2019

3/30
3/31

台灣睡眠醫學學會

17th Annual Meeting of Taiwan Society of Sleep Medicine

亞洲嗜睡症會議

2nd Conference of Asian Narcolepsy & Hypersomnolence Society

17th Annual Meeting of Taiwan Society of Sleep Medicine

2nd Conference of Asian Narcolepsy & Hypersomnolence Society

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Welcome Message

President of Taiwan Society of Sleep Medicine

Dear friends,

On behalf of Taiwan Society of Sleep Medicine (TSSM), it's my great honor in welcoming all of you to Taipei for upcoming 17th annual scientific meeting of TSSM in conjunction with 2nd Asian Narcolepsy & Hypersomnolence Society. In the 21st century, somnolence are one of the important public health issue. In this conference, excessive daytime sleepiness will be the main issue. We are please to have distinguished guests from aspects countries focusing on EDS from Occasion both narcolepsy and Obstructive sleep apneal. I believe it's on extra ordinary for us to share experience and learn from each other in this interesting issue of EDS. Besides, sleep technology, artificial intelligence, molecular sleep, and insomnia update will come under spotlight with comprehensive discussion.

Taiwan is a beautiful island, Taipei is a city with warmeet passion. I hope you will enjoy this Taipei trip and have beautiful harvest in both medicine and travel.

Hsueh-Yu Li MD. FACS

President, Taiwan Society of Sleep Medicine.

President of Asian Narcolepsy & Hypersomnolence Society

Welcome remarks for the 2nd ANHS Congress in Mar.30-31, 2019 at Chang Yung-Fa Foundation International Convention Centerin Taiwan.

March. 22nd. 2019

Congratulation for the 2nd Asian Narcolepsy Hypersomnolence congress scheduled during Mar.30-31, 2019 at Chang Yung-Fa Foundation International Convention Centerin Taiwan.

The 1st congress was successfully held in COEX, Korea in 2017, March. 24-25, with almost 300 attendants.

Asian Narcolepsy Forum,which started from 2006,decided to found Asian Narcolepsy and Hypersomnolence Society(ANHS) in 2017. Since then, we have had many activities including research and participation inthe symposium of World Sleep Congress. We have been collaborating in researchon type 2 narcolepsy. Also, we, board members, made a presentation of our research data at the symposium on 7th Narcolepsy International Symposium organized by Thomas Scammell atHarvard University during 2018. Sep.9(Sun.) - Sep. 14(Fri.) held in Boston, Massachusetts, Wylie Inn. I believe our ANHS society will grow year by year with the increasing number of narcolepsy patients recognized by Asian community.I hope our society contribute to promoting sleep health of patients with narcolepsy and hypersomnolence in Asia. Also I hope Asian narcolepsy society continue to develop as a big and strong society in the future, and ask for your efforts and help.

Finally, I hope this congress will commemorate our long maintained friendship, with abundant research topics to attract students, residents, sleep technicians, and clinical investigators around the world.

Seung Chul Hong

President of Asian Narcolepsy and Hypersomnolence Society

Scientific Chairman

Dear Colleagues and Friends,

We are extremely happy to invite you to participate in the 17th Annual Meeting of Taiwan Society of Sleep Medicine (TSSM) in conjunction with 2nd Asian Narcolepsy and Hypersomnolence Society Meeting(ANHS) which will be held in Taipei , Taiwan.

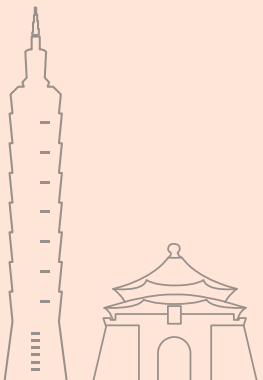
The Scientific committee has worked hard to conduct a diversified series of symposia touching recent advances in the field of " daytime sleepiness ". We have invited most world-renowned researchers, most updated perspective in the field of hypersomnolence, narcolepsy, OSA and other sleep disorders. The differential diagnosis of hypersomnolence and the new trends in treatment will be shared and discussed also. We believe the meaning this meeting harbors, as well as the scientific genuineness of our symposia will attract you all.

We invite all of you to participate to the success of the meeting and hope to see you in Taipei, Taiwan.

Yu-Shu Huang

Scientific Chairman,

17th Annual Meeting of Taiwan Society of Sleep Medicine (TSSM) and 2nd Asian Narcolepsy & Hypersomnolence Society (ANHS)



台灣睡眠醫學學會 108 年度第十四屆學術研討會
暨第二屆 Asian Narcolepsy & Hypersomnolence Society (ANHS) 年會

籌備委員

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鄔定宇　雙和醫院睡眠中心主任

蘇茂昌　高雄長庚胸腔內科主治醫師

Agenda

At CHANG YUNG-FA FOUNDATION International Convention Center , Taipei , Taiwan (張榮發基金會國際會議中心 8F)

Date 2019-03-30 to 2019-03-31

The Theme Excessive Daytime Sleepiness (EDS) and Sleep Disorders

2019-03-30 (Saturday)	Room 802 (Excessive Daytime Sleepiness and Narcolepsy : ANHS meeting)	Room 801 (Excessive Daytime Sleepiness and Obstructive Sleep Apnea)	Room 803 (Excessive Daytime Sleepiness and Insomnia)
12:00-17:00	Registration		
13:30-14:00	13 : 30-13 : 45 Opening : President of TSSM (Prof. Hsueh-Yu Li)(TSSM 主席致詞) 13 : 45-14 : 00 Opening : President of ANHS (Prof. SeungChul Hong)(ANHS 主席致詞)		
Keynote lecture			
14:00-14:50	History of diagnosis of type 2 narcolepsy and the future diagnosis of narcolepsy in ICSD-4) Prof. Christian Guilleminault(USA, Stanford) Moderator : Prof. Hsueh-Yu Li 李學禹		
14:50-15:15	Coffee Break		
15:15-17:20	**Symposium 1 (Future Research and Development of Narcolepsy)** Moderators : Prof. SeungChul Hong Prof. Yun Kwok Wing	**Symposium 4 (OSA, EDS and theintegrated treatment)** Moderators : Prof. Cheng-Hui Lin 林政輝 Prof. Li- Ang Lee 李立昂	**Symposium 7 (Insomniaand related issues)** Moderators : Prof. Hsin-Chien Lee 李信謙 Prof. Chien-Ming Yang 楊建銘
(1) 15:15-15:40	Neuroimmune diseases in narcolepsy Dr. Ayalmanishi (Japan)	Sleep and Breathing Problems of Korean Professional Drivers Dr. Sungmin Kim (Korea)	(15:15-15:30 pm) Insomnia update Prof. Hsin-Chien Lee (Taiwan)
(2) 15:40-16:05	New evidence of Flu virus infection as a trigger for Narcolepsy Prof. Fang Han (China)	Soft tissue surgery in the Treatment of OSA Prof. Li- Ang Lee 李立昂 (Taiwan)	(15:30-16:05 pm) CBT-I via Videomedicine Dr.Daniel Jin Blum (USA, Stanford)

2019-03-30 (Saturday)	Room 802 (Excessive Daytime Sleepiness and Narcolepsy : ANHS meeting)	Room 801 (Excessive Daytime Sleepiness and Obstructive Sleep Apnea)	Room 803 (Excessive Daytime Sleepiness and Insomnia)
(3) 16:05-16:30	EWAS of DNA methylation and integrated approach for Narcolepsy Prof. Makoto Honda (Japan)	Bone Surgery in the Treatment of OSA Dr. Cheng-Hui Lin 林政輝 (Taiwan)	Complemental treatment of insomnia Prof. Ling-Sheng Jang 張凌昇 Prof. Yu-Shu Huang 黃玉書 (Taiwan)
(4) 16:30-16:55	An orexin 2 receptor-selective agonist, TAK-925, shows robust wake-promoting effects in mice and non-human primates, and ameliorates narcolepsy-like symptoms in orexin/ataxin-3 mice Dr.Haruhide Kimura (Japan)	Bariatric surgery in the Treatment of OSA Dr.Keng-Hao Liu 劉耿豪 (Taiwan)	The metabolic effect of insomnia Dr. Samson Fong (Hongkong)
(5) 16:55-17:20	Neuroimaging study in narcolepsy patients Prof.Seung Bong Hong (Korea)	MFT / oral device in Treatment of OSA Prof.Yu-Shu Huang 黃玉書 Dr. Li-Chuan Chuang 莊麗娟 (Taiwan)	The elongation of total sleep time after delaying school start time and its effect on school life Prof. Tae Won Kim (Korea)
17:20-17:30	Closing of the symposium		
17:20-17:50	TSSM Membership Meeting 會員大會		
18:30-20:45	Gala Dinner(At Caesar Park Hotel Taipei)		

2019-03-31 (Sunday)	Room 802 (Excessive Daytime Sleepiness and Narcolepsy : ANHS meeting)	Room 801 (Excessive Daytime Sleepiness and OSA)	Room 803 (Basic Science and sleep)
08:00-11:30	Registration		
08:40-09:10	**Poster viewing and presentation** 主審：Dr. Chun-Pai Yang 楊鈞百 ;Dr Cheng-Yu Lin 林政佑 ; Dr Mao-Chang Su 蘇茂昌 ; Dr Ting-Yu Wu 鄔定宇 ; Prof. Fang-Chia Chang 張芳嘉		
09:10-09:20	**Coffee Breakand poster viewing** 主審：Dr. Chun-Pai Yang 楊鈞百 ;Dr Cheng-Yu Lin 林政佑 ; Dr Mao-Chang Su 蘇茂昌 ; Dr Ting-Yu Wu 鄔定宇 ; Prof. Fang-Chia Chang 張芳嘉		
09:20-11:00	**Symposium 2 (Future treatment of Hypersomnia)** Moderator : Prof. Fang Han Prof. Chung-Yao Hsu 徐崇堯	**Symposium5 (OSA, Technology and Artificial Intelligence)** Moderator : Prof. Yu-Lun Lo 羅友倫 Prof. Wen-Te Liu 劉文德	**Symposium 8 (Basic Science and Research of Sleep)** Moderator : Prof. Fang-Chia Chang 張芳嘉 Prof. Ling-Ling Tsai 蔡玲玲
(1) 09:20-09:45	(09:20-09:50 Am) Update the treatment of Narcolepsy Prof. Christian Guilleminault (USA)	AI and Robotics - Key to Era of Smart Medicine (人工智慧與機器人 - 健康照護的新發展) Prof.Li-Chen Fu 傅立成教授 (台大電機) (Taiwan)	Systems Biology of Mammalian Sleep/Wake Cycles Toward Molecular definition of NREM and REM sleeps Prof. Hiroki Ueda (Japan)
(2) 09:45-10:10	(09:50-10:25 Am) Human research and hypocretin agonist : Where are we and what can we expect? Dr. Deborah S. Hartman (USA)	Sensor Fusion and AI Analysis for SDB Healthcare 睡眠呼吸監測之智慧感測與自動判別系統 黃柏鈞教授 (清大電機) (Taiwan)	Systems Biology of Mammalian Sleep/Wake Cycles Toward Molecular definition of NREM and REM sleeps Prof. Hiroki Ueda (Japan)

2019-03-31 (Sunday)	Room 802 (Excessive Daytime Sleepiness and Narcolepsy : ANHS meeting)	Room 801 (Excessive Daytime Sleepiness and OSA)	Room 803 (Basic Science and sleep)
	(09:50-10:25 Am) Human research and hypocretin agonist : Where are we and what can we expect? Dr. Deborah S. Hartman (USA)		
(3) 10:10-10:35		Sensor Fusion and AI Analysis for SDB Healthcare 睡眠呼吸監測之智慧感測與自動判別系統 黃柏鈞教授 (清大電機) (Taiwan)	Systems Biology of Mammalian Sleep/Wake Cycles Toward Molecular definition of NREM and REM sleeps Prof. Hiroki Ueda (Japan)
	(10:25-11:00 Am) Wakix, the first histamine H3 receptor antagonist in narcolepsy and OSA Prof. Jean-Charles Schwartz (France)		
(4) 10:35-11:00		The four steps for physicians in dealing with AI trend in Medicine : face it, accept it, deal with it and manage it. (臨床醫師對接 AI 醫療的大趨勢：面對，接受，處理，整合) Dr. Tien-Jen Liu 劉天仁醫師 (馬偕耳鼻喉科)(Taiwan)	IL-1-Src family kinases pathway in epileptogenesis and epilepsy-induced sleep disruptions Prof. Fang-Chia Chang 張芳嘉 (Taiwan)
11:00-11:05	Closing of the symposium		
Keynote lecture			
11:05-12:00	Clinical key features and burden of illness of pediatric type 1 narcolepsy Prof. Giuseppe Plazzi(Italy) Moderator : Prof. SeungChul Hong		
12:00-13:00	**Room 802 : (ANHS : Board Meeting)** Prof. SeungChul Hong Prof. Yu-Shu Huang	**Room 801 : Lunch symposium** The Current Evidence on OSA treatment in Pregnancy (妊娠婦女治療阻塞型睡眠呼吸中止症的現況與實證研究) NarichaChirakalwasan, MD (Brojaw company 博兆公司)	**Room 803 : Lunch symposium** Community-Based Services of Home Sleep Apnea Testing in southern Taiwan Dr Cheng-Yu Lin 林政佑 (科林公司)

2019-03-31 (Sunday)	Room 802 (Excessive Daytime Sleepiness and Narcolepsy : ANHS meeting)	Room 801 (Excessive Daytime Sleepiness and OSA)	Room 803 (Basic Science and sleep)
13:00-14:40	**Symposium 3 (Differential diagnosis of Narcolepsy and Hypersomnia)** Moderator : Prof. Giuseppe Plazzi Prof.Seung Bong Hong	**Symposium 6 (OSA and PAP Treatment)(Cases Sharing)** Moderator : Prof. Ning-Hung Chen 陳濘宏 Prof. Kuo-Liang Chiu 邱國樑	**Course Technologist Training and Polysomnogram Scoring Tests** Moderator : Dr. Kun-Ta Chou 周昆達 Mr. Sheng-Yi Liu 劉勝義老師
(1) 13:00-13:25	Comparison of the prevalence of cardiovascular disorder between middle aged patients with narcolepsy and those with idiopathic hypersomnia disorder Prof. Yuichi Inoue (Japan)	Dr. Ming-Tzer Lin 林明澤 Dr. Liang-Wen Hang 杭良文 Dr. Yung-Lun Ni 倪永倫 Dr. Chia-Mo Lin 林嘉謨 (Taiwan)	National Agreement in Sleep andRespiratory Scoring Mr. Sheng-Yi Liu 劉勝義老師
(2) 13:25-13:50	Nocturnal SOREMPs as a Predictor of the Severity of Narcolepsy in Korea Dr. Ji Hye Oh (Korea)	Dr. Ming-Tzer Lin 林明澤 Dr. Liang-Wen Hang 杭良文 Dr. Yung-Lun Ni 倪永倫 Dr. Chia-Mo Lin 林嘉謨 (Taiwan)	Accurate Scoring of Sleep Stages Mr. Sheng-Yi Liu 劉勝義老師
(3) 13:50-14:15	Narcolepsy and RBD Prof. Yun Kwok Wing (Hongkong)	Dr. Ming-Tzer Lin 林明澤 Dr. Liang-Wen Hang 杭良文 Dr. Yung-Lun Ni 倪永倫 Dr. Chia-Mo Lin 林嘉謨 (Taiwan)	Accurate Scoring of Respiratory Events Mr. Sheng-Yi Liu 劉勝義老師

2019-03-31 (Sunday)	Room 802 (Excessive Daytime Sleepiness and Narcolepsy : ANHS meeting)	Room 801 (Excessive Daytime Sleepiness and OSA)	Room 803 (Basic Science and sleep)
(4) 14:15-14:40	Long Term follow up of MSLT variables in Type 2 Narcolepsy in Korea Prof. SeungChul Hong (Korea)	Dr. Ming-Tzer Lin 林明澤 Dr. Liang-Wen Hang 杭良文 Dr. Yung-Lun Ni 倪永倫 Dr. Chia-Mo Lin 林嘉謨 (Taiwan)	Polysomnogram Scoring Tests Dr Kun-Ta Chou 周昆達 Mr. Sheng-Yi Liu 劉勝義老師
14:40-14:45	Closing of the symposium		
14:45-15:00	**Coffee Breakand poster viewing** 主審：Dr. Chun-Pai Yang 楊鈞百；Dr Cheng-Yu Lin 林政佑； Dr Mao-Chang Su 蘇茂昌；Dr Ting-Yu Wu 鄔定宇； Prof. Fang-Chia Chang 張芳嘉		
15:00-16:00	**Room 802 : Oral presentation A (Hypersomnia)** Moderator : Prof. Yuichi Inoue Dr. Wei-Chung Mao 毛衛中	**Room 801 : Oral presentation B (OSA and EDS)** Moderator : Dr. Pei-Lin Lee 李佩玲 Dr. Liang-Wen Hang 杭良文	**Room 803 : Oral presentation C (Sleep related issues)** Moderator: Prof. Lin- Kuang Lin 林光麟 Dr. Li-Pang Chuang 莊立邦
(1) 15:00-15:15	Case reports of Hidden Narcolepsy in Adolescents with Behavioral problems Dr. Ji Hyun Lee (Korea)	Comorbidity of Narcolepsy and Obstructive Sleep Apnea Dr. Hayeon Kim (Korea)	Correlation between Insomnia and Risky Behaviors in Taiwanese Adolescents Dr. Cheng-Fang Yen 顏正芳 (Taiwan)
(2) 15:15-15:30	Nocturnal Sleep in Narcolepsy Patients Dr. Samson Fong (Hongkong)	The study of dynamic cerebral autoregulation in patients with central disorders of hypersomnia Dr. Zan Wang (China)	Interest cases of sleep-related movement disorders Dr. Ming-Yu Chang 張明瑜 (Taiwan)

2019-03-31 (Sunday)	Room 802 (Excessive Daytime Sleepiness and Narcolepsy : ANHS meeting)	Room 801 (Excessive Daytime Sleepiness and OSA)	Room 803 (Basic Science and sleep)
(3) 15:30-15:45	Actigraphy study and different Hypersomnia disorders Prof. Steven Lin (Taiwan)	Altered miR-21-5p and miR-23a-3p expressions in obstructive sleep apnea modulates cell apoptosis by targeting pro-inflammatory genes Dr.Yung-Che Chen 陳永哲 (Taiwan)	Deep brain stimulation of anterior nucleus of the thalamus inPentylenetetrazol-induced seizure rats model enhance REM sleep and decrease NREM delta power Hsin-Tzu Tseng 曾信慈 (Taiwan)
(4) 15:45-16:00	Two cases series of Narcoleptic patients with Sleep Paralysis as a Chief Complaint Dr. Yongwon Choi (Korea)	Parapharyngeal Fat Pad Area at The Subglosso-Supraglottic Level is Associated with Corresponding Lateral Wall Collapse and Apnea-Hypopnea Index in Patients with Obstructive Sleep Apnea : A Pilot Study Dr.Hung-Chin Chen 陳弘晉 (Taiwan)	A false alarm of narcolepsy : obstructive sleep apnea masquerading as narcolepsy and depression Dr. Shuai Liu (China)
16:00-16:05	Closing of the Oral presentation		
16:05-16:30	頒獎 Award and Closing ceremony Prof. Hsueh-Yu Li / Prof. SeungChul Hong		

Speaker and Abstract

3/30 Sat. Opening(Room801)

李學禹 (Hsueh-Yu Li)

Position :

1.Professor of Otolaryngology, Chang Gung Memorial Hospital, Chang Gung University

2.President of Taiwan Society of Sleep Medicine

3.Chairperson, Taiwan Voice Society

Affiliation :

Department of Otolaryngology, Chang Gung Memorial Hospital,

Email : hyli38@adm.cgmh.org.tw

Research Interests :

Snoring, Sleep surgery, Obstructive sleep apnea, Integrated treatment

Opening(Room801)

Seung Chul Hong

Position :
President of Asian Narcolepsy & Hypersomnolence Society Meeting
Professor of Department of Psychiatry

Affiliation :
The Catholic University of Korea, ST. Vincent's Hospital

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Keynote lecture (Room801)

Moderator

李學禹 (Hsueh-Yu Li)

Position :

1.Professor of Otolaryngology, Chang Gung Memorial Hospital, Chang Gung University

2.President of Taiwan Society of Sleep Medicine

3.Chairperson, Taiwan Voice Society

Affiliation :

Department of Otolaryngology, Chang Gung Memorial Hospital,

Email : hyli38@adm.cgmh.org.tw

Research Interests :

Snoring, Sleep surgery, Obstructive sleep apnea, Integrated treatment

Speaker

History of diagnosis of type 2 narcolepsy and the future diagnosis of narcolepsy in ICSD-4)

Christian Guilleminault

Position :
Professor of Psychiatry and Behavioral Sciences – Sleep Center

Affiliation :
Stanford Center for Sleep Sciences and Medicine

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Selected Publications :

1.Guilleminault, C. and Lugaresi, E. (Eds.). Sleep-Wake Disorders : Natural History, Epidemiology, and Long-Term Evolution. Raven Press, New York, 1983.

2.Guilleminault, C. (Ed). Sleep Disorders in Children. Raven Press, New York, 1987.

3.Guilleminault, C. and Partinen, M. Obstructive Sleep Apnea Syndrome : Clinical Research and Treatment. Raven Press, New York, 1990.

4.Leger D. Guilleminault C. Sommeil, Vigilance et Travail. Masson publ. Paris, 1997

5.Guilleminault (ed) Clinical neurophysiology of sleep disorders; Handbook of Clinical Neurophysiology Vol.6. Elsevier Amsterdam-New-York 2005

Symposium 1 -
Future Research and Development of Narcolepsy (Room 802)

Moderator

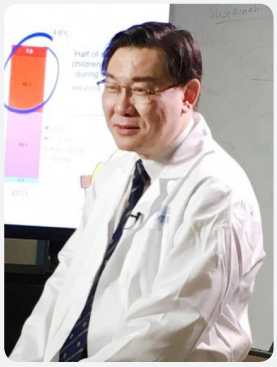
Seung Chul Hong

Position :
President of Asian Narcolepsy & Hypersomnolence Society Meeting
Professor of Department of Psychiatry

Affiliation :
The Catholic University of Korea, ST. Vincent's Hospital

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Moderator



Yun Kwok Wing

Position :
Professor

Affiliation :
Department of Psychiatry The Chinese University of Hong Kong

Research Interests :
sleep and circadian medicine, psychiatric disorders, neuropsychiatry, and transcultural psychopharmacology with extensive publications in international journals

Speaker

Neuroimmune diseases in narcolepsy

Aya Imanishi

Position :
Doctor

Affiliation :
Department of Psychiatry

Akita university medical school Hospital

Akita, Japan

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Abstract :

Since HLA-DQB1*0602 is associated with narcolepsy type1, involvement of autoimmune mechanisms in orexin neuron cell death is suggested. However, no strong evidence of inflammatory processes or immune abnormalities associated with narcolepsy exists, and studies have not found classical autoantibodies or an increase in oligoclonal CSF bands in narcoleptic patients. On the other hand, it remains possible that a transient autoimmune reaction restricted to the CNS occurs around disease onset but disappears later.

Orexin deficiency also is found in symptomatic narcolepsy and EDS cases in various neurologic conditions, including immune-mediated neurologic disorders. Although only a small number of multiple sclerosis (MS) patients develop narcolepsy, a subset predominantly shows EDS and REM abnormalities. Specific immune-mediated mechanisms likely are involved in these cases. Recent case reports of MS and related disorders associated with bilateral symmetric hypothalamic lesions, orexin deficiency, and EDS often share clinical neuromyelitis optica (NMO) symptoms. Some of these patients are seropositive for anti-AQP4 antibody, suggesting a functional link to the antibody; bilateral symmetric hypothalamic lesions and anti-AQP4 antibody may be caused by immuno-attack on AQP4 and thus secondarily affect orexin neurons.

Previously 6 cases that the paraneoplastic syndrome of limbic encephalitis associated with the anti-Ma2 antibody had been reported, we recently experienced 51 years old male case. In this case, the onset of narcolepsy symptom was much older than usual, so we suspected of symptomatic narcolepsy and measured anti-AQP-4 and anti-Ma2 antibodies. The result was anti-Ma2 positive. Since anti-Ma2 antibody would be associated with testis tumor at high prevalence, we consulted urologist. The left testis tumor was found and high orchiectomy was performed. The pathology of tumor was seminoma. After the operation, his appetite got better and he gained weight slowly. His agitation was remained, but he can control it by himself. His narcoleptic symptoms were not changed. We use 100mg modafinil for hypersomnia and 10mg clomiplamine for cataplexy. In contrast to NMO due to AQP4 antibody, distinct CNS lesions were not observed in anti-Ma2 encephalitis. Nevertheless, orexin deficiency was observed in this condition. This suggests that the orexin deficiency in this condition may occur at the neuron or ligand levels. Considering that the autoimmune hypothesis is the most popular theory for orexin cell death in narcolepsy, but no clear inflammation was observed in the hypothalamus, a subset of Ma2 antibody positive paraneoplastic syndrome that is associated with orexin deficiency, may be important models for studying.

Speaker

New evidence of Flu virus infection as a trigger for Narcolepsy

韓芳 (Fang Han)

Position :
Professor

Doctor

Affiliation :
PULMONARY MEDICINE

PEKING UNIVERSITY PEOPLE'S HOSPITAL

BEIJING, CHINA

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Speaker

EWAS of DNA methylation and integrated approach for Narcolepsy

Makoto Honda

Position :
Doctor

Affiliation :
Sleep Disorders Project

Tokyo Metropolitan Institute of Medical Science

Tokyo, Japan

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Abstract :

Narcolepsy is a multifactorial disease caused by both genetic and environmental factors. Several genetic factors including HLA-DQB1*06 : 02 have been identified; however, the disease etiology is still unclear. Epigenetic modifications including DNA methylation, have been suggested to play an important role in the pathogenesis of complex diseases. We examined DNA methylation profiles of blood samples from narcolepsy patients and healthy controls and performed an epigenome-wide association study (EWAS) to investigate methylation loci associated with narcolepsy. In addition we performed integrated analysis of data from the EWAS and a previously performed narcolepsy genome-wide association study to search for methylation loci with causal links to the disease. We found that the top-ranked differentially methylated positions (DMPs) in narcolepsy were significantly more abundant in non-CpG island regions and almost all of them were hypomethylated in narcolepsy patients. The integrative analysis identified the CCR3 region where both a single methylation site and multiple single-nucleotide polymorphisms were found to be associated with narcolepsy. Future replication studies using larger number and variety of samples (including brain tissue) with updated methylation technologies will be necessary to confirm and expand our results.

Speaker

An orexin 2 receptor-selective agonist, TAK-925, shows robust wake-promoting effects in mice and non-human primates, and ameliorates narcolepsy-like symptoms in orexin/ataxin-3 mice

Haruhide Kimura

Position :
Director

Affiliation :
Neuroscience Drug Discovery Unit, Research

Takeda Pharmaceutical Company Limited

Japan

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Abstract :

The orexin system is a critical regulator of sleep/wakefulness states, and the deficiency of orexin-producing neurons in lateral hypothalamus is associated with narcolepsy type 1 (NT1). NT1 is a severe neurological disorder characterized by excessive daytime sleepiness (EDS) and cataplexy. Stimulants (e.g. modafinil) and antidepressants (e.g. clomipramine) are used to treat EDS and cataplexy, respectively. Sodium oxybate and pitolisant show efficacy in both EDS and cataplexy but do not completely address the full extent and spectrum of narcolepsy symptoms in clinical practice. Narcolepsy-like symptoms such as wakefulness fragmentation were observed in orexin 2 receptor (OX2R) knockout (KO) mice, but not in orexin 1 receptor (OX1R) KO mice. This demonstrates an association between OX2R and narcolepsy symptoms, and suggests that selective activation of OX2R would potentially address the orexin deficiency in NT1 through reactivation of orexin neuronal signaling pathways. An OX2R agonist may provide better effectiveness for NT1 than current treatments by addressing the underlying deficiency of orexin in the brain.

We recently discovered a novel OX2R selective agonist, TAK-925. TAK-925 activated OX2R (EC50 = 5.5 nM) in in vitro calcium influx assays with > 5,000-fold selectivity against OX1R (EC50 > 30,000 nM). An electrophysiological study revealed that TAK-925 activated physiological OX2R in histaminergic neurons in mouse tuberomammillary nucleus. TAK-925 significantly increased wakefulness time in wild-type mice (≥ 1 mg/kg, s.c.), common marmosets (≥ 0.1 mg/kg, s.c.), and cynomolgus monkeys (≥ 1 mg/kg, s.c.), but not in OX2R KO mice, during their sleep phase.

The effect of TAK-925 on narcolepsy-like symptoms in orexin/ataxin-3 transgenic (TG) mice, a narcolepsy mouse model with orexin deficiency, was characterized using modafinil and clomipramine as controls. Modafinil (30 mg/kg, p.o.) and clomipramine (15 mg/kg, i.p.) were effective in reducing sleepiness or cataplexy-like episodes only, respectively, in orexin/ataxin-3 TG mice during their active phase. Under these conditions, TAK-925 (≥ 1 mg/kg, s.c.) significantly increased wakefulness time and completely recovered wakefulness fragmentation and cataplexy-like episodes in orexin/ataxin-3 TG mice.

In summary, the OX2R-selective agonist TAK-925 induced robust wake-promoting effects in mice and non-human primates during their sleep phase, and ameliorated narcolepsy-like symptoms, such as EDS and cataplexy, in orexin/ataxin-3 TG mice during their active phase. OX2R-selective activation may provide a new therapy for treatment of narcolepsy, and other diseases associated with hypersomnolence.

Support (If Any) : This work was conducted by Takeda Pharmaceutical Company Limited.

Speaker

Neuroimaging study in narcolepsy patients

Seung Bong Hong

Position :
Doctor

Affiliation :
Sleep Center, Samsung Medical Center, Department of Neurology, Sunkyunkwan Unicersity School of Medicine, Korea

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Symposium 4 -OSA, EDS and the integrated treatment (Room 801)

Moderator

林政輝 (Cheng-Hui Lin)

Position :
Assistant Professor

Affiliation :
Chang Gung Memorial Hosptial, Toayuan, Taiwan

Email : Clementlin0614@yahoo.com

Research Interests :
Sleep Medicine Craniofacial Development Computer Aided Surgical Simulation

Moderator

李立昂 (Li- Ang Lee)

Position :
Associate Professor, Director, Division of Laryngology

Affiliation :
Department of Otorhinolaryngology, Head and Neck Surgery, Sleep Center, Linkou Chang Gung Memorial Hospital, Taoyuan, Taiwan (R.O.C.)

Email : 5738@cgmh.org.tw

Research Interests :

1.Sleep Medicine

2.Head and Neck Oncology

3.Laryngology,

4.Pediatric Otolaryngology

5.Medical Education.

Speaker

Sleep and Breathing Problems of Korean Professional Drivers

Sungmin Kim

Position :
Clinical fellow

Affiliation :
Department of Psychiatry

The Catholic University of Korea, St. Vincent's hospital

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Abstract :

Objective

The sleep problems of professional drivers, such as bus drivers and truck drivers could induce a severe economic and human loss. However, there are little data which revealed the sleep status of professional drivers in Korea. Therefore, we investigated the sleep status and the risk factors of daytime sleepiness in urban bus drivers.

Methods

Self-report questionnaires were given to 842 city bus drivers in Suwon, Korea, that included demographic characteristics, the Epworth Sleepiness Scale (ESS), Pittsburgh sleep quality index (PSQI), Insomnia Severity Index (ISI), and Berlin Questionnaire (BQ). The logistic regression analysis was conducted to investigate the risk factors of EDS among commercial bus drivers.

Results

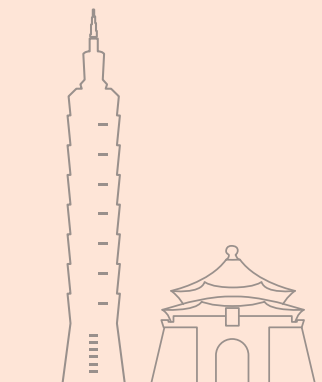
The average of body mass index and total sleep time of 304 responding drivers were 24.7±3.2 kg/m2, 6.05±1.51 hours, respectively. Among them, 13.2% reported an Epworth sleepiness score >10. The majority of the responders reported suffering from poor sleep quality (68.4%) and 10.2% reported having a moderate to severe insomnia. The proportion of group with high risk for Obstructive sleep apnea (OSA) was 26.7%. In multivariate regression analysis, only three variables, including poor quality of sleep, insomnia, and high risk for OSA, were significantly associated with EDS.

Conclusions

This study has shown a high prevalence of excessive daytime sleepiness and insomnia, poor quality of sleep and high risk for OSA as risk factors of EDS among commercial bus drivers in Korea.

Keywords

Excessive daytime sleepiness; Sleep quality; Insomnia; Obstructive sleep apnea; Bus driver



Speaker

Soft tissue surgery in the Treatment of OSA

李立昂 (Li- Ang Lee)

Position :
Associate Professor, Director, Division of Laryngology

Affiliation :
Department of Otorhinolaryngology, Head and Neck Surgery, Sleep Center, Linkou Chang Gung Memorial Hospital, Taoyuan, Taiwan (R.O.C.)

Email : 5738@cgmh.org.tw

Research Interests :

1.Sleep Medicine

2.Head and Neck Oncology

3.Laryngology,

4.Pediatric Otolaryngology

5.Medical Education.

Selected Publications :

1.Lee LA*, Wang CJ, Lo YL, Huang CG, Kuo IC, Lin WN, Hsin LJ, Fang TJ, Li HY. Drug-Induced Sleep Computed Tomography-Directed Upper Airway Surgery for Obstructive Sleep Apnea : A Pilot Study. Otolaryngol Head Neck Surg. 2018 Sep 18 : 194599818800288.

2.Lee LA, Lo YL, Yu JF, Lee GS, Ni YL, Chen NH, Fang TJ, Huang CG, Cheng WN, Li HY*. Snoring sounds predict obstruction sites and surgical response in patients with obstructive sleep apnea hypopnea syndrome. Sci Rep. 2016;6(7) : 30629.

3.Chen WC, Lee LA (co-first), Chen NH, Fang TJ, Huang CG, Cheng WN, Li HY*. Treatment of snoring with positional therapy in patients with positional obstructive sleep apnea syndrome. Sci Rep 2015; 5(12) : 18188. Chen HC, Lee LA (co-first), Hsin LJ, Lin WN, Fang TJ, Huang CG, Li HY. Transverse retropalatal collapsibility

is associated with obstructive sleep apnea severity and outcome of relocation pharyngoplasty. Otolaryngol Head Neck Surg 2015;153(6) : 1056-63.

4.Lee LA*, Li HY, Lin YS, Fang TJ, Huang YS, Hsu JF, Wu CM, Huang CG. Severity of childhood obstructive sleep apnea and hypertension improved after adenotonsillectomy. Otolaryngol Head Neck Surg 2015;152(3) : 553-6.

5.Lee LA, Yu JF, Lo YL, Chen NH, Fang TJ, Huang CG, Cheng WN, Li HY*. Comparative Effects of Snoring Sound between Two Minimally Invasive Surgeries in the Treatment of Snoring : A Randomized Controlled Trial. PLoS One 2014, 9(5) : e97186.

Abstract :

Obstructive sleep apnea (OSA) is a common underdiagnosed disorder. Dynamic upper airway obstruction and/or collapse are common causes of adulthood OSA. Upper airway surgery is the main treatment of OSA in patients who are either intolerant or unwilling to undergo long-term continuous positive airway pressure therapy. More than 50% of patients with newly diagnosed OSA prefer to undergo soft tissue surgery for OSA. However, reductions in apnea-hypopnea index after soft tissue surgery range from 26% to 87%. Retropalatal, oropharyngeal and retroglossal obstruction are frequently encountered in OSA and need to be corrected. With the development of new surgical equipment, soft palate-, lateral pharynx-, and tongue-directed methods such as PEAK-assisted suspension palatoplasty, relocation pharyngoplasty, coblation endoscopic lingual lightening, tongue base suspension, and transoral robotic surgery (TORS) have become popular therapeutic options in the treatment of OSA. Recently, the feasibility, safety, and efficacy of these soft tissue surgeries for the treatment of OSA have been evaluated. This presentation will illustrate the fundamental concepts, patient evaluation, surgical technique, postoperative care, complications, and treatment outcome of soft tissue surgery in adulthood OSA.

Speaker

Bone Surgery in the Treatment of OSA

林政輝 (Cheng-Hui Lin)

Position :
Assistant Professor

Affiliation :
Chang Gung Memorial Hosptial, Toayuan, Taiwan

Email : Clementlin0614@yahoo.com

Research Interests :
Sleep Medicine Craniofacial Development Computer Aided Surgical Simulation

Selected Publications :

1.Yue H, Lin CH, Guilleminault C. Upper airway changes with a mandibular advancement device. Expert review of Respiratory Medicine. 4(1) : 25-28, 2010 Feb. (2.278)

2.Lin CH, Liao YF, Chen NH, Lo LJ, Chen YR. Three-dimensional computed tomography in obstructive sleep apneics treated by maxillomandibular advancement. Laryngoscope, 121 : 1336–1347, 2011 June. (2.316)

3.Lin CH, Guilleminault C. Current hypopnea scoring criteria underscores pediatric sleep disordered breathing. Sleep Medicine, 2011 Aug;12(7) : 720-9. (3.656)

4.Toh ST, Lin CH, Guilleminault C. Use of four-phase high resolution rhinomanometry and measurement of nasal resistance in sleep-disordered breathing. Laryngoscope. 2012 Oct;122(10) : 2343-9. doi : 10.1002/lary.23441. Epub 2012 Jul 9. (2.316)

5.Singhal D, Hsu S SP, Lin CH, Chen YC, Chen YR. Trapezoid mortised genioplasty : a further refinement of mortised genioplasty. Laryngoscope, 2013 Oct; 123(10) : 2578-82. doi : 10.1002/lary.23460. Epub 2013 Jul 2. (Correspondence) (2.316)

Abstract :

Underdevelopment of craniofacial region can be accompanied by small skeletal framework, disproportion between structures, and narrowed pharyngeal airway. Segmental Maxillomandibular Rotational Advancement(SMMRA) is designed specifically for Far-East Asian OSA patients with underdeveloped maxillomandibular skeleton, featured by narrow maxilla with crowded upper dental arch, high mandibular plane angle, mandibular retrognathism, retruded chin and a generally narrowed pharyngeal airway. SMMRA advances maxilla by two segments, counterclockwisely rotates the maxillomandibular complex to improve the mandibular plane angle, advance the mandible to the optimal extent, and forwad the anterior inferior mandible including chin and genioglossus tubercle. The surgery may normalize the airway, facial skeleton, occlusion, and facial aesthetics at the same time.

Speaker

Bariatric surgery in the Treatment of OSA

劉耿豪 (Keng-Hao Liu)

Position :
Doctor

Affiliation :
Department of General Surgery Linkou Chang Guang Memorial Hospital, Taiwan

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Research Interests :
Bariatric surgery

Gastrointestinal surgery

Selected Publications :

1.Laparoscopically Assisted Bowel Surgery in an era of Double-Balloon Enteroscopy : from Inside to Outside. Yeh TS, KH Liu, Su MY, Lin CH, Chiu CT and Tseng JH. Surgical Endoscope, 2009 Apr;23(4) : 739-44

2.Laparoscopic Resection of Gastrointestinal Stromal Tumors : Safe, Efficient, and Comparable Oncologic Outcomes. Chen YH, Liu KH, Yeh CN, Hsu JT, Liu YY, Tsai CY, Chiu CT, Jan YY, Yeh TS. J Laparoendosc Adv Surg Tech A. 2012 Oct;22(8) : 758-63.

3.Evolution of Glycolipid Profile After Sleeve Gastrectomy vs. Roux-en-Y Gastric Bypass : Results of a Prospective Randomized Clinical Trial.Vix M, Diana M, Liu KH, D'Urso A, Mutter D, Wu HS, Marescaux J. Obes Surg. Obes Surg. 2013 May;23(5) : 613-21.

4.Revisional surgery after failed adjustable gastric banding : institutional experience with 90 consecutive cases. Liu KH, Diana M, Vix M, Mutter D, Wu HS, Marescaux J. Surg Endosc. 2013 Nov;27(11) : 4044-8.

5.Impact of Roux-en-Y gastric bypass versus sleeve gastrectomy on vitamin D metabolism : short-term results from a prospective randomized clinical trial.Vix M, Liu KH, Diana M, D'Urso A, Mutter D, Marescaux J. Surg Endosc. 2014 Mar;28(3) : 821-6.

6.Learning curve of laparoscopic Roux-en-Y gastric bypass in an Asian low-volume bariatric unit. Shen SC, Tsai CY, Liao CH, Liu YY, Yeh TS, Liu KH. Asian J Surg. 2018 Mar;41(2) : 170-175

7. Predicted weight loss result of laparoscopic sleeve gastrectomy : Review of the first 82 consecutive patients in an Asian bariatric unit. Huang CW, Tang WJ, Liu YY, Tsai CY, Yeh TS, Liu KH Asian J Surg. 2019 Jan;42(1) : 373-378

Abstract :

Obesity is a worldwide health problem. In Taiwan, the prevalence of overweight is 43% and approximate 3,000 bariatric procedures are performed annularly. The safety and efficacy of bariatric surgery(BS) had been proved. It provides long-persisted results for weight control and excellent outcome for obese related medical disease.

Over 40% morbid obese patients suffered from obstructive sleep apnea(OSA) and over 70% OSA patients are obese. There is close relationship between the two diseases. BS has been described as an important treatment option for morbid obese with OSA. The comprehensive management of obesity and OSA, specifically the current knowledge, expertise and evidence-based data on OSA and bariatric surgery will be reviewed.

Not only surgeons, a multi-disciplinary team should play a societal goal to increase access, awareness and education regarding this life-saving intervention.

Speaker

MFT / oral device in Treatment of OSA

黃玉書 (Yu-Shu Huang)

Position :
Professor of Department of Psychiatry

Affiliation :
Department of Psychiatry and Sleep center, Chang Gung Memorial Hospital

Email : yushuhuang1212@gmail.com

Research Interests :
Hypersomnia, narcolepsy, Insomnia, pediatric OSA, and ADHD

Selected Publications :
Prof. Huang has published more than one hundred of peer-reviewed articles now.

Speaker

MFT / oral device in Treatment of OSA

莊麗娟 (Li-Chuan Chuang)

Position :
The chief and program director

Affiliation :
Department of Pediatric Dentistry, Chang Gung Memorial Hospital, Linkou-Taipei-Taoyuan

Email : soleus34@yahoo.com.tw

Research Interests :
Oral appliance for pediatric sleep obstructive apnea

Selected Publications :

1.Huang YS, Chuang LC, Michèle Hervy-Auboiron, Teresa Paiva, Cheng-Hui Lin, Christian Guilleminault *. Neutral supporting mandibular advancement device with tongue bead for passive myofunctional therapy : A long term follow-up study. Sleep medicine (in press) https : //doi.org/10.1016/j.sleep.2018.09.013

2.Hsu SC, Huang YS, Christian Guilleminault, Chuang LC*. Myofunctional Therapy Role in Pediatric OSA. Sleep Med Clin (in press) https://doi.org/10.1016/j.jsmc.2018.10.004

3.Chuang LC, Lian YC, Michèle Hervy-Auboiron, Christian Guilleminault, Huang YS*. Passive myofunctional therapy applied on children with obstructive sleep apnea : a 6 months follow-up. Journal of the Formosan Medical Association (2017) 116 : 536-541

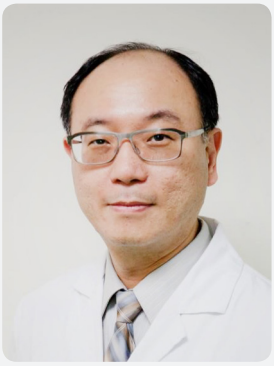
4.Lian YC, Huang YS, Christian Guilleminault, Chen KT, Michèle Hervy-Auboiron, Chuang LC*, Aileen I. Tsai. The preliminary results of the differences in craniofacial and airway morphology between preterm and full-term children with obstructive sleep apnea. Journal of Dental Sciences(2017)12 : 253-260

Abstract :

Using a specialized oral device to perform myofunctional therapy during sleep could improve the breathing during sleep of children with obstructive sleep apnea. The oral appliance is a one-piece, custom-made adjustable oral device for advancing the mandible. A bead (red arrow) is mounted on the lower part of the frame for the tip of the tongue to roll, which in turn places the tongue in a forward position so as to open the airway.

Symposium 7-
Complemental and integrated treatment of Insomnia (Room 803)

Moderator



李信謙 (Hsin-Chien Lee)

Position :
Chair & Associate Professor

Affiliation :
1.Department of Psychiatry Shuang-Ho Hospital, Taipei Medical University

2.Research Center of Sleep Medicine, College of Medicine, Taipei Medical University

Email : ellalee@tmu.edu.tw

Research Interests :
Psychiatry

Sleep Medicine

Moderator

楊建銘 (Chien-Ming Yang)

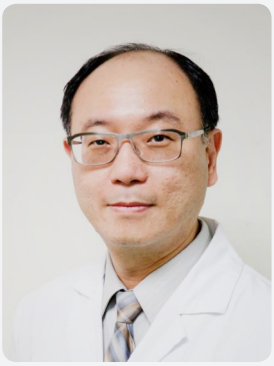
Position :
Professor

Affiliation :
National Chengchi University, Department of Psychology

Email : yangcm.email@gmail.com

Research Interests :
Behavioral Sleep Medicine, Insomnia, Human Circadian Rhythm

Speaker



Insomnia update

李信謙 (Hsin-Chien Lee)

Position :
Chair & Associate Professor

Affiliation :
1.Department of Psychiatry Shuang-Ho Hospital, Taipei Medical University

2.Research Center of Sleep Medicine, College of Medicine, Taipei Medical University

Email : ellalee@tmu.edu.tw

Research Interests :
Psychiatry

Sleep Medicine

Selected Publications :

1.Tsai SC, Sheu SY, Chien LN, Lee HC, Yuan EJ, Yuan RY. High exposure compared with standard exposure to metoclopramide associated with a higher risk of parkinsonism : a nationwide population-based cohort study. British journal of clinical pharmacology. 2018;84(9) : 2000-9.

2.Northoff G, Magioncalda P, Martino M, Lee HC, Tseng YC, Lane T. Too Fast or Too Slow? Time and Neuronal Variability in Bipolar Disorder-A Combined Theoretical and Empirical Investigation. Schizophrenia bulletin. 2018;44(1) : 54-64. doi : 10.1093/schbul/sbx050.

3.Hsiao FC, Tsai PJ, Wu CW, Yang CM, Lane TJ, Lee HC et al. The neurophysiological basis of the discrepancy between objective and subjective sleep during the sleep onset period : an EEG-fMRI study. Sleep. 2018;41(6). doi : 10.1093/sleep/zsy056.

4.Chiu HY, Lee HC, Chen PY, Lai YF, Tu YK. Associations between sleep duration and suicidality in adolescents : A systematic review and dose-response meta-analysis. Sleep medicine reviews. 2018.

5.Wu YL, Chang LY, Lee HC, Fang SC, Tsai PS. Sleep disturbances in fibromyalgia : A meta-analysis of case-control studies. Journal of psychosomatic research. 2017;96 : 89-97.

Speaker

CBT-I via Videomedicine

Daniel Jin Blum

Position :
Adjunct Clinical Faculty

Affiliation :
Stanford Center for Sleep Sciences and Medicine

Abstract :

Chronic insomnia is common problem that affects 10% of the general population and up to 20% of patients in primary care settings. Cognitive-Behavioral Therapy for Insomnia (CBT-i), the gold-standard treatment for insomnia, is a multicomponent treatment that is fast (4-8 sessions), effective (70-80% who complete tx have few or no sxs post tx), and sustained (benefits persist 24 months post tx). Combined with the scarcity of well-trained providers (fewer than 350 board certified in behavioral sleep medicine worldwide), CBT-i is uniquely positioned to be disseminated via telemedicine. This session will review the implementation of CBT-i via telemedicine in the treatment of insomnia.

Speaker

A Randomized, double-blind, placebo - controlled Study to Evaluate the Improvement of Sleep Quality of Patients with Insomnia by a newly developed Sleep Device: a Preliminary Study

張凌昇 (Ling-Sheng Jang)

Position :
Professor

Affiliation :
LifeChip Laboratory

Instrumentation Chip Group

Department of Electrical Engineering

National Cheng Kung University

Email : lsjang@ee.ncku.edu.tw

Research Interests :
Cancer Cell Chip, Sleep Frequency Technology, Focus Frequency Technology

Selected Publications :

1.Jing-Yau Tang, Te-Wei Yeh, Yu-Ting Huang, Min-Haw Wang and Ling-Sheng Jang , "Effects of Extremely Low-Frequency Electromagnetic Fields on B16F10 Cancer Cells", Electromagnetic Biology and Medicine, 2019. (SCI)(accepted)

2.Shou-Ai Tsai, Jing-Yau Tang, Min-Haw Wang, Ling-Sheng Jang*, "Impedance measurement system for automatic determination of glycated hemoglobin", Review of Scientific Instruments, vol. 89, iss. 6, 065003, 2018.

3 Chia-Feng Liu, Ming-Kun Chen, Min-Haw Wang, Ling-Sheng Jang*, "Improved Hairpin Resonator for Microfluidic Sensing", Sensors and Materials, vol. 30, no. 5, pp. 979–990, 2018. (SCI, IF : 0.519)

4.Chia-Feng Liu, Min-Haw Wang, Ling-Sheng Jang*, "Microfluidics-Based Hairpin Resonator Biosensor for Biological Cell Detection", Sensors and Actuators B : Chemical, vol. 263, pp. 129-136, 2018. (SCI, IF : 5.401)

5.I-Chih Wu, Min-Haw Wang, Ling-Sheng Jang*," Experimental location of damage in microelectronic solder joints after a board level reliability evaluation", Engineering Failure Analysis, vol. 83, pp. 131-140, 2018. (SCI, IF : 0.956, Q2 : 11/33)

6.I-Chih Wu, Yu-Jung Huang, Min-Haw Wang, Ling-Sheng Jang*," Lock-in thermography used to detect WLCSP fault location after board level reliability evaluations", Sensors and Materials, vol. 30, no. 4, 833–843, 2018. (SCI, IF : 0.519)

Abstract :

I Tang, Ling-Sheng Jang, Chen Lin, Wei-Chih Chin,Yu-Shu Huang

Objective:

Insomnia is a common sleep disturbance that affects patients' health and quality of life and accounts for considerable utilization of medical resources. The most common treatment for insomnia is pharmacological therapy with hypnotics. However, it can result in adverse effects, drug tolerance and dependence. Cognitive behavior therapy for insomnia (CBT-i) has demonstrated its efficacy, but poor compliance and short supply of CBT-i have always been important issues. More interventions are thus needed to increase the treatment effects of patients with insomnia. Therefore, a sleep device with SRF (Sleep Restore Frequency) was developed to integrate the bio-energy generated Schumann resonances into these treatments. The purpose of this study is to evaluate the sleep improvement of patients with insomnia by using this sleep device (Enerkey Kingdom).

Methods:

This is a randomized and placebo-controlled study. We enrolled 20 patients with insomnia and separated them into 2 groups: the sleep device group and the placebo device group. All patients use their devices for 4 weeks. Objective sleep-related factors were measured by PSG before and after intervention. Subjective sleep-related factors were measured by Pittsburgh Sleep Quality Index (PSQI), 36-Item Short-Form Health Survey (SF-36), Epworth Sleepiness Scale (ESS), Beck Depression Inventory II (BDI-II), Beck Anxiety Inventory (BAI), and Self-Efficacy Scale (SES) administered every two weeks.

Results:

Ten patients were randomized to the sleep device group (60% female; 50.6 ± 14.5 year) and 10 patients in the placebo device group (80% female; 45.1 ± 13.9 year). In PSQI, subjective sleep quality ($p = 0.021$), sleep latency ($p = 0.030$), and daytime dysfunction ($p = 0.022$) score were improved significantly in the sleep device group after intervention. The change from baseline in subjective sleep quality score was significantly greater in the sleep device group than the placebo device group ($p = 0.035$). In SF-36, mental health ($p = 0.011$) and bodily pain ($p = 0.012$) score were

improved significantly in the sleep device group after intervention. The change from baseline in bodily pain score was greater in the sleep device group than the placebo device group ($p = 0.089$). Also in PSG, sleep latency score was improved significantly in the sleep device group after intervention ($p = 0.028$). The change from baseline in sleep latency score was greater in sleep device group than placebo device group ($p = 0.011$).

Conclusion:

The findings of this preliminary study suggest that the sleep device improved insomnia patients' sleep latency, daytime function, sleep quality, and mental health. Interestingly, it also could improve patients' bodily pain.

中文題目：雙盲、隨機、安慰劑對照試驗，研究電子舒眠機對失眠症病人的睡眠品質的改善：預備性研究。

作　　者：唐儀 張凌昇 林澂 金韋志 黃玉書

服務單位：長庚紀念醫院　國立成功大學電機系　國立中央大學生醫科學與工程學系

Speaker

Complemental treatment of insomnia

黃玉書 (Yu-Shu Huang)

Position :
Professor of Department of Psychiatry

Affiliation :
Department of Psychiatry and Sleep center, Chang Gung Memorial Hospital

Email : yushuhuang1212@gmail.com

Research Interests :
Hypersomnia, narcolepsy, Insomnia, pediatric OSA, and ADHD

Selected Publications :
Prof. Huang has published more than one hundred of peer-reviewed articles now.

Speaker

The metabolic effect of insomnia

Samson Fong

Position :
Doctor

Affiliation :
Psychiatry

Chinese University of Hong Kong

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Abstract :

Insomnia has been reported to be a risk and modulating factor of a diverse cardiometabolic disorders including diabetes, hypertension & other cardiovascular disorder, lower immune functioning and increased mortality. We are going to revisit the hyperarousal phenomenon and altered hypothalamic-pituitary-adrenal axis functioning, which could be the underlying mechanism for the metabolic effect of insomnia. In addition, our recent data suggested a gender difference in the association between insomnia and glycemic control at which male subjects with insomnia and diabetes mellitus were associated with poorer glycemic control, albeit insomnia was more common among female subjects.

Speaker

The elongation of total sleep time after delaying school start time and its effect on school life

Tae Won Kim

Position :
Professor

Affiliation :
Department of Psychiatry

St. Vincent's Hospital, The Catholic University of Korea

Suwon city, Republic of Korea

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Abstract :

Background and Objective

The purpose of this study was to investigate the effect of delaying school start time on sleep quality, emotion and performance in Korean adolescents.

Method

Data were collected in 2 months and 12 months each using self-administering questionnaires by 238 students at a middle school located in Gyeonggi province. Questionnaires were composed of demographic data and various sleep and emotion related scales including Pittsburgh Sleep Quality Index(PSQI). Students were divided into two groups of increased or decreased total sleep time(TST). Wilcoxon signed rank test was used to identify significant differences in 2 months vs. 12 months in sleep parameters, emotions and school performance in both groups.

Results

In both groups, PSQI duration, PSQI total score and sleep efficiency significantly improved from 2 month to 12 month data. There were significant improvements in depression, stress, behavioral aggression, and verbal aggression in increased TST group. Increased TST group showed advancements in subjective feeling of happiness and number of being being late for school per week between baseline and 12 months. Decreased TST group showed significant differences in subjective feeling of happiness, number of being being late for school per week, sleepiness during class, concentration on class, relationship with friends, energy in daily life, general feeling in school, willingness to go to school, and anger in school life.

3/31 Sun. Poster Viewing

Moderator

楊鈞百 Chun-Pai Yang

Position :
Director

Affiliation :
Department of Neurology and Sleep Center

Kuang Tien General Hospital

Research Interests :
Neurology (Sleep Disorders and Epilepsy)

Moderator

林政佑 (Cheng-Yu Lin)

Position :
Director, Sleep Medicine Center

Affiliation :
National Cheng Kung University Hospital

Email : yu621109@ms48.hinet.net

Research Interests :
Sleep surgery; Obstructive sleep apnea; Occupational sleep disorders

Moderator

蘇茂昌 (Mao-Chang Su)

Position :
Associate Professor

Affiliation :
Division of Pulmonary and Critical Care Medicine, Chang Gung Memorial Hospital, Kaohsiung

Email : maochangsu@yahoo.com.tw

Research Interests :
Critical care medicine, Cardiopulmonary exercise medicine, Lung cancer, Sleep medicine

Moderator

鄔定宇 (Ting-Yu Wu)

Position :
Director, Sleep Center

Affiliation :
Shaung-Ho Hospital, Taipei Medical University

Email : tingyu02139@gmail.com

Research Interests :
Sleep, stroke, neurodegenerative disease

Moderator

張芳嘉 (Fang-Chia Chang)

Position :
Professor

Affiliation :
Department of Veterinary Medicine Graduate Institute of Brain and Mind Sciences National Taiwan University

Email : fchang@ntu.edu.tw

Research Interests :
Neuroimmunomodulation on sleep, stress and sleep, epilepsy-induced sleep disruptions, acupuncture on insomnia

Symposium 2-Future treatment of Hypersomnia (Room 802)

Moderator

韓芳 (Fang Han)

Position :

Professor

Doctor

Affiliation :

PULMONARY MEDICINE

PEKING UNIVERSITY PEOPLE'S HOSPITAL

BEIJING, CHINA

Research Interests :

Narcolepsy、Hypersomnolence、Sleep Medicine

Moderator

徐崇堯 (Chung-Yao Hsu)

Position :
Associate Professor, Clinical Director of EEG Unit, Executive Director of Sleep Center at the Department of Neurology, and also the Director of Tele-healthcare Center

Affiliation :
Kaohsiung Medical University and Hospital

Email : cyhsu@kmu.edu.tw

Research Interests :
Neurology (Sleep Disorders and Epilepsy)

Speaker

Update the treatment of Narcolepsy

Christian Guilleminault

Position :
Professor of Psychiatry and Behavioral Sciences – Sleep Center

Affiliation :
Stanford Center for Sleep Sciences and Medicine

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Selected Publications :

1.Guilleminault, C. and Lugaresi, E. (Eds.). Sleep-Wake Disorders : Natural History, Epidemiology, and Long-Term Evolution. Raven Press, New York, 1983.

2.Guilleminault, C. (Ed). Sleep Disorders in Children. Raven Press, New York, 1987.

3.Guilleminault, C. and Partinen, M. Obstructive Sleep Apnea Syndrome : Clinical Research and Treatment. Raven Press, New York, 1990.

4.Leger D. Guilleminault C. Sommeil, Vigilance et Travail. Masson publ. Paris, 1997

5.Guilleminault (ed) Clinical neurophysiology of sleep disorders; Handbook of Clinical Neurophysiology Vol.6. Elsevier Amsterdam-New-York 2005

Speaker

Human research and hypocretin agonist : Where are we and what can we expect?

Deborah S. Hartman

Position :

Doctor

Vice President and Global Program Leader

Affiliation :

Neuroscience

Takeda Pharmaceuticals

Neuroscience Therapy Area at Takeda Pharmaceuticals in Cambridge, MA

Research Interests :

Narcolepsy、Hypersomnolence、Sleep Medicine

Abstract :

The hypocretin/orexin system is a critical regulator of sleep/wake states, and Narcolepsy Type 1 (NT1) is caused by loss of the neurons producing the hypocretin/orexin neuropeptides in the lateral hypothalamus. The orexin neuropeptides regulate sleep/wakefulness, energy homeostasis, mood, stress, and reward through activation of two G-protein coupled receptors, Orexin Receptor 1 (OX1R) and Orexin Receptor 2 (OX2R). In mouse models, destruction of the orexin-producing neurons results in narcolepsy-like symptoms including fragmented sleep/wake states and cataplexy-like events. In mice, OX2R activation strongly promotes wakefulness and reduces cataplexy-like events, whereas OX1R activation may enhance rewarding behaviors and risk of addiction in mice. We recently developed TAK-925, an orexin 2 receptor-selective agonist, which significantly increased wakefulness time, reduced wakefulness fragmentation and decreased cataplexy-like episodes in orexin/ataxin-3 transgenic mice during their active phase. We are evaluating TAK-925 in Phase 1 studies to investigate its safety, tolerability, and pharmacokinetics in healthy subjects, and its pharmacodynamic effects using the Maintenance of Wakefulness Test (MWT) in individuals with Type 1 narcolepsy (clinicaltrial.gov identifier NCT03748979). We anticipate that an OX2R agonist has the potential to substantially improve orexin neurotransmission in NT1, and may reduce disease specific symptoms such as sleepiness and cataplexy.

Speaker

Wakix, the first histamine H3-receptor antagonist in narcolepsy and other daytime sleepiness

Jean-Charles SCHWARTZ

Position :
Professor

Affiliation :
RESEARCH CENTER

BIOPROJET

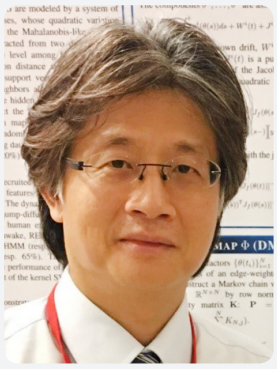
PARIS FRANCE

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Abstract :

Wakix (Pitolisant), the first histamine H3-receptor antagonist/inverse agonist to be introduced in therapeutics, the first acting by releasing histamine from brain tuberomammillary neurons, a major wake-promoting system. It exerts wake-promoting and anti-cataplectic effects in a rodent model of narcolepsy but is devoid of psychomotor stimulant and preclinical drug abuse potential. The drug was approved and is commercialized in Europe for treatment of narcolepsy with or without cataplexy and is currently under examination by the FDA. Wakix efficacy on Excessive Daytime Sleepiness (EDS) and cataplexy was mainly assessed in two double-blind placebo-controlled trials (HARMONY I and HARMONY CTP) in which it was administered once-a-day at a maximum 40mg dose for two months. Positive and clinically relevant improvements of EDS over placebo were found both on the Epworth sleepiness scale and the MWT as well as on a sleepiness index combining these two subjective and objective tests, respectively. In both trials the number of cataplexy attacks were significantly reduced by over 50% compared to placebo (Dauvilliers et al Lancet Neurol 2013, 12, 1068; Szakacs et al Lancet Neurol 2017;16, : 200)The long-term efficacy on EDS, cataplexy and hallucinations was confirmed in the open-label HARMONY III trial in which patients were treated for up to one year.The safety profile of Wakix in these various trials was good with the most frequent TEAEs being headache, insomnia, nausea, anxiety and irritability. No drug abuse signal was detected in these trials and and, more specifically, a controlled study in recreational drug users showed no difference with placebo.

Moderator



羅友倫 (Yu-Lun Lo)

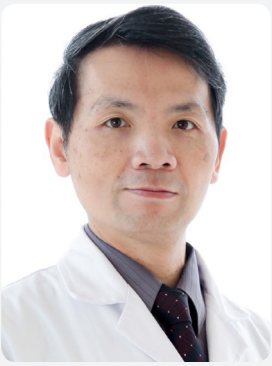
Position :
Director of Division of Airway Disease, Department of Thoracic Medicine Chang Gung University Associate Professor Chang Gung University

Affiliation :
Department of Thoracic Medicine, Lin-Kou Medical Center of Chang Gung Memorial Hospital

Email : loyulun@hotmail.com

Research Interests :
Sleep Medicine、Artificial Intelligence、Physiological Signal Analysis

Moderator



劉文德 (Wen-Te Liu)

Position :
Director, Sleep Center of Shuang Ho Hospital Associate Professor

Affiliation :
Research Center of Sleep Medicine, College of Medicine, Taipei Medical University Pulmonary, Department of Internal Medicine, Shuang Ho Hospital

Email : lion5835@gmail.com

Research Interests :
Sleep Medicine, Artificial Intelligence, Wearable Technology

Speaker

AI and Robotics – Key to Era of Smart Medicine

傅立成 (Li-Chen Fu)

Position :
Distinguished Professor

Affiliation :
1. Distinguished Professor, Dept. of Electrical Engineering, Dept. of Computer Science & Information Eng., National Taiwan University
2. Co-Director, Most Joint Research Center for AI Technology and All Vista Healthcare 3. Director, NTU Center for Artificial Intelligence and Advanced Robotics

Email : lichen@ntu.edu.tw

Research Interests :
Intelligent Robotics, Virtual Reality and Augmented Reality, Nonlinear, Adaptive Control : Theory and Applications, Human-Robot-Interaction Evolutionary Optimization and Production Scheduling

Selected Publications :

1. Shih-Huan Tseng, Feng-Chih Liu, and Li-Chen Fu, "Active Learning on Service Providing Model : Adjustment of Robot Behaviors through Human Feedback," IEEE Transactions on Cognitive and Developmental Systems, Vol. 10, No. 3, pp. 701-711, (SCI) 2018.
2. Tseng, Shih-Huan, Yen Chao, Ching Lin, and Li-Chen Fu, "Service Robots : System Design for Tracking People through Data Fusion and Initiating Interaction with the Human Group by Inferring Social Situations," Robotics and Autonomous Systems, Vol. 83, pp.188-202, (SCI) 2016.
3. Lim, Chung Dial, Chia-Ming Wang, Ching-Ying Cheng, and Li-Chen Fu, "Sensory Cues Guided Rehabilitation Robotic Walker Realized by Depth Image Based Gait Analysis," IEEE Transactions on Automation Science and Engineering, Vol. 13, No. 1, pp. 171-180, (SCI) 2016.

4. Lin, W., H.-P. Yueh, H.-Y. Wu, and, Li-Chen Fu, "Developing a Service Robot in Children's Library : A Design-based Approach," Journal of the American Society for Information Science and Technology, Vol. 65, No.2, pp.290-301, 2014

Abstract :

It is non-deniable that the current world has been shaken up hard by this new wave of Artificial Intelligence (AI), and people in the world realized this mostly after AlphaGo has burst its gigantic power in playing chess beating the top-notch chess players from all over the world. Since then, AI has step-by-step steadily changed our life almost in every aspect, and successful evidences have been observed, e.g., in smart manufacturing, smart services, smart finance, and smart medicine, etc. Through analysis of the big data, this new AI tide leads people's lives to the better stage by leveraging the so-to-speak collective intelligence. As for Robotics, thanks to quick AI development, service robots have become more popularly working in our human living environment, after overcoming all sorts of uncertainties encountered while the robots are serving the humans.

Given this new era of human world full of various AI technologies and smart robot agents, it is not surprising that mankind's life expectancy as well as life quality will be augmented since humans will be constantly guarded within a system of precision medicine, preventive medicine, and social service robots. For example, AI enhanced medical imaging, disease forecast, safe drug prescription, mental healthcare, clinical decision support, and so on and so forth will help people be more aware of their possible health threats in much earlier stage (so as to prevent them) and be treated by far more smart therapeutic measures after their health conditions are threatened (in order to get better cures). For more to come, the elderly will be accompanied and cared by a bunch of smart robot agents even when the supporting younger generation simply become more and more scarce resources. We believe that the futuristic "Society 5.0" proposed by Japan in 2016 can be gradually realized in this new era where mankind will live with health, joy, and prosperity.

Speaker

Sensor Fusion and AI Analysis for SDB Healthcare

黃柏鈞 (Po-Chiun Huang)

Position :
Professor and Associate Chair

Affiliation :
Dept. of Electrical Engineering, National Tsing Hua Univ.

Email : pchuang@ee.nthu.edu.tw

Research Interests :
Cognitive System for Healthcares and Sports

System Prototyping and Signal Processing

Mixed-Signal Integrated Circuit Realization

Selected Publications :

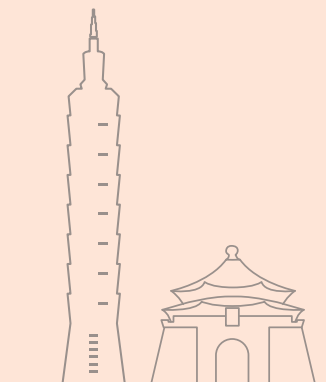
1.H.-T. Wu, J.-C. Wu, P.-C. Huang, T.-Y. Lin, T.-Y. Wang, Y.-H. Huang, and Y.-L. Lo, “Phenotype-Based and Self-Learning Inter-Individual Sleep Apnea Screening with a Level IV-Like Monitoring System," Frontiers in Physiology, vol. 9, article 723, Jul. 2018.

2.J.-C. Wu, C.-W. Wang, Y.-H. Huang, H.-T. Wu, P.-C. Huang, and Y.-L. Lo, “A Portable Monitoring System with Automatic Event Detection for Sleep Apnea Level-IV Evaluation," IEEE Int. Symp. on Circuits and Systems, (ISCAS), Italy, 2018.

3.A. Sinha, P. Gopinathan, Y.-D. Chung, H.-Y. Lin, K.-H. Li, H.-P. Ma, P.-C. Huang, S.-C. Shiesh, and G.-B. Lee, “An Integrated Microfluidic Platform to Perform Uninterrupted SELEX Cycles to Screen Affinity Reagents Specific to Cardiovascular Biomarkers," Biosensors and Bioelectronics, 122, pp. 104-112, Sep. 2018.

Abstract :

The population with sleep-disordered breathing (SDB) is continuously increasing with the obesity, aging, and stress. Although the untreated SDB will increase the risk of health problems, most patients are not aware of it. In this talk a sensing system that is easy to install at home, cheap, and not interfere sleep, is introduced. Artificial intelligence (AI) techniques are proposed to achieve automatic annotation for the collected signal. Clinical results show high accuracy for the screening purpose.



Speaker

AIoT application for Sleep Screening

李仁貴 (Ren-Guey Lee)

Position :
Professor

Affiliation :
National Taipei Univ. of Technology Department of Electronics Engineering

Email : evans@ntut.edu.tw

Research Interests :
Medical Electronics, Mobile care system, Medical Wearable Device, Bio-informatics

Selected Publications :

1.Chung-Chih Lin, Chun-Chang Chen, Pay-Shin Lin, Ren-Guey Lee, Jing-Siang Huang, Tsai-Hsuan Tsai & Yu-Chuan Chang (2016, May). Development of Home-Based Frailty Detection Device Using Wireless Sensor Networks. Journal of Medical and Biological Engineering, Vol. 36, pp. 168~177.

2.Chun-Chieh Hsiao, Ren-Guey Lee, Sheng-Chung Tien, Yen-Yi Feng and ShihFeng Huang (2015, Dec). Early Clinical Prognosis for High-Risk Chest Pain Patients Using Smart Textiles. Journal of Biomedical Engineering : Applications, Basis and Communications, Vol. 27, Issue 6, Article No. 1550057, pp.1-14.

3.Ren-Guey Lee, Chih-Yang Chen, Chun-Chieh Hsiao and Robert Lin (2015, Dec). Heart Rate Monitoring Systems in Groups for Reliability and Validity Assessment of Cardiorespiratory Finess Analysis. Journal of Biomedical Engineering : Applications, Basis and Communications, Vol. 27, Issue 6, Article No. 1550055, pp.1-15.

Abstract :

Sleep disorder is an important issue in modern society. In the real life, for the patients with sleep disorders, it is very complicated and difficult to solve because the inconvenience and complex of diagnostic methods as well as the lack of integration and following up of therapeutic strategies. In this talk, we will introduce a home screening device for sleep disorder show that many factors could affect sleep quality including lifestyle, behavior, physical activity, even environmental pollution.

Speaker

The four steps for physicians in dealing with AI trend in Medicine : face it, accept it, deal with it and manage it.

劉天仁 (Tien-Jen Liu)

Position :
Senior Attending Physician Co-founder & Chief operating officer of AIxMed

Affiliation :
MacKay Memorial Hospital, Taipei Adjunctive Assistant professor of Taipei Medical University Bioenginnering College Adjunctive Assistant professor of National Chao-Tung University EMBA

Email : tienjen@gmail.com

Selected Publications :

1.A multicenter pilot study on the indications of the negative pressure sleep therapy system for the treatment of obstructive sleep apnea. 1Chia-Mo Lin, 2Liang-Wen Hang, 3Kun-Ta Chou, 1Tien-Jen Liu, 5Christian Guilleminault. Sleepmedicine. December 2017 Volume 40, Supplement 1, P.198

2.Follow-up Reports on Intraoral Negative Air Pressure Device Treated Patients Underwent Obstructive Sleep Apnea Uvulopalatopharyngoplasty. 1Tien-Jen Liu, 2Wen-Yeh Hsieh, 1Bo-Nien Chen, 3Wen-Ko Su. Sleep and Breathing Sep 2018, Volume 22, Issue 3, pp 865–896

3.A novel intermittent negative air pressure device ameliorates obstructive sleep apnea syndrome in adults. Tzu-Chun Hung1, Tien-Jen Liu2,3, Wen-Yeh Hsieh4, Bo-Nien Chen2, Wen-Ko Su5, Kuang-Hui Sun1,6, Christian Guilleminault7 (Accepted)

Abstract :

Quick AI intro - What is AI, machine learning, deep learning, ... AI in medicine - Hot areas in the industry - Recent success cases Physician's prospective - What's are physician's roles in AI era? Steps physicians can take. AI vs human? Trusting AI with my life?

Symposium 8-Basic Science and Research of Sleep (Room 803)

Moderator

張芳嘉 (Fang-Chia Chang)

Position :
Professor

Affiliation :
Department of Veterinary Medicine Graduate Institute of Brain and Mind Sciences National Taiwan University

Email : fchang@ntu.edu.tw

Research Interests :
Neuroimmunomodulation on sleep, stress and sleep, epilepsy-induced sleep disruptions, acupuncture on insomnia

Moderator

蔡玲玲 (Ling-Ling Tsai)

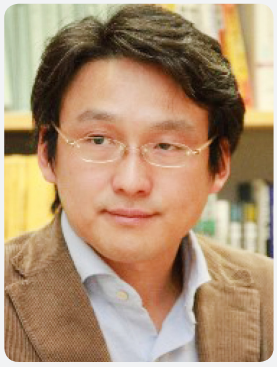
Position :
professor

Affiliation :
Department of Psychology, National Chung Cheng University

Email : psyllt@ccu.edu.tw

Research Interests :
Sleep and Error monitoring, Photic Effects on Sleep and Circadian Rhythms, Circadian Rhythm Disruption and Health

Speaker



Systems Biology of Mammalian Sleep/Wake Cycles/Toward Molecular definition of NREM and REM sleeps

Hiroki Ueda

Position :
Professor

Affiliation :
Synthetic Biology/ Systems Pharmacology

RIKEN(BDR)/ The University of Tokyo

Research Interests :
chronobiology by investigating mammalian circadian clocks and sleep/wake cycles

Selected Publications :

Abstract :

The detailed molecular and cellular mechanisms underlying NREM sleep (slow-wave sleep) and REM sleep (paradoxical sleep) in mammals are still elusive. To address these challenges, we first constructed a simple computational model, which recapitulates the electrophysiological characteristics of the slow-wave sleep. Comprehensive bifurcation analysis predicted that a Ca2+-dependent hyperpolarization pathway may play a role in slow-wave sleep. To experimentally validate this prediction, we generate and analyze 26 KO mice, and found that impaired Ca2+-dependent K+ channels (Kcnn2 and Kcnn3), voltage-gated Ca2+ channels (Cacna1g and Cacna1h), or Ca2+/calmodulin-dependent kinases (Camk2a and Camk2b) decrease sleep duration, while impaired plasma membrane Ca2+ ATPase (Atp2b3) increases sleep duration. Genetical (Nr3a) and pharmacological intervention (PCP, MK-801 for Nr1/Nr2b) and whole-brain imaging validated that impaired NMDA receptors reduce sleep duration and directly increase the excitability of cells. Based on these results, we propose a hypothesis that a Ca2+-dependent hyperpolarization pathway underlies the regulation of sleep duration in mammals. In this talk, I will also describe how we identify essential genes (Chrm1 and Chrm3) in REM sleep regulation, and propose a plausible molecular definition of a paradoxical state of REM sleep.

Speaker

IL-1-Src family kinases pathway in epileptogenesis and epilepsy-induced sleep disruptions

張芳嘉 (Fang-Chia Chang)

Position :
Professor

Affiliation :
Department of Veterinary Medicine Graduate Institute of Brain and Mind Sciences National Taiwan University

Email : fchang@ntu.edu.tw

Research Interests :
Neuroimmunomodulation on sleep, stress and sleep, epilepsy-induced sleep disruptions, acupuncture on insomnia

Selected Publications :

1. Tzu-Rung Huang, Shuo-Bin Jou, Yu-Ju Chou, Pei-Lu Yi, Chun-Jen Chen, Fang-Chia Chang*. Interleukin-1 receptor (IL-1R) mediates epilepsy-induced sleep disruption. BMC Neuroscience 2016; 17 : 74.
2. Pei-Lu Yi, Chin-Yu Lu, Shuo-Bin Jou, Fang-Chia Chang*. Low-frequency electroacupuncture suppresses focal epilepsy and improves epilepsy-induced sleep disruptions. Journal of Biomedical Science 2015; 22 : 49
3. Yi-Tse Hsiao, Pei-Lu Yi, Chiung-Hsiang Cheng, Fang-Chia Chang*. Disruption of footshock-induced theta rhythms by stimulating median raphe nucleus reduces anxiety in rats. Behavioural Brain Research 2013; 247 : 193-200.
4. Pei-Lu Yi, Ying-Ju Chen, Chung-Tien Lin, Fang-Chia Chang*. Occurrence of epilepsy at different zeitgeber times alters sleep homeostasis differently in rats. Sleep 2012; 35(12) : 1651-1665.
5. Yi-Tse Hsiao, Pei-Lu Yi, Chia-Ling Li, Fang-Chia Chang*. Effect of cannabidiol on sleep disruption induced by the repeated combination tests consisting of open field and elevated plus-maze in rats. Neuropharmacology 2012; 62 : 373-384.

Abstract :

In this presentation, we tried to elucidate the effects of IL-1-Src family kinases pathway in epileptogenesis, astrogliosis, microgliosis, neurodegeneration, neurogenesis, and sleep disruptions, when a low dose of pentylenetetrazol (PTZ) was systemically injected to cause the spontaneous epilepsy. The spontaneously generalized seizures were induced by intraperitoneal injection of low dose PTZ, the sleep-wake activity was analyzed, and the seizure threshold was determined in both the wildtype and IL-1R1 KO mice. The expression of subunit proteins of NMDA receptor, NR1 and phosphorylated-NR2B (at Tyr1472) were determined in the frontal cortex, hypothalamus and hippocampus by the Western blotting. The expressions of astrocytes and microglia, neurogenesis and neurodegeneration were determined. By employing IL-1 receptor type-1 knockout (IL-1R1 KO) mice, IL-1 was found to increase astrogliosis, microgliosis and neurogenesis, but not neurodegeneration, which contribute to epileptogenesis. IL-1R1 activates NF- B and Src family kinases to increase the NR1 subunit of NMDA receptor and phosphorylate NR2B, respectively. Src family kinases activator in IL-1R1 KO mice restored IL-1 signal and increase phosphorylated NR2B to decrease epileptic threshold and disrupt sleep; in contrast, Src family kinases inhibitor administered into wildtype mice mimicked IL-1R1 KO mice to reduce phosphorylated NR2B to increase epileptic threshold and blocked epilepsy-induced sleep disturbance. NF- B activator in IL-1R1 KO mice enhanced epileptogenesis and reappeared epilepsy-induced sleep disruption; administration of NF- B inhibitor into wildtype epileptic mice reduced epilepsy and diminished sleep disturbance. These results demonstrate underlying mechanisms of IL-1 in epileptogenesis and sleep disruption.

3/31 Keynote Lecture (Room 801)

Moderator

Seung Chul Hong

Position :
President of Asian Narcolepsy & Hypersomnolence Society Meeting
Professor of Department of Psychiatry

Affiliation :
The Catholic University of Korea, ST. Vincent's Hospital

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Speaker

Clinical key features and burden of illness of pediatric type 1 narcolepsy

Giuseppe Plazzi

Position :
Associate Professor of Neurology at the Alma Mater Studiorum

Affiliation :
University of Bologna

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Lunch symposium(Room 801)

Moderator

杭良文 (Liang-Wen Hang)

Position :
Associate Professor Chief of Respiratory care Center Chief of Sleep Medicine Center

Affiliation :
China Medical University China Medical University Hospital

Email : lungwen.hang@gmail.com

Research Interests :
Sleep Medicine、 Respiratory Care、Respiratory Therapy、Division of pulmonary and Critical Care

Speaker

The Current Evidence on OSA treatment in Pregnancy

Naricha Chirakalwasan

Position :

1.Assistant Dean

2.Program Director

3.Associate Professor

Affiliation :

1.International Affairs, Faculty of Medicine Chulalongkorn University, Bangkok, Thailand

2.International Sleep Medicine Fellowship

3.Pulmonary and Critical Care Division

Department of Medicine, Faculty of Medicine

Chulalongkorn University, Bangkok, Thailand

Research Interests :

Obesity Hypoventilation Syndrome, Obstructive Sleep Apnea, Positional Sleep Apnea, , Insomnia

Speaker

Community-Based Services of Home Sleep Apnea Testing in southern Taiwan

林政佑 (Cheng-Yu Lin)

Position :
Director, Sleep Medicine Center

Associate Professor, Department of Otolaryngology

Affiliation :
National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan, Taiwan

Email : yu621109@ms48.hinet.net

Research Interests :
Sleep surgery; Obstructive sleep apnea; Occupational sleep disorders

Selected Publications :

1.Lai DC, Tseng YC, Lin CY*, Guo HR*. Screening, rubella vaccination, and childhood hearing impairment in Taiwan. Res Dev Disabil. 2014; 35(11) : 3182-3190. (SCI; Impact factor=1.630; Ranking in Rehabilitation = 19/70 =27.14%)(Times cited : 0)

2.Lin CY, Shih TS, Liou SH, Lin MH, Chang CP, Chou TC : Predictors for progression of sleep-disordered breathing among public transport drivers : a 3-year follow-up study. J Clin Sleep Med. 2015; 11(4) : 419-425. (SCI; Impact factor=3.429; Ranking in Clinical Neurology = 56/194 =28.87%)(Times cited : 0)

3.Chen YC, Lin CY, Strong C, Li CY, Wang JS, Ko WC, Ko NY : Sleep disturbance at the time of a new diagnosis : a comparative study of human immunodeficiency virus patients, cancer patients, and general population controls. Sleep Med. 2017; 36 : 38-43. (SCI; Impact factor=3.391; Ranking in Clinical Neurology = 58/194 =29.90%)

4.Lin CY, Ho CS, Tsai WC, Chen JY* : Different effects of apnea during rapid eye movement period on peripheral arterial stiffness in obstructive sleep apnea. Atherosclerosis. 2018; 269 : 166-171. (SCI; Impact factor=4.239; Ranking in Peripheral Vascular Disease = 10/63 =15.87%)

5.Lin CY, Tseng YC, Guo HR*, Lai DC*. Prevalence of childhood hearing impairment of different severities in urban and rural areas : a nationwide population-based study in Taiwan. BMJ Open 2018;8 : e020955. DOI : 10.1136/bmjopen-2017-020955. (SCI; Impact factor=2.369; Ranking in Medicine, General & Internal = 38/155 =24.5%)

6.Lin CY, Tsai PJ, Lin KY, Chen CY, Chung LH, Wu JL, Guo YL*. Will daytime occupational noise exposures induce nighttime sleep disturbance? Sleep Med. 2018; 50 : 87-96. (SCI; Impact factor=3.391; Ranking in Clinical Neurology = 58/194 =29.90%)

Abstract :

Obstructive Sleep Apnea (OSA) is a common disease in the general population, which may be associated with a wide range of other medical conditions. It is often overlooked or misdiagnosed. In order to identify the OSA severity, it requires in-laboratory polysomnography (PSG). PSG is the gold standard for diagnosis of OSA as well as other sleep disorders. However, the use of home sleep apnea testing (HSAT) to screen for OSA in community populations has increased greatly because of its lower cost, lower technical complexity, and greater convenience, versus PSG. The most commonly used portable monitors for HSAT are types 3 and 4. Adherence to expert consensus guidelines for use of HSAT is essential. Differential clinical characteristics of patients with non-OSA sleep disorders and OSA may help guide correct diagnosis. Through SWAT (Strength, Weakness, Opportunity, Threat) matrix, we will present our clinical experiences of community-based HSAT in southern Taiwan.

Symposium 3 -
Differential diagnosis of Narcolepsy and Hypersomnia (Room 802)

Moderator

Giuseppe Plazzi

Position :
Associate Professor of Neurology at the Alma Mater Studiorum

Affiliation :
University of Bologna

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Moderator

Seung Bong Hong

Position :
Doctor

Affiliation :
Sleep Center, Samsung Medical Center, Department of Neurology, Sunkyunkwan Unicersity School of Medicine, Korea

Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Speaker

Comparison of the prevalence of cardiovascular disorder between middle aged patients with narcolepsy and those with idiopathic hypersomnia disorder

Yuichi Inoue

Position :
Professor

Affiliation :
Department of somnology Tokyo Medical University

Research Interests :
Main target of his research is clinical sleep medicine including researches on insomnia, RBD, movement disorders and hypersomnia.

Speaker

Nocturnal SOREMPs as a Predictor of the Severity of Narcolepsy in Korea

JiHye Oh

Position :
Clinical fellow

Affiliation :
St. Vincent's Hospital

Research Interests :
Narcolepsy, Insomnia disorder, Cognitive and Behavioral Therapy (CBT) for sleep disorders

Selected Publications :
The Reliability and Validity of the Korean Version of Behavioral Activation for Depression Scale J Korean Neuropsychiatry Assoc. 2017 May;56(2) : 89-97. Korean.

Abstract :

Study Objectives

The aim of this study is to investigate the severity of narcolepsy based on the presence of nocturnal sleep onset rapid eye movement sleep period (nSOREMP).

Methods

Subjects included 167 narcolepsy patients diagnosed at the St. Vincent Hospital, the Catholic University of Korea. They underwent polysomnography (PSG) and Multiple Sleep LatencyTest (MSLT). The standardized face to face interview and Epworth Sleepiness Scale were used to inquire about daytime sleepiness of the patients. Overall retrospective chart review was performed on their sleep health data.

Results

The presence of nSOREMP was highly correlated with short mean sleep latency and high number of SOREMPs in MSLT. Subjects with nSOREMP also demonstrated higher percentage of N1 sleep, lower percentage of N2 sleep, and more frequent

arousals in PSG. Also, they showed higher prevalence of cataplexy and HLA DQB1*0602 positivity.

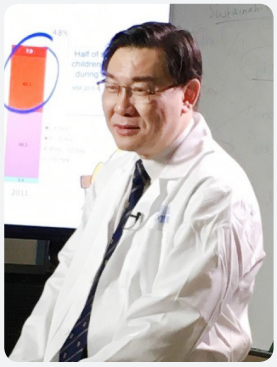
Conclusions

The subjects with nSOREMP showed more excessive daytime sleepiness and lower quality of sleep compared to the subjects without nSOREMP. Our study thereby suggests that nSOREMP possibly be the severity marker of narcolepsy.

Keywords

Multiple Sleep Latency Test, nocturnal Sleep Onset Rapid Eye Movement Sleep Period, nocturnal polysomnography, narcolepsy, cataplexy,

Speaker



Narcolepsy and RBD

Yun Kwok Wing

Position :
Professor

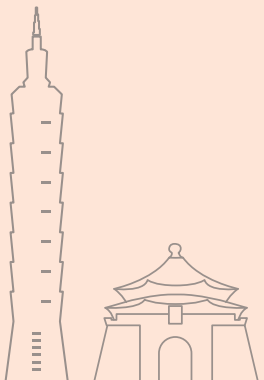
Affiliation :
Department of Psychiatry The Chinese University of Hong Kong

Research Interests :
sleep and circadian medicine, psychiatric disorders, neuropsychiatry, and transcultural psychopharmacology with extensive publications in international journals

Abstract :

Narcolepsy is a life-long disorder of central hypersomnolence. Although not being listed as a diagnostic feature in narcolepsy, symptom of REM Sleep Behavioural Disorder (RBD) has been reported to occur in nearly 50% of patients. It has been reported that RBD in narcolepsy (N-RBD) presented differently from that of idiopathic RBD (I-RBD) in terms of frequency, degree of pathology and long term prognosis. N-RBD was also found to be presented more frequently in Narcolepsy type 1 (NT1) and might help in diagnosing childhood NT1. In our study, the case notes and sleep study results of 109 patients (mean age 27.1 14.3 at baseline) diagnosed narcolepsy were analyzed, in which 65 of them had Multiple Sleep Latency Test (MSLT), Epworth Sleepiness Scale and BMI measured at both the baseline and follow up. The mean follow-up duration was 7.7 5.8 years (range 1-21 years). Fifty-five patients (50.5% of 109) had cataplexy at baseline. Six (11.1%) out of the 54 patients, who did not have cataplexy at baseline, developed cataplexy at follow up. Twenty-one (19.3% out of 109) patients presented with RBD symptoms and/or PSG documented RBD finding at baseline, which increased to 26 (40% out of 64) at follow-up, with an overall prevalence of RBD of 33.9% (37 out of 109). Patients with cataplexy (NwC) (16 out 61) had only marginally more RBD than those without cataplexy (Nw/oC) (5 out of 48) (p=0.05) at baseline. At follow up, more RBD features were reported by

NwC than Nw/oC (28/61 vs 9/48, p = 0.004). On the other hand, NwC with childhood/adolescence onset (age < 16) did not present with more RBD features than Nw/oC. At baseline, RBD subjects had a significantly lower daytime MSL, while at follow up, they had a shorter nocturnal sleep latency instead. There was no difference in the other sleep parameters between those with and without RBD. More patients with cataplexy were on treatment with SSRI/SNRI antidepressants (21 vs 3) but there was no difference between those with and without RBD (13 vs 11). Seven subjects were on treatment with clonazepam with 6 of them being RBD positive.



Speaker

Long Term follow up of MSLT variables in Type 2 Narcolepsy in Korea

Seung Chul Hong

Position :
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Research Interests :
Narcolepsy、Hypersomnolence、Sleep Medicine

Abstract :

Narcolepsy with cataplexy has high repeatability of positive multiple sleep latency test(MSLT), however, in the study by Trotti, only 33% of patients without cataplexy had a second positive MSLT.

Diagnostic criteria of narcolepsy type 2 in ICSD 3 completely depends on the result of MSLT as symptoms of cataplexy is not included. ICSD 3 over-relies on MSLT, so it results in diagnostic dilemmas. MSLT is validated in diagnosing type 1 narcolepsy, but it appears to have poor repeatability in type 2 narcolepsy. Mignot's study showed MSLT repeatability was as high in type 1 as 71.7%-81.1%, low in type 2 narcolepsy as 16.7% to 30%. The lowest in control 6.7%-7.6%. It requires re-evaluation of current diagnostic criteria for type 2 narcolepsy and Idiopathic Hypersomnia, as ICSD 3 criteria heavily depends on the MSLT to render these diagnoses. MSLT is the gold standard for type 1 narcolepsy, but it may not be the best test for other pathologies of excessive daytime sleepiness including type 2 narcolepsy. YS Huang reported that type 1 narcolepsy is a well defined clinical entity and has reproducible clinical neurophysiologic findings over time. However, 17.6% of type 2 narcolepsy did not meet the diagnostic criteria of narcolepsy type 2 during the 5 year follow-up. They raised the question about whether we need to use type 2 narcolepsy as follow up MSLT results is variable. SC Hong reported the longitudinal follow up data of narcolepsy type 1. It had a very good repeatability. More than 95% of them retained meeting MSLT criteria. However, type 2 narcolepsy presented test variability, only 48% remained type 2 narcolepsy and 52% were changed as idiopathic hypersomnia or normal.

Symposium 6 -OSA and PAP Treatment：Cases Discussion (Room 801)

Moderator

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Pulmonary Medicine Tuberculosis : diagnosis, immunology and vaccination.

Moderator

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Speaker

OSA and PAP Treatment : Cases Sharing

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Research Interests :
Internal Medicine

Pulmonary and Critical Care Medicine

Sleep Medicine

Epidemiology

Selected Publications :

1.Lin MT, Lai CL, *Lee PL, Shen MH, Yu CJ, Fang CT, *Chen CL. Timely diagnosis and treatment of sleep apnea reduce cardiovascular sequelae in patients with myocardial infarction. PLoS One. 2018;13(7) : e0201493.

2.Lee CF, Lee CH, Hsueh WY, *Lin MT, *Kang KT. Prevalence of obstructive sleep apnea in children with Down syndrome : A meta-analysis. J Clin Sleep Med. 2018;14(5) : 867-75.

3.Liu HW, Chen YJ, Lai YC, Huang CY, Huang YL, Lin MT, Han SY, Chen CL, Yu CJ, *Lee PL. Combing MAD and CPAP as an effective strategy for treating patients with severe sleep apnea intolerant to high-pressure PAP and unresponsive to MAD. PLoS One. 2017;12(10) : e0187032.

4.Kang KT, Koltai PJ, Lee CH, Lin MT, Hsu WC. Lingual tonsillectomy for treatment of pediatric obstructive sleep apnea : A meta-analysis. JAMA Otolaryngol Head Neck Surg. 2017;143(6) : 561-8.

Abstract :

A 61 years old male patients with severe OSAS under regular CPAP control for 9 years needed higher but intolerable pressure for increased AHI during follow-up.

Speaker

OSA and PAP Treatment : Cases Sharing

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Speaker

OSA and PAP Treatment : Cases Sharing

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Research Interests :
Pulmonary and Critical Care Medicine

Sleep Medicine

Interventional bronchoscopy

Selected Publications :

1.Ni YL, Ho SC, Lin HC, Wang CH, Yu CT, Kuo HP. Chronic cough and obstructive sleep apnoea in a sleep laboratory-based pulmonary practice.Cough. 2013 Nov 5;9(1) : 24.

2.Lo YL, Ni YL, Wang TY, Lin TY, Li HY, White DP, Lin JR, Kuo HP Bispectral Index in Evaluating Effects of Sedation Depth on Drug-Induced Sleep Endoscopy. J Clin Sleep Med. 2015 Sep 15;11(9) : 1011-20. doi : 10.5664/jcsm.5016

3.Lee LA, Lo YL, Yu JF, Lee GS, Ni YL, Chen NH, Fang TJ, Huang CG, Cheng WN, Li HY Snoring Sounds Predict Obstruction Sites and Surgical Response in Patients with Obstructive Sleep Apnea Hypopnea Syndrome. Sci Rep. 2016 Jul 29;6 : 30629. doi : 10.1038/srep30629.

Abstract :

A case with Asthma-COPD overlap syndrome has been diagnosed OSA. Intolerance to CPAP and poor compliance was noted during follow up.

Speaker

OSA and PAP Treatment : Cases Sharing

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Research Interests :
Sleep medicine

Biochemistry

Pulmonary medicine

Selected Publications :

1.Jiann-Horng Yeh, Chia-Mo Lin, Hou-Chang Chiu : Validation of the Current Extubation Criteria in the Myasthenic Crisis. 台灣醫學 . 2014 May, 18(3) : 338-344.

2.Chia-Mo Lin,Yu-Shu Huang,Shu-Ling Cho,Christian Guilleminault : The Controversial Role of Obesity in Findings in Obstructive-Sleep-Apnea Patients : EXPERIMENTAL & CLINICAL CARDIOLOGY. 2014 August,20(8) : 4455-4463.

3.Jessie Chao-Yun Chi, Rayleigh Ping-Ying Chiang, Tse-Yu Chou, Chih-Hung Shu, An-Suey Shiao, Chia-Mo Lin : The role of lateral pharyngoplasty in obstructive sleep apnea syndrome. European Archives of Oto Rhino Laryngology.2015 February, 272(2) : 489-96.

4.Zai-Ting Yeh, Sing-Kai Wung, Chia-Mo Lin : Pre-sleep Arousal as a Mediator of Relationships Among Worry, Rumination, and Sleep Quality. International Journal of Cognitive Therapy.2015 March, 8(1) : 21-34.

5.Ning-Hung Chen, Liang-Wen Hang, Chia-Mo Lin : Sleep medicine in Taiwan. Sleep and Biological Rhythms.2015 September.

Abstract :
INAP is a new intraoral negative pressure device to solve supine position related sleep apnea problem invented by Taiwan. Dr. Lin will introduce this device and share his laboratory experiences about how to improve compliance of this device in sleep apnea patients.

Course：Technologist Training and Polysomnogram Scoring Tests (Room 803)

Moderator

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Moderator

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Clinical Polysomnography

Speaker

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Research Interests :
Clinical Polysomnography

Selected Publications :
Clinical Polysomnography (2004)

Practice of Sleep Medicine (2011)

National Agreement in Sleep and Respiratory Scoring

Abstract :

目前國內外睡眠中心睡眠期、腦波覺醒和呼吸事件的判讀都是依據美國睡眠醫學會出版的「睡眠和相關事件判讀工作手冊 (法則、術語和技術規範)」。從 2007 年到 2018 年為止，美國睡眠醫學會總共發行 10 次版本。2014 年以後的版本有關睡眠期、腦波覺醒和呼吸事件的判讀法則皆已相當明確，而且幾乎不再有所變動。工作手冊中的許多修正、增訂和補充之判讀法則臨床意義重大，可以更加協助醫師睡眠障礙的診療，同時也大幅度地提升睡眠技師判讀的一致性。

臺灣睡眠醫學學會為了瞭解全國睡眠機構睡眠期、腦波覺醒和呼吸事件判讀的一致性，積極地推動睡眠和呼吸判讀可信度的評估工作。首先於學會雲端硬碟建立新資料夾，存放具有代表性的整夜睡眠檢查記錄檔 (EDF) 和判讀結果報表檔 (XLSX)。然後邀請北、中、南 10 所合格睡眠機構技師下載，依據 2014 年美國睡眠醫學會的判讀工作手冊，使用各自檢查系統的分析軟體判讀睡眠記錄。隨後再將判讀結果輸入報表並且寄送學會。報表資料經過彙整和匿名編碼後，利用統計軟體分析資料，探討全國睡眠機構技師判讀的差異性和一致性。

全國 10 所合格睡眠機構的判讀結果經與專家比對後，大部分的判讀一致性平均值屬於中度的水準。腦波覺醒指數的平均一致性百分比為 67.9%。睡眠期逐頁對照的平均一致性百分比為 73.4%，Kappa 係數的平均一致性比值則為 0.63。呼吸中止 + 淺呼吸指數的平均一致性百分比為 76.1%。全部呼吸中止次數的平均一致性百分比為 88.1%。阻塞型呼吸中止次數的平均一致性百分比為 86.9%，混合型呼吸中止次數的平均一致性百分比為 68.4%，中樞型呼吸中止次數的平均一致性百分比則為 52.4%。淺呼吸次數的平均一致性百分比為 65.5%。

評估結果顯示除了全部呼吸中止次數和阻塞型呼吸中止次數的判讀一致性平均值屬於強度的水準之外，其餘睡眠期、腦波覺醒指數、呼吸中止 + 淺呼吸指數以及淺呼吸次數的判讀一致性平均值皆低於國外文獻報告的研究結果。因此有些睡眠機構的技師教育訓練必須加強，才能提升睡眠機構之間睡眠期、腦波覺醒和呼吸事件判讀的一致性

Accurate Scoring of Sleep Stages

Abstract :

雖然睡眠期的判讀是整夜睡眠結構的評估基礎，但是基本結構中的許多微妙變化也引起更多的注意，尤其是睡眠專家極為重視的反覆性腦波覺醒 (EEG arousal)。因為腦波覺醒經常中斷睡眠期的持續性，所以就會導致睡眠的片斷化而使精神無法恢復，甚至造成白天嗜睡。臨床上腦波覺醒對於睡眠期的判讀佔著非常重要的角色。依據美國睡眠醫學會出版的判讀工作手冊，腦波覺醒的定義為任何睡眠期發生 3 秒鐘以上腦波頻率的突然改變 (阿爾法波、係他波和 / 或超過 16Hz 的頻率 (非紡綞波))。它們包含頭前、中央和頭後區的腦波變化。判讀腦波覺醒之前，患者必須持續 10 秒鐘以上的穩定睡眠。快速動眼期腦波覺醒的判讀必須伴隨至少 1 秒鐘下顎肌電波振幅的增強。此外，導致清醒的腦波覺醒亦須列入判讀。

非快速動眼第一期 (Stage N1, NREM 1) 被稱為淺睡期，其定義為具有明顯 4-7.99 cps 的低振幅、混合頻率腦波型態。非快速動眼第一期為清醒期轉變成其它睡眠期的過渡階段，因此通常穿插於清醒期和其它睡眠期之間。此外，對於中度或重度睡眠呼吸中止症的病患而言，因為非快速動眼第一期經常發生於腦波覺醒或重大身體動作之後，所以就會中斷非快速動眼第二期 (Stage N2, NREM 2) 和快速動眼期睡眠 (Stage R, REM)。因此導致非快速動眼第一期重覆地發生或時間的拉長。

依據美國睡眠醫學會出版的判讀工作手冊，非快速動眼第二期腦波覺醒後的頁數判讀為非快速動眼第一期，直到非腦波覺醒相關的 K 複合波或睡眠紡綞波出現為止。此外，非快速動眼第二期重大身體動作後的頁數如果出現緩慢的眼球轉動，而且未有 K 複合波或睡眠紡綞波時，亦判讀為非快速動眼第一期。快速動眼期下顎肌肉緊張度增加，超過快速動眼期的水準，而且合乎非快速動眼第一期的判讀標準時，判讀為非快速動眼第一期。此外，快速動眼期腦波覺醒或重大身體動作後的頁數如果出現緩慢的眼球轉動和低振幅、混合頻率的腦波型態時，亦判讀為非快速動眼第一期。

唯有熟悉美國睡眠醫學會出版的判讀工作手冊，並且妥善地依照和運用睡眠期和腦波覺醒的判讀法則，才能增進睡眠機構之間睡眠期和腦波覺醒判讀的一致性。

Accurate Scoring of Respiratory Events

Abstract :

早期國內外睡眠中心都是利用口鼻温度感應器偵測睡眠呼吸中止 (Apnea) 和淺呼吸 (Hypopnea)，並且將呼吸中止分成阻塞型、中樞型和混合型 3 種型態。阻塞型呼吸中止表示上呼吸道完全阻塞。在未有呼吸氣流期間，伴隨持續或增加的呼吸動作。中樞型呼吸中止為缺乏呼吸的驅策力。在未有呼吸氣流期間，也未有呼吸動作。混合型呼吸中止為上述兩種型態存在於同一事件中。在未有呼吸氣流期間，開始時缺乏呼吸動作，隨後恢復部份呼吸動作。淺呼吸則表示上呼吸道的呼吸氣流減少。目前國內外睡眠中心皆已改用口鼻温度感應器和鼻腔壓力轉能器分別偵測呼吸氣流。呼吸中止的判讀是以温度感應的氣流變化為依據，淺呼吸的判讀則是依據鼻腔壓力氣流的改變。

依據美國睡眠醫學會出版的判讀工作手冊，呼吸中止的判讀法則為温度感應的氣流振幅較基準振幅減少 90%，而且氣流振幅減少時間超過 10 秒鐘。淺呼吸判讀法則的建議則為鼻腔壓力氣流之振幅較基準振幅減少 30%，氣流振幅減少時間持續超過 10 秒鐘，而且附隨腦波覺醒和 / 或血氧飽和度降低 3%。至於鼻腔壓力氣流之振幅較基準振幅減少 30%，氣流振幅減少時間持續超過 10 秒鐘，而且附隨血氧飽和度降低 4% 的判讀法則亦可接受。此外，如果合乎淺呼吸判讀法則之呼吸事件的一部份也符合呼吸中止的判讀法則，則全部事件判讀為呼吸中止。

2018 年 7 月美國睡眠醫學會再次發表立場聲明，阻塞型睡眠呼吸中止症的診斷必須包含腦波覺醒為依據的淺呼吸判讀。因為附隨腦波覺醒的淺呼吸雖然未有血氧飽和度的降低，但是也會產生如同呼吸中止引起之顯著和潛在危險的症狀，尤其是日間過度嗜睡、疲勞或神經認知障礙的患者。因此對於阻塞型睡眠呼吸中止症的診斷而言，包含腦波覺醒為依據的淺呼吸判讀實屬必要。

熟悉美國睡眠醫學會出版的判讀工作手冊，並且妥善地依照和運用腦波覺醒和各種呼吸事件的判讀法則，尤其是包含腦波覺醒為依據的淺呼吸判讀。唯有如此，才能增進睡眠機構之間呼吸事件判讀的一致性。

Polysomnogram Scoring Tests

Abstract :

睡眠技師判讀睡眠圖譜的最終目標就是要提供臨床醫師準確的檢查結果，以作為睡眠障礙診療的依據。唯有優良品質的睡眠圖譜和準確的判讀技術才能獲得正確無誤的檢查結果。對於睡眠圖譜中複雜的生理變化和相關潛在的病理而言，睡眠技師必須具備敏銳的洞察力，才能瞭解檢查圖形是否受到干擾以及收集訊號的細微變化，以提出準確的判讀結果。

睡眠圖譜就像人類的指紋一樣，雖然檢查圖形看起來有些類似，但是每個睡眠記錄都是獨一無二、各具特殊型態。睡眠技師判讀睡眠圖譜時，除了必須依照美國睡眠醫學會最新版本的「睡眠和相關事件判讀工作手冊 (法則、術語和檢查技術說明)」判讀法則之外，同時也須依據病患各別特殊的生理變化型態。這種判讀知識和技術通常需要睡眠技師的臨床判斷。

對於準確的睡眠期和呼吸事件判讀而言，腦波覺醒的判讀扮演著極為重要的角色。依據美國睡眠醫學會的腦波覺醒判讀法則，單獨的雜訊、K 複合波、慢波或放大器的阻斷訊號不能夠被判讀為腦波覺醒，除非它們是伴隨著 3 秒鐘以上腦波頻率的突然變化。更進一步地補充解釋，如果上述的腦波活動或雜訊發生於腦波頻率的突然改變之前，它們不能被包含於 3 秒鐘的判讀法則。但是如果它們與腦波頻率的突然改變同時發生或發生於腦波頻率的突然改變之間，它們就應該被包含於 3 秒鐘的判讀法則。熟悉腦波覺醒 3 秒鐘時間的測量，可以大幅度地提升睡眠期和呼吸事件判讀的準確性。

Speaker

Polysomnogram Scoring Tests

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Research Interests :
Main target of his research is clinical sleep medicine including researches on insomnia, RBD, movement disorders and hypersomnia.

Moderator

毛衛中 (Wei-Chung Mao)

Position :
Chief of psychosomatic division

Affiliation :
Department of Psychiatry, Cheng Hsin General Hospital

Email : poorsleep@yahoo.com

Research Interests :
Sleep medicine, Brain science, Mental disorder

Case reports of Hidden Narcolepsy in Adolescents with Behavioral problems

Ji Hyun Lee

Position :
Director

Affiliation :
Dream Sleep Clinic, Seoul, Korea

Nocturnal Sleep in Narcolepsy Patients

Samson Fong

Position :
Doctor

Affiliation :
Psychiatry

Chinese University of Hong Kong

Abstract :

Although not being part of the diagnostic criteria for narcolepsy, disturbed nocturnal sleep (DNS) has been well documented as a common feature in narcolepsy. The relationship between DNS and EDS has not been well documented. For the diagnosis of narcolepsy, shortened nocturnal SOREMP has been included in the diagnostic criteria for narcolepsy, while other features including sleep stage transition and related power spectral analysis in both nocturnal and daytime naps were being investigated as additional discriminatory features assisting in the diagnosis of narcolepsy. In our study, the case notes and sleep study results of 109 patients (mean age 27.1 14.3 at baseline) with narcolepsy were analyzed, in which 65 of them had Multiple Sleep Latency Test (MSLT), Epworth Sleepiness Scale and BMI measured at both the baseline and follow up. The mean follow-up duration was 7.7 5.8 years (range 1-21 years). Fifty-five patients (50.5% of 109) had cataplexy at baseline. Six (11.1%) out of the 54 patients, who did not have cataplexy at baseline, developed cataplexy at follow up. Patients with cataplexy (type I) had a significantly shorter sleep latency and REM latency and MSL at the baseline but not with in other sleep parameters. Those subjects with subjective insomnia complaints, including difficulty in maintaining sleep and early morning wakening (but not difficulty in initiating sleep), had a shorter MSL at baseline. Baseline MSL was significantly correlated with WASO, REM latency and percentage of REM sleep. At follow up, the patients with cataplexy had a lower sleep efficiency, more WASO and more subjective complaint of early morning wakening. The early morning wakening was associated with more EDS (both in MSL and ESS score).

Actigraphy study and different Hypersomnia disorder

林澂 Steven Lin

Position :
Assistant Professor

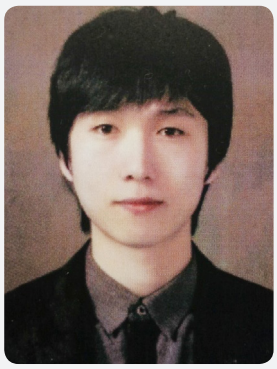
Affiliation :
Department of Biomedical Sciences and Engineering, National Central University

Abstract :
Actigraphy study and different Hypersomnia disorders

Dr. Chen Lin, Department of Biomedical Sciences and Engineering, National Central University

Dr. Yu-Shu Huang, Department of Child Psychiatry, Chang Gung Memorial Hospital

Actigraphic technology measures gross motor movement by using the accelerometer sensor and has been applied to many wearable devices to detect sleep-wake cycles and assess the quality of sleep. Also, analysis of circadian rhythmicity in humans can provide alternative markers of stability and fragmentation of the rest-activity rhythm and has shown the potential to differentiate different types of central disorders of hypersomnolence or to follow up the effect of treatment in recent studies. We performed a comprehensive analysis of the actigraphy recorded from pediatric patients with several different types of central disorders of hypersomnolence such as Klein-Levine syndrome and Narcolepsy as well as the changes of the derived parameters during treatment. Furthermore, we assessed the fractal regulation of motor activity (scale-invariant property) based on chaos theory to evaluate the relationship between the central control system and motor activity beneath the 24-h/circadian rhythmicity.



Two cases series of Narcoleptic patients with Sleep Paralysis as a Chief Complaint

Yongwon Choi

Position :
Doctor

Affiliation :
Department of Psychiatry

St. Vincent's hospital, College of Medicine, The Catholic University of Korea

Abstract :

Sleep paralysis is considered as a dissociated state during which Rapid Eye Movement (REM) sleep related muscle atonia appears while a subject is fully awake. We present a 22-year old man and a 19-year old man diagnosed with narcolepsy who previously visited our clinic with phenomenon of sleep paralysis. When a patient is brought to the clinic with sleep paralysis, various physiologic and medical conditions such as stress, trauma, hereditary factors, physical health, sleep disorders and other psychiatric disorders are taken into consideration. Prevalence of sleep paralysis in narcolepsy patients is known to be 20–50%. Therefore, it is necessary that clinicians should carefully examine the presence or absence of narcoleptic symptoms when dealing with patients with sleep paralysis and should conduct the Multiple Sleep Latency Tests (MSLT) confirm the diagnosis of narcolepsy if necessary.

Oral presentation B：OSA and EDS (Room 801)

Moderator

李佩玲 (Pei-Lin Lee)

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Director

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Research Interests :
Sleep medicine, Molecular biology and Pulmonary and critical care medicine

Moderator

杭良文 (Liang-Wen Hang)

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Associate Professor Chief of Respiratory care Center Chief of Sleep Medicine Center

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China Medical University China Medical University Hospital

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Research Interests :
Sleep Medicine、 Respiratory Care、Respiratory Therapy、Division of pulmonary and Critical Care

Comorbidity of Narcolepsy and Obstructive Sleep Apnea

Hayeon Kim

Position :
Doctor

Affiliation :
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St. Vincent's Hospital, The Catholic University of Korea

Abstract :

Excessive daytime sleepiness (EDS) is the main symptom in narcoleptic patients. Obstructive sleep apnea (OSA) is known to be related to EDS. We describe three cases of narcolepsy that were misdiagnosed as other diseases or as OSA alone. Tree patients with the onset of snoring and daytime sleepiness in adolescence were referred to our sleep center. Polysomnography showed severe sleep apnea. Their multiple sleep latency test (MSLT) met the diagnostic criteria of narcolepsy. Another patient who had EDS and snoring showed severe OSA and positive results on MSLT. However, longitudinal clinical symptoms of this patient diered from those of the three cases. EDS was ameliorated in all four patients following the treatment with psychostimulants and the application of Continuous positive airway pressure. Patients suering from EDS may be co-diagnosed with narcolepsy and OSA. Clinicians should be aware of the possibility of false-positives of MSLT and the patient's longitudinal clinical course.

The study of dynamic cerebral autoregulation in patients with central disorders of hypersomia

Zan Wang

Position :
Professor

Affiliation :
Neurology department

The first hospital of Jilin University

Changchun , China

Research Interests :
Neurology、Narcolepsy、Hypersomnolence

Selected Publications :

1.Wang Zan,ShiY,Liu F,Jia N,Deng F, diversiform etiolgies for Post-stroke depression,Front Psychiatry.2019,Jan,23;9 : 761

2.Zhen-ni Guo,Xin Sun, Yingkai Zhao, Zan Wang*,,Yi Yang*,Temporal course of cerebralautoregulation in Patients with Narcolepsy Type 1 : two case reports Frontiers in neurology,2019,01,10

3.Jian Nanzhu,Xiangyu Zheng, Jiafeng Chen,Xiaonan Song, Zan Wang*, Adult-onset hemophagocytic syndrome with severe central nervous system involvement : a case report". International journal of hematology therapy,2018(3)

4.Yanan Zhang, Zhen-Ni Guo, Hongwei Zhou, Yingying Cheng , Zan Wang* Fabry disease with acute cerebral infarction onset in ayoung patient, Chinese Medical journal ,2019(132) : 477-479;

5.Zhou tong, Zhen-Ni Guo, Yu Dan Lv, Jian Nan Zhu, Baoxin Ma, Zan Wang* Study on the neuroprotection and mechanism of C-EPO and EPO in MCAO mice models,International journal of hematology therapy,2017(3)

Altered miR-21-5p and miR-23a-3p expressions in obstructive sleep apnea modulates cell apoptosis by targeting pro-inflammatory genes

Yung-Che Chen[1,2], Meng-Chih Lin[1,2], Mao-Chang Su[1,2], Po-Yuan Hsu[1,3], Chien-Hung Chin[1,2], Kuo-Tung Huang[1,2], Ting-Ya Wang[1,4], Yung-Yung Lin[1,4], Chia-Wei Liou[3], Shu-Jun Kong[1,2], Lian-Rong Liu[1,2], Wei-Zhe Liu[1,2], Yi-Jing Li[1,2]

Kaohsiung Chang Gung Memorial Hospitaland Chang Gung University College of Medicine

Background :

The purpose of this study is to explore the anti-inflammatory role of microRNAs (miR)-21/23/146a/150/155 targeting the toll-like receptor pathway in response to chronic intermittent hypoxia with re-oxygenation (IHR) injury in patients with obstructive sleep apnea (OSA).

Methods :

Gene expression levels of the five miRs, TLR2/4/6, and their down-stream mediators were assessed by quantitative RT-PCR method in peripheral blood mononuclear cells from 40severe OSA patients, and 20 matched subjects with primary snoring (PS). Human monocytic THP-1 cell lines were induced to undergo apoptosis with IHR exposures, and transfected with miR-21-5p mimic.

Results :

Gene expression levels of miR-21-5p(adjusted p=0.024) and miR-23a-3p(adjusted p=0.028) were decreased in treatment-naïve OSA patients as compared with that in PS subjects, while TNF-α gene expression (adjusted p=0.04) was increased. Gene expression levels of both miR-21-5p, and miR-23-3p were negatively correlated with apnea hypopnea index (r=-0.478, p<0.001; r=-0.446, p=0.001) and oxygen desaturation index (r=-0.45, p=0.001; r=-0.421, p=0.001), while TNF-α gene expression positively correlated with apnea hypopnea index (r=0.388, p=0.003). Both miR-21 5p and miR-23-3p gene expressions were negatively correlated with their predicted target gene expressions,including TLR4, TLR6, TNF-α, NFAT5, ELF2, SP1, PDCD4, and HIF-2α. In vitroIHR treatmentresulted in increased apoptosis and decreased cell viability along with decreasedmiR-21-5p, miR-23-3p, and miR-155-5p

gene expressions, but increasedmiR-146a-5p (all p values <0.05).The percentage of cytotoxicity and gene expressions of TNF-α, ELF2, NFAT5,HIF-2α, IL6, IL6R, EDNRB, and TLR4 were increased with IHR as compared with that in normoxic condition, while decreased with miR-21-5p mimic transfection under IHR condition as compared with that in IHR alone condition.

Conclusions :

MiR-21-5p and miR-23-3p were down-regulated both in severe OSA patients and with in vitro IHR stimuli, while several predicted pro-inflammatory target genes were up-regulated.The findings provide biological insight into mechanisms by which IHR-suppressed miRs protect cell apoptosis via inhibit inflammation, and indicate that over-expression of the miR-21-5p may be a new therapy for OSA.

中文題目：阻塞性睡眠呼吸中止症異常的第 21 和 23a 型微小核醣核酸表現會經由抑制促進發炎基因來降低細胞凋亡

作　　者：陳永哲 [1,2] 林孟志 [1,2] 蘇茂昌 [1,2] 許博淵 [1,3] 秦建弘 [1,2] 黃國棟 [1,2] 王亭雅 [1,4] 林詠詠 [1,4] 劉嘉為 [5] 孔淑君 [2] 劉蓮榮 [2]　劉瑋哲 [2] 李怡靜 [2]

服務單位：高雄長庚醫院 [1] 胸腔內科 [2] 睡眠醫學中心 [3] 醫研部 [4] 核心實驗室 [5] 神經內科

Parapharyngeal Fat Pad Area at The Subglosso-Supraglottic Level is Associated with Corresponding Lateral Wall Collapse and Apnea-Hypopnea Index in Patients with Obstructive Sleep Apnea : A Pilot Study

Hung-Chin Chen*, MD[1], Li-Ang Lee, MD, FICS[1], Hsueh-Yu Li, MD, FACS, FICS[1], Chao-Jan Wang, MD[2], Yu-Lun Lo, MD[3]

Department of Otolaryngology-Head and Neck Surgery, Sleep Center, Linkou-Chang Gung Memorial Hospital, Chang Gung University, Taoyuan, Taiwan[1]

Department of Medical Imaging and Intervention, Sleep Center, Linkou-Chang Gung

Memorial Hospital, Chang Gung University, Taoyuan, Taiwan[2]

Department of Thoracic Medicine, Sleep Center, Linkou-Chang Gung Memorial Hospital, Chang Gung University, Taoyuan, Taiwan[3]

Objective :

To assess associations between fat pad areas at various anatomic levels and the sites of lateral wall collapse and disease severity in adult patients with obstructive sleep apnea (OSA).

Methods :

Forty-one adult patients (39 males and 2 females) with OSA who prospectively underwent a drug-induced sleep CT scan were included. Areas of parapharyngeal fat pads and degrees of lateral wall collapse at three representative anatomic levels (nasopharynx, oropharynx, and subglosso-supraglottis), and apnea-hypopnea index (AHI) were measured.

Results :

The median AHI and body mass index were 50.2 events/h and 26.5 kg/m2, respectively. In the subglosso-supraglottic region, the parapharyngeal fat pad area in 17 (41%) patients with complete lateral wall collapse was significantly larger than that in 24 (59%) patients without complete collapse (median, 236.0 mm2 vs 153.0 mm2; P = 0.02). The parapharyngeal fat pad areas at the subglosso-supraglottic (r = 0.63; P < 0.001) and nasopharyngeal (r = 0.35; P = 0.02) levels were significantly associated with AHI. In multivariate regression analysis, the parapharyngeal fat pad area at the subglosso-supraglottic level (β = 0.02; P = 0.01) and body mass index (β = 3.24; P = 0.01) were independently associated with AHI.

Conclusion :

In this preliminary study, the parapharyngeal fat pad area at the subglosso-supraglottic level was associated with complete corresponding lateral wall collapse and AHI. Further studies are warranted to investigate the effect of parapharyngeal fat pad areas on the treatment of OSA.

中文題目：阻塞性睡眠呼吸中止症病人舌下聲門上區域 (subglosso-supraglottic level) 側咽脂肪墊的面積和睡眠呼吸中止指數 (apnea-hypopnea index) 以及側咽壁的塌陷有正相關性：初探性研究

作　　者：陳弘晉醫師[1*]，李立昂醫師[1]，李學禹醫師[1]，王超然醫師[2]，羅友倫醫師[3]

服務單位：林口長庚紀念醫院 長庚大學 耳鼻喉科、睡眠中心[1] 林口長庚紀念醫院 長庚大學 影像診療科、睡眠中心[2] 林口長庚紀念醫院 長庚大學 胸腔內科、睡眠中心[3]

Oral presentation C：Sleep related issues (Room 803)

Moderator

林光麟 (Kuang-Lin Lin)

Position :
Associate professor

Affiliation :
Chang Gung Children's Hospital, Taoyuan, Taiwan

Email : lincgh@cgmh.org.tw

Research Interests :
Epilepsy, Tourette syndrome, Autoimmune encephalitis

Moderator

莊立邦 (Li-Pang Chuang)

Position :
Chief, Sleep Center

Affiliation :
Chang Gung Memorial Hospital, LinKo Branch

Email : lpchuang1678@yahoo.com.tw

Research Interests :
Sleep Apnea, Intermittent Hypoxia, Cell Model, Animal Model

Correlation between Insomnia and Risky Behaviors in Taiwanese Adolescents

顏正芳 (Cheng-Fang Yen)

Affiliation :

Department of Psychiatry, Faculty of Medicine, College of Medicine, Kaohsiung Medical University, Kaohsiung,Taiwan

Department of Psychiatry, Kaohsiung Medical University Hospital, Kaohsiung Medical University, Kaohsiung,Taiwan

Abstract :

Background :

The aims of this cross-sectional study were to examine the correlation between the two insomnia factors of the AIS-8 we previously identified and a variety of adolescent risky behaviors, including suicidal behavior, violence, regular alcohol drinking, illicit drug use, and truancy using a large-scale, representative population of Taiwanese adolescents.

Methods :

This investigation was based on data from the Project for the Health of Adolescents in Southern Taiwan, which were collected from three metropolitan cities and four counties. 207 classes that included a total of 12,210 adolescent students were randomly selected.A total of 11,111 (91.0%) adolescents gave written informed consent for participation.Measures included the Athens Insomnia Scale (AIS-8) for insomnia problems, suicidality module on the Epidemiological version of the Kiddie Schedule for Affective Disorders and Schizophrenia for suicidality, the Adolescent Aggressive Behaviors Questionnaire for violence, the Questionnaires for Experience in Substance Use (Q-ESU) for alcohol consumption and illicit drug use, truancy, and the Center for Epidemiological Studies-Depression Scale (CES-D) for depressive symptoms.

Results :

Adolescents who had more severe insomnia symptoms were more likely to report suicidality, violence, and truancy, but not regular alcohol drinking or illicit drug use. Adolescents who had poorer subjective sleep and more daytime distress were more likely to report all five risky behaviors.

Summary :

Our findings suggest the importance of subjective sleep and daytime distress when screening for the likelihood of risky behavior in adolescents. Clinicians and researchers should consider the possible need for intervention to avoid risky behavior when adolescents report problems with subjective sleep and daytime distress.

Oral presentation

Interest cases of sleep-related movement disorders

張明瑜

Position :
Doctor

Affiliation :
Chang Gung Memorial Hospital, LinKo Branch

Abstract

To make an accurate diagnosis of sleep-related movement disorder for pediatric patients is a challenge for neurologists, sometimes it would take redundant examinations and misdiagnosis is not uncommon. We will report several interest cases of sleep-related movement disorders and also share their interest videos in this presentation as well.

Deep brain stimulation of anterior nucleus of the thalamus in Pentylenetetrazol-induced seizure rats model enhance REM sleep and decrease NREM delta power

Hsin-Tzu Tseng[1*], Pei-Lu Yi[2], Fang-Chia Chang[1]

[1]**National Taiwan University**

[2]**Aletheia University**

Objective :

Epilepsy patients, known as losing body control from sudden clonic convulsion, suffer from sleep disruption. Deep brain stimulation (DBS) is an electrical stimulation treatment for movement disorder at the beginning, but it's been approved for epilepsy treatment by FDA in 2018. The anterior nucleus of the thalamus (ANT) may be a promising brain region for DBS treatment, because the ANT has a wide projection to neocortex via the cingulate gyrus. In this study, we are going to evaluate the anti-epileptic efficacy of ANT DBS and the effects on sleep in the epileptic rats.

Methods :

For epilepsy rat model, we injected Pentylenetetrazol (PTZ, 40 mg/kg, i.p.), a GABAA antagonist, in a low dose every day to induce kindling seizure until 14 days. Implantation of electrocorticograph (ECoG) electrodes and a DBS electrode to the ANT have been done for collecting brain wave data and stimulation, respectively. Additional electromyogram (EMG) electrodes were implanted into the neck muscle. The stimulation parameter was set at biphasic pulse 200Hz, 50 μA, 100 μsec pulse width. Analysis of sleep states were according to the recordings of ECoG and EMG. The time of wakefulness, NREM sleep, REM sleep and the variation of delta powers in NREM sleep were analyzed.

Results :

The delta power in NREM sleep in epileptic rats was decreased from 20.48 μV2/Hz to 5.9μV2/Hz when rats received DBS. Although NREM sleep was not altered by DBS, REM sleep in epileptic rats with DBS was significantly increased in light period, especially at zeitgeber time (ZT) 6, ZT7, ZT8 and ZT9.

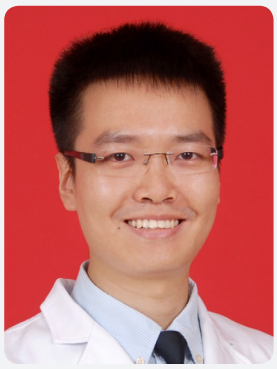
Conclusion :

DBS seems to decrease the power of synchronized brain wave in NREM sleep which is easily generate seizure, and boosts the duration of REM sleep, the most protective stage of sleep to against focal seizures, generalized seizures, and focal interictal discharges.

中文題目：視丘前核之腦部深層電刺激可提升癲癇大鼠快速動眼期睡眠時間以及降低非快速動眼期 delta power

作　　者：曾信慈[1*] 尹珮璐[2] 張芳嘉[1]

服務單位：[1] 國立台灣大學獸醫學系；[2] 真理大學運動管理學系



A false alarm of narcolepsy : obstructive sleep apnea masquerading as narcolepsy and depression

Shuai Liu

Position :
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Organizers

Taiwan Society of Sleep Medicine

Asian Narcolepsy & Hypersomnolence Society

Co-Organizers

Taiwan Hypersomnia Association

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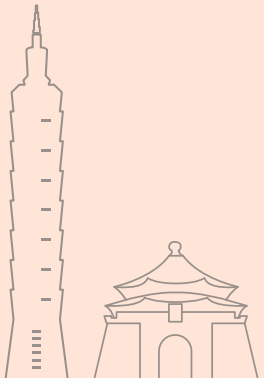


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