Clinical data were matched with the results of the electroencephalography (EEG), computed tomography (CT) and magnetic resonance imaging (MRI) investigations.
Results: Of 109 patients, 85% (93) presented secondary generalized partial seizure (SGPS), 15% (16) partial seizure, 60.5% (66) motor phenomena.There was no obvious correlation between symptoms, duration and seizure type of PTE. The frequency of seizure was not correlated with the structural brain abnormalities, but there was inverse association between seizure freetime and duration of PTE. PTE was positively correlated with severe injury, contusion, early onset of seizures, operative brain injury.
conclusion: Clinical feature of PTE is presented by secondary generalized seizure(85%) and 60.5% by motor phenomena. PTE characterized by long duration with high frequency of seizure (90%), various clinical manifestations. PTE is caused by severity, type of head injury and operative brain injury

Prevalence of structural abnormalities in mongolian patients with epilepsy as detected by 1.5t MRI

B. Bolorsaikhan[1], P. Tugsjargal[2], G.tsagaankhuu, A. Tovuudorj[3], D.tuvshinjargal[2,4]
1- Department Of Radiology, Postgraduate Institute, Health Sciences University Of Mongolia, 2- Department Of Radiology, School Of Medicine,Mongolian National University Of Medical Sciences, 3-Department Of Neurology, School Of Medicine,Mongolian National University Of Medical Sciences, 4- Department Of Radiology, Ulaanbaatar Songdo Hospital, Ulaanbaatar, Mongolia.
Corresponding address: UB SONGDO hospital, choidogstreet-5, khoroo 1st, sukhbaatar district, ulaanbaatar-210648, Mongolia, khuleejbai@yahoo.com

Objectives: Epilepsy is one of the major public health concerns in Mongolia. Introduction of the first 1.5t mr scan in 2007 allowed for the first time a fine visualization of brain parenchyma in Mongolia which evaluation is essential in modern clinical workup of seizure

patients. This is an initial report on systematic review of radiological findings in mongolian seizure population.

Methods: Data were reviewed from 171 consecutive patients with seizures referred between January 2010 and January 2013. All patients underwent MRI examination at 1.5 t scanner siemens magnetom using a standard epilepsy protocol.

Results: Mean age was 26.688±16.42sd. Female-to-male ratio was 90:81. An abnormality likely to be related to seizure activity was identified in 55/171 (32.1%) patients, with mesial temporal sclerosis diagnosed in 16 patients. Congenital malformations of cortical development were found in 4 patients. Vascular malformations were detected in 8 patients. In 7 patients, brain tumor was diagnosed. Stroke-related findings were noted in 9 patients.

Conclusions: The introduction of the 1.5t mr imaging and pacs at Ulaanbaatar songdo hospital allowed for the first time in Mongolia a dedicated detection and data storage for systematic review and follow-ups of radiological abnormalities of seizure patients. This study highlights the prevalence of significant structural pathology in a clinical setting using 1.5 t MRI scanner in Mongolia. Relatively high prevalence of mesial temporal sclerosis may reflect the targeted selection of drug-resistant epilepsy cases for MRI examination, which is not covered by national health insurance.

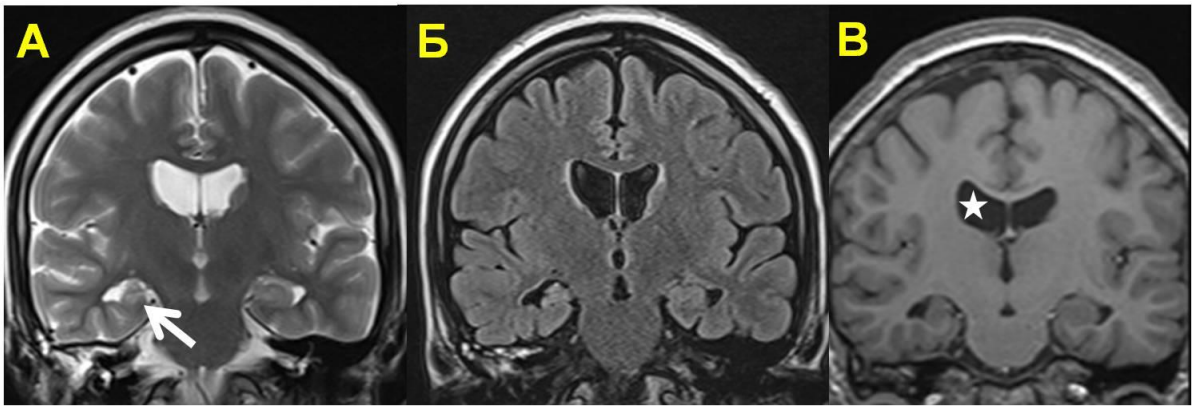


Fig 1. Female epilepsy patient had her first documented seizure at age of 4, epilepsy diagnosis was established in 1996. First mri examination at age of 37. Under aed, but experiences daily 1-2 episodes of seizure.а-т2wi, 6- flair,в- t1mprage.

Right hippocampus shows significant volume decrease with blurring of internal structures(white arrow). Secondary sign of hippocampal atrophy is dilatation of the right lateral ventricle (white asterisk).

Neurozan® Original - Неврозан

“Хамгийн төгс төгөлдөр машин”-д зориулсан сүүлийн үеийн тэжээл!

Танин мэдэхүйн үйл ажиллагаа & Оюуны үйл ажиллагаа

Хүний тархи бол ертөнц дээрх хамгийн төгс төгөлдөр машин бөгөөд таны мэдрэлийн системийн хамгийн том, хамгийн чухал хэсэг юм. Энэ нь бидний мэдрэхүй, хөдөлгөөн, ой ухааныг холбож байдаг 80 тэрбум гаруй мэдрэлийн судсыг агуулж байдаг. Тархи нь тархины эрүүл мэнд, үйл ажиллагааг хамтад нь зохицуулж байдаг төрөл бүрийн бичил элемэнтүүдээс тэжээл авдаг бөгөөд бидний хоол хүнснээсээ

авдаг энергийн 30 гаруй хувийг зарцуулдаг.

Цайр, иод, B6, B12, фолийн хүчил зэрэг тодорхой “тархины” тэжээлүүд нь тархины үйл ажиллагааг дэмжих үйлчилгээтэй. Тархины эсүүдийг солих боломжгүй бөгөөд эдгээр нь хамгийн өндөр ач холбогдолтой бичил эрхтэнүүд юм.

Тархины бичил тэжээлүүд

Neurozan® хүнсний нэмэлт бүтээгдэхүүн нь биеийн ерөнхий эрүүл мэндийг дэмжих, танин мэдэхүйн хэвийн үйл ажиллагаанд тустай чухал элемэнтүүдийг агуулсан байдаг. . Фосфатидил,ко-энзим Q10 нь тархины эсийн үйл ажиллагааг идэвхтэй дэмжигч биоэлемент. С, Е аминдэм нь тархины эсийг чөлөөт радикалын үүсгэх гэмтлээс хамгаална. Фосфатидилсерин,холин нь мэдрэлийн системийн үйл ажиллагааг сайжруулахад чухал үүрэгтэй бөгөөд ой санамжийг сэргээж өгнө. B1, B2, B6, фолийн хүчил, пантотеник хүчил, ниацин нь мэдрэлийн эсийг тэжээлээр хангаж, үйл ажиллагааг идэвхжүүлнэ.

Оюуны үйл ажиллагаа

Төмөр, цайр, иод нь танин мэдэхүйн үйл ажиллагаанд хувь нэмрээ оруулдаг бол пантотений хүчил нь оюуны үйл ажиллагааг дэмждэг.

Мэдрэлийн систем

B6 аминдэм, ниацин (vit. B3), С аминдэм нь мэдрэлийн системийн хэвийн үйл ажиллагаанд сайн нөлөөтэй.

Сэтгэхүйн үүрэг

B12, B6 аминдэм, тиамин (vit. B1), фолийн хүчил, С аминдэм, магни зэрэг нь сэтгэхүйн үйл ажиллагаанд маш тустай.

Нэмэлт шимт бодисууд:

Глутамин, L-Глутатион, L- Аргинин, Ко-энзим Q10, фосфатидилхолин, фосфатидилсерин,

D3 амин дэмийн зохист түвшин

Холекальциферолын илүү сайжруулсан, идэвхтэй хэлбэр болох D3 аминдэмийг хамгийн зохистой буюу 25мкг (1000IU) хэмжээгээр агуулсан байдаг.

Ерөнхий эрүүл мэнд & амьдрах чадвар

Сайжруулсан тэжээлийн найрлаганд биеийн ерөнхий эрүүл мэнд, амьдрах чадварыг дэмжих олон төрлийн шимт бодис агуулагдсан байдаг.

С амин дэм, төмөр, зэс нь биеийн эрч хүчийг сэргээнэ.

Селен, цайр зэрэг нь дархлааны системийг дэмжинэ.

B6 & B12 аминдэм нь цусны улаан эсийн хэвийн бүрэлдэх үйл явцад хувь нэмрээ оруулдаг.

Хэрэглэх арга: Өдөрт 1 удаа 1 шахмалыг хоолны дараа 1 аяга усаар даруулж ууна.

Анхааруулга: 25 хэмээс хэтрэхгүй дулаантай, хуурай, гэрлээс хол нөхцөлд хадгална. Хүүхдээс хол байлгана.Шахмалыг зажилж болохгүй. Өлөн үед ууж болохгүй. Тунг хэтрүүлж болохгүй.

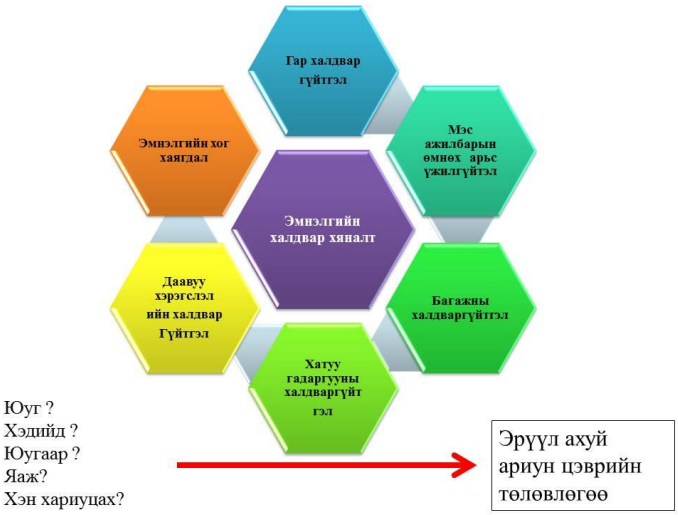
Медклиин ХХК-нийн танилцуулга

Манай байгууллага нь "Эмнэлгийн халдвар хяналтын тогтолцоог бэхжүүлэх " стратегийг хэрэгжүүлж халдварт өвчнөөс урьдчилан сэргийлэх, эмнэлгээс шалтгаалах халдварыг бууруулах бүхий л нөхцөлийг бүрдүүлэхэд хувь нэмэр оруулах зорилготойгоор 2012 онд байгуулагдан ажиллаж байна.

Манай компани нь дараах чиглэлүүдээр үйл ажиллагаагаа явуулж байна. Үүнд:

1. Ариутгал, халдваргүйтгэлийн бодисын ханган нийлүүлэлт
2. Ариутгалын боолтын материал ханган нийлүүлэлт
3. Ариутгалын хяналтын индикаторуудын ханган нийлүүлэлт
4. Ариутгалын чанарын физик, биологийн хяналт хийх
5. Эмнэлгийн халдвар хяналтын ажилтаны сургалт хийх, зөвлөгөө өгөх

Эмнэлгийн халдвар хяналтын үйл ажиллагаа нь дэлхийн аль ч улсад, ямар ч эмнэлэгт доорхи зургаан хэсгээс бүрддэг бөгөөд эдгээр хэсгүүдийн халдваргүйтгэл чанартай хийгдсэний үр дүнд эмнэлгийн халдвар хяналт олон улсын стандартыг хангана. Манай компани нь доорх чиглэлүүдээр бүх төрлийн халдваргүйтгэлийн бодисын ханган нийлүүлэлтийг хийж байна.



Манай компани нь ариутгал, халдваргүйтгэлийн бодисоо ХБНГУ-ын Роберт Кохын нэрэмжит "Халдварт өвчин судлалын институт"-ийн "Эмнэлгийн халдвар хяналтанд хэрэглэхэд зөвшөөрөгдсөн бодисын жагсаалт" номноос сонгон авдаг бөгөөд дэлхийд алдартай Эколаб компаний ХБНГУ дахь салбараас ханган нийлүүлэлтийг хийдэг.

Medclean

Шуудан хаяг:44-607
Гар утас: (976)95902080, (976)96889964
e-mail: medcleanmongolia@gmail.com
web: medclean.mn

MONGOLIAN ASSOCIATION OF
LABORATORY MEDICINE

Монголын Лабораторийн Онош Зүйчдийн Нийгэмлэгийн тайлан танилцуулга

Монголын Лабораторийн Онош Зүйчдийн нийгэмлэг хүн амын эрүүл мэндийн энхийн манаанд эмнэлгийн лабораторийн тусламжийг хүртээмжтэй чанартай хүргэх, бусад зорилго нэгт нийгэмлэгүүдтэй хамт гишүүн орнуудын анагаахын шинжлэх ухааны хөгжлийг нэвтрүүлэх, дэмжих, зорилготой болно. Уг нийгэмлэг нь Лабораторийн Онош Зүйчдийн үндэсний семинарыг 2 жилд нэг удаа тогтмол зохион байгуулдаг. Энэ удаад 2015 оны 03 сарын 20 өдөр ***"Аутоиммун шалтгаант өвчнүүдийн оношлогооны орчин үеийн чиг хандлага"*** сэдэвт XIII удаагийн үндэсний семинарыг Монголын Үндэсний Худалдаа Аж Үйлдвэрийн Танхим дээр амжилттай зохион байгууллаа.

Тус нийгэмлэг нь Ази Номхом Далайн Орнуудын Лабораторийн Эмч, Эмгэг судлаач эмч нарын Нийгэмлэгийн гишүүн агаад Япон, Индонези, Тайван, Солонгос улсын мэргэжил нэгт эмч лаборант нартай технологийн хөгжилтэй хөл нийлүүлэн алхаж байна.

Энэ удаагийн МЛОЗН үндэсний семинар зохион байгуулах хорооны гишүүд нь хот хөдөөгийн нийт 40 гаруй мэргэжил нэгт эмч, лаборант нарыг хамруулан "Аутоиммун шалтгаант өвчнүүдийн оношлогооны өнөө үеийн дэлхийн чиг хандлагыг" танилцуулж соён гэгээрүүлэх бас нэгэн том алхам хийлээ.

Монголын Лабораторийн Онош Зүйн салбарын өнөөгийн төлөв байдлыг Эрүүл Мэндийн Яамны Салбар Зөвлөлөөс танилцууллаа. Цаашдын хэтийн төлөвийг хамтран хэрхэн шийдвэрлэх талаар санал дэвшүүллээ.

Монголын Үндэсний Худалдаа Аж Үйлдвэрийн Танхимын дэргэдэх "Итгэмжлэгдсэн Лабораторийн Зөвлөл"-ийн мэдээлэл уг семинарын бас нэгэн чухал хэсэг байлаа. МҮХАҮТ 40 гаруй салбар зөвлөлийн нэг "Итгэмжлэгдсэн Лабораторийн Зөвлөл"-тэй Монголын Лабораторийн Онош Зүйчдийн Нийгэмлэг хамтран ажиллах болсон баяртай мэдээтэй байна. Энэ нь эмнэлгийн лабораториудын эрх ашгийг хамгаалах, өөрийн лабораторийг итгэмжлүүлэх зэрэг олон асуудлыг шийдвэрлэх эхний алхам болсонд бид баяртай байна.


ЭРҮҮЛ МЭНД,
СПОРТЫН ЯАМ
Welcome to participants "Current trends in the diagnosis of autoimmune diseases"
XIII the national educational seminar of the Mongolian Association of Laboratory Medicine
Зурагчин 99184012
March 20.2015 Ulaanbaatar, Mongolia

Монолаб ХХК-ний амжилтын түүчээ

Монолаб ХХК-ийн толгой компани болох Human ХХК нь 2015 оны 08 сард Монголын Үндэсний Худалдаа Аж Үйлдвэрийн Танхимийн дээд шагнал болох "Silk Road Awards"-аар шагнагдлаа.

МАНАЙ ХОЙМОРТ ТАВТАЙ МОРИЛНО УУ

Дээд тэнгэрээс заяат эх сайхан Монгол орондоо Анагаах эрдэм, Лабораторийн Онош Зүйн ухааныг хөгжүүлж, увидас шимийг түмэн олондоо хүртээхийн төлөөнөө 1996 онд "Монолаб" ХХК хэмээх айл гэрийг цогцлоосон билээ.

Бид багаж тоног төхөөрөмж, эмнэлгийн хэрэгсэл, урвалж оношлуурын чанар нь баталгаатай, технологийн дэвшил нь байнга төгөлдөржиж байдаг дэлхийн нэртэй үйлдвэрлэгч нартай хамтран ажиллаж байна.

Улс орны өнцөг булан бүрт зон олны эрүүл мэндийн төлөө зүтгэж яваа сум, өрх, аймаг, нийслэлийн болон улс, хувийн хэвшлийн эмнэлгийн эмч нар маань манай нэвтрүүлсэн технологи дээр тулгуурлан байж онош тавьдаг болсонд үнэнхүү сэтгэл хангалуун байдаг билээ.

ЗОРИЛГО

"ШИНЖЛЭХ УХААН ТЕХНОЛОГИЙН ТЭРГҮҮН ШУГАМАН ДЭЭР"

ЗОРИЛТ

- Баталгаатай, төгс чанартай бүтээгдэхүүн
- Шуурхай, найдвартай, ээлтэй үйлчилгээ
- Технологийн дэвшил, оновчтой шийдэл

КОМПАНИЙН ШАГНАЛУУДААС

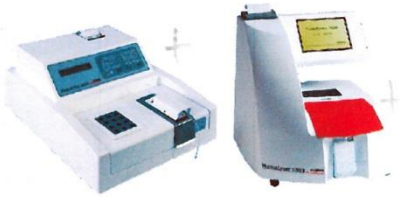
- 2005 онд Нийслэлийн "ХЭРЭГЛЭГЧИЙН НАЙДВАРТАЙ ТҮНШ" байгууллага Нийслэлийн хэрэглэгчдийн эрх ашгийг хамгаалах нийгэмлэгээс
- "Эрхэм дээд бахархал" Монголын дархлаа, бичил амь судлалын нийгэмлэг, ЭМШУИС, Биоанагаахын Сургуулийн өргөмжлөл 2010/03/26
- 2009 оны "ТОП-100-д ӨРСӨЛДӨГЧ 50" аж ахуйн нэгжээр шалгарав. МХАҮТ 2010/04/20
- 2011 оны "ТОП-150" аж ахуйн нэгжээр шалгарав. МХАҮТ 2012/04/16
- 2011 оны онцлох импортлогч хатагтай Lady Entrepreneur-2011 эмэгтэй МХАҮТ 2012/03/06
- 2012 оны "ТОП-150" аж ахуйн нэгжээр шалгарав. МХАҮТ 2013/04/18

ХАЯГ: Улаанбаатар хот. Баянгол дүүрэг
5-р хороо, 10 хороолол /16081/
Энхтайвны өргөн чөлөө-115
Харилцах утас: 976-11-688134
Факс: 976-11-688134
E-mail: icplab@magicnet.mn,
onukha69@yahoo.com
Web: www.monolab.mn

МОНОЛАБ ХХК

HUMAN DIAGNOSTICS WORLDWIDE

Биохимийн бүрэн автомат анализатор



Humalyzer 2000 Humalyzer 3500
Биохимийн хагас автомат анализатор

Шинэ технологи Humalyzer Primus
Биохимийн хагас автомат анализатор

Центрифуг

Гемоглобин тоологч

Гематологийн хагас автомат анализатор
Гематологийн бүрэн автомат анализатор

Шээсний хагас автомат анализатор
Шээсний бүрэн автомат анализатор

Humareader өндөр хурдтай уншигч

Humareader энгийн уншигч

Шээсний шинжилгээний туузан оношлуур

Биохимийн шинжилгээний оношлуур

Шинжилгээний пипетка /шимүүр/

Humastar 100

Humastar 150
Биохимийн шинжилгээний автомат анализатор

Humasens new

Humasens old
Захын цусан дахь сахар тодорхойлогч

МАНАЙ ҮЙЛЧИЛГЭЭ

Мэргэшсэн инженерийн баг, урт хугацааны хамтын ажиллагаатай дэлхийн брэндүүд, технологийн дэвшлийг хадгалсан бүтээгдэхүүнүүд, бүтээлч сэтгэлгээтэй, туршлагатай баг хамт олон бол бидний давуу тал юм.

MEDIMPEX INTERNATIONAL

ИНЖЕНЕР ТЕХНИКИЙН ЗАСВАР ҮЙЛЧИЛГЭЭ

- Засвар үйлчилгээний төвийн баталгаат засвар үйлчилгээ
- Дүүдлагын засвар үйлчилгээ
- Гэрээт засвар үйлчилгээ
- Олимпусын засварын төвийн үйлчилгээ

ХУДАЛДАА, ТҮГЭЭЛТИЙН ҮЙЛЧИЛГЭЭ

- Медимпекс Эрүүл мэндийн худалдааны төвийн үйлчилгээ
- Бөөний борлуулалтын үйлчилгээ
- Бүтээгдэхүүн захиалгын үйлчилгээ
- Гэрээт борлуулагчийн үйлчилгээ

ТӨСӨЛ ХӨТӨЛБӨР

- Өөрийн орны болон гадаад орон, олон улсын байгууллагын төсөлд санал боловсруулах, хэрэгжүүлэх
- Эмнэлэг болон лабораторуудад тоног төхөөрөмжийн талаар зөвлөх үйлчилгээ
- Эмнэлгийн болон лабораторийн тоног төхөөрөмжийн ханган нийлүүлэлт
- Төсөл хөтөлбөрийн хүрээнд мэргэжлийн түвшний сургалт зохион байгуулах

МАНАЙ ХАЯГ

Медимпекс Интернэйшнл ХХК

Монгис тоуэр – 803 тоо,
Чингисийн өргөн чөлөө-15,
Сүхбаатар дүүрэг, 1-р хороо,
Улаанбаатар, Монгол Улс
Утас: (976) 7012 0429
Факс: (976) 11 318254
И-мэйл: info@medimpex.mn
Вэб: www.medimpex.mn

Медимпекс Эрүүл мэндийн худалдааны төв

Барилга Мега Стор, 1 давхар
Сүхбаатар дүүрэг, 1-р хороо
Утас: (976) 9112 0429, 7712 0429
Факс: (976) 11 318254
И-мэйл: info@medimpex.mn
Вэб: www.medimpex.mn

Медимпекс засварын төв

Барилга Мега Стор, 3 давхар
Баянзүрх дүүрэг, 1-р хороо
Утас: (976) 7711 1155
Факс: (976) 11 318254
И-мэйл: service@medimpex.mn
Вэб: www.medimpex.mn

ТАЛАРХАЛ

Эрхэм хүндэт **БУЛГА МЕДИКАЛ ХХК**-ний хамт олонд

Эрхэм хүндэт Н. Одонгуа захиралтай **СУВИЛАХУЙН СУРГУУЛИЙН** хамт олонд

Эрхэм хүндэт **МОНОС ФАРМ ХХК**-ний хамт олонд

Эрхэм хүндэт **МОНГОЛЫН ЛАБОРАТОРИЙН ОНОШ ЗҮЙЧДИЙН НИЙГЭМЛЭГИЙН** хамт олонд

Эрхэм хүндэт **МОНОЛАБ ХХК**-ний хамт олонд

Эрхэм хүндэт **МЕДИМПЕКС ХХК**-ний хамт олонд

Эрхэм хүндэт **МЕДКЛИИН ХХК**-ний хамт олонд

"MULTIDISCIPLINARY BRAIN SCIENCE-2015" олон улсын хурлыг зохион байгуулахад дэмжлэг үзүүлэн хамтран ажилласан Танай хамт олонд ажлын амжилт, аз жаргал, сайн сайхныг хүсэн ерөөж **ТАЛАРХАЛ** илэрхийлье.

Монголын Нейросайнсын
Нийгэмлэгийн ерөнхийлөгч Б.Дамдиндорж

2015 оны 8-р сарын 29.

Улаанбаатар хот

МӨНОС
ФАРМ

ДИКЛОМОН

Диклофенак натри

Хөдөлгөөний эрх чөлөө

ЭЗАМОН

Пирацетам / Циннаризин

Тархины эрчим хүч

ЦитроМакс

Ацетилсалицилын хүчил+Парацетамол+Кофейн

Өвдөлтгүй амьдрал

МОНОС
ФАРМ

АМЛОМОН

Амлодипин

Артерийн даралтыг аюулгүй түвшинд хүргэнэ

ЭНАФ

Эналаприлийн малеат

Имфортын бүтээгдэхүүнийг орлохуйц чанар, үр дүн

АСПИРИН 100, АСПИРИН 81

Ходоодны хүчилд тэсвэртэй бүрхүүлтэй шахмал

Таны төлөө зуу зуун жил

Хаяг: 211137 Улаанбаатар хот
Сонгинохайрхан дүүрэг-20, Сонголонгийн зам 45
Утас: 70173107, Факс: 70170317
www.monospharma.mn, E-mail:pharma@monos.mn