

WCN19-0103**Journal of the Neurological Sciences 405S (2019) 104029****Free papers 18 - Epilepsy 2****Evaluation of grey and white matter structural difference between hot water epilepsy and juvenile myoclonic epilepsy with multimodal multivariate approach using MCCA and joint ICA**

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Background

Multimodal-multivariate fusion methodology examines shared/distinct information by combining multiple neuro-imaging biomarkers. Grey and white matter microstructural difference between Hot water epilepsy(HWE),MR-negative temporal lobe epilepsy syndrome and Juvenile myoclonic epilepsy(JME)a idiopathic generalised epilepsy syndrome never been explored.

Aim

To evaluate using multimodal canonical correlation analysis and joint independent component analysis (MCCA –joint ICA) to identify the covariance patterns of grey and white matter by fusing grey matter density(GMD),Fractional anisotropy(FA) and Mean Diffusivity (MD) parameters of HWE and JME subjects.

Methods

Fifty one HWE patients (34males;age:28.85 ± 10.8 years) and 51 JME(25 males; age:22.76 ± 5.9 years) underwent 3 T-Epilepsy protocol MRI. Pre-processing of MRI done with SPM12, CAT12 and FSL software.The whole brain GMD,FA and MD map features were fed into the MCCA–joint ICA software integration. The loading of Independent components(ICs) used for discriminative and correlation analysis.

Results

Of the 10 joint ICs generated, one component (ICs_8) was significantly different in all modality between diagnostic groups. One dual (GMD and FA),modality-common group-discriminative component (IC_7) and four (2 each for GMD and FA) modality-unique group-discriminative ICs were also noted. The grey matter structural network consisted of bilateral fronto-occipito-cerebellar network and white matter network consisted of bilateral projection, association as well as commissural tracts. The MD network were less extensive than the FA network.

Discussion

Both modality-common and modality-unique networks were identified between HWE and JME subjects. Multi-modality approaches provides complementary information in differentiating the different tissue characteristics at different spatial and temporal resolutions.

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WCN19-0699**Journal of the Neurological Sciences 405S (2019) 104030****Free papers 18 - Epilepsy 2****Progress of epilepsy control in China in recent years**

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In China, it was estimated that there are about 9 million people with epilepsy (PWE), two thirds of them are “active” cases and every year 400,000 new cases.

In recent years, the epilepsy control has got a great progress in China, those include: 1, Epilepsy has been integrated into primary health care: The Prevention & control project in rural China, which funded by the government, has been implemented in 248 counties of 18 provinces till the end of 2017, about 116 thousand convulsive PWE were under management with Phenobarbital and/or Valproic acid free of charge and the government funding increased from 0.64 million US dollars in 2005 to 3.32 million US dollars in 2017; 2, Since the establishment of the China Association Against Epilepsy (CAAE) in 2005, a series of significant programs were carried out in China, as 7 “CAAE International Epilepsy Forum”s, “International Epilepsy Caring Day” On June 28th since 2007, a series of public education activities, national training program on EEG technology and examination, etc.; 3, Special epilepsy clinical facilities has been developed quickly in China, presently there are 358 different level “Epilepsy centres” in China; 4, The technique of clinical treatment and basic research got a remarkable progress as well, as of epilepsy surgery, neuro-modulation, stereotaxic EEG, genetic research, etc.

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WCN19-0672**Journal of the Neurological Sciences 405S (2019) 104031****Free papers 18 - Epilepsy 2****Sub-Saharan study of photoparoxysmal response in a reference epilepsy lab**

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Introduction

The photoparoxysmal response (PPR) is defined as the occurrence of generalized spike, spike-wave or polyspike-wave discharges consistently elicited by intermittent photic stimulation (IPS). PPR is not well studied in the African black subject

Method

We prospectively studied the epidemiological, clinical and EEG characteristics of PPR among consecutive epileptic patients seen in the EEG laboratory at Fann University Hospital at Dakar in Senegal.

Result

Among 3065 pathological EEGs for one year, we collected 56 EEGs (1.8%) with PPR, including 31 women and 25 men (sex ratio: 0.8). The mean age was 13.3 years (range: 8 months to 59 years). The peak of photosensitivity was found in the range of 6 to 10 years. Of the PPR cases, 40 were not known epileptic, of whom 12 had had clinical manifestations during IPS. 23% of patients were classified with generalized epilepsy, followed by 17% of focal epilepsy. The most epileptogenic stimulation frequencies are between 12 and 24 Hz. PPR were obtained most often when the eyes are closed (64%) and 41 patients (73% of patients) were classified as Type 4 (Waltz classification).

Conclusion

Our results suggests lower rates of photosensitivity in sub-Saharan people compared with Caucasians. Therefore, subject to consistent larger cohorts data, it would be interesting to study a probable epigenetic protective value of sunshine against photosensitivity.

Keywords: Epilepsy, Photoparoxysmal response, Intermittent photic stimulation

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Free papers 18 - Epilepsy 2

Prognostic value of EEG in critically ill patients: Analysis of 501 cases

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Aim

To establish if EEG could prognosticate clinical outcomes in ICU settings.

Material and methods

All adult patients, age > 18 years admitted to the ICU between January 2014 to December 2016, who underwent (emergent EEG) eEEG monitoring were included. Details of electro-clinical and radiological data were abstracted. Outcome at discharge was classified clinically as good if there was recovery and poor if there was disability or death. eEEG findings and eventual clinical outcomes were correlated.

Results

A total of 501 patients were consistent with our operational definition of eEEG along with complete clinico-radiological data. Three hundred and thirty-nine patients (67.66%) were male and the mean age was 53.15 years. EEG patterns included triphasic waves, TW ($n = 43$, 8.58%), burst suppression pattern, BSP ($n = 28$, 5.58%), electrographic seizure ($n = 24$, 4.79%), spindle coma ($n = 20$, 3.99%), electrocerebral

silence, ECS ($n = 17$, 3.39%), lateralized periodic discharges, LPD ($n = 13$, 2.6%), generalized periodic discharges, GPD ($n = 8$, 1.59%), alpha coma ($n = 3$, 0.59%). Clinically, good outcome was seen in 226 patients and poor outcome in 275 patients (residual disability, $n = 157$; death, $n = 118$). EEG indicators of poor prognosis in multivariate analysis included EEG suppression, BSP and ECS (p value < .05 and odds ratio > 1.0). In those patients who succumbed, EEG suppression, ECS and GPD were statistically significant (p value < .05 and odds ratio > 1.0).

Conclusion

We postulate that in critical care setting, EEG would help predicting the prognosis. Further prospective, multicentric study needed for this purpose.

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Epilepsy in Guinea: The experience of a free consultation

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Purpose to characterize people with epilepsy (PWE) presenting to a free neurology consultation and antiepileptic drug (AED) service in the Republic of Guinea.

Methods

Guinea is a low-income country in West Africa that recently experienced an Ebola Virus Disease epidemic. Community-dwelling PWE were seen at a public referral hospital in Conakry, the capital city. During two visits in 2017, an African-U.S. team performed structured interviews and electroencephalograms and provided AEDs.

Results

Of 257 participants (143 children, 122 female), 25% had untreated epilepsy and 75% met our criteria for poorly controlled epilepsy. 59% had >100 lifetime seizures and 58% reported a history consistent with status epilepticus. 38 school-aged children were not in school and 26 adults were unemployed. 115 were not currently taking an AED, including 50 participants who had previously taken an AED and stopped. Commonly cited reasons for AED discontinuation were perceived side effects, unaffordability, and unavailability of AEDs. Traditional medicine use was more frequent among children versus adults (92/143 vs. 60/114, $p = .048$). 57 participants had head injuries, 29 had burns, and 18 had fractures. In a multivariable regression analysis, >100 lifetime seizure count was strongly associated with seizure-related injury ($p < .001$). Burns were more likely to occur among females ($p = .02$).

Conclusion

There is an urgent need to improve the standard of care for PWE in Guinea. Several missed opportunities were identified, including low use of AEDs and high use of traditional medicines, particularly in children. Targeted programs should be developed to prevent unintentional injury and improve seizure control.

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