II G13

Non-metabolic seizures associated with acute gastroenteritis

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Purpose: To compare the risk of febrile seizures (FS) and afebrile seizures (AFS) provoked by gastroenteritis due to bacteria or rotavirus. Methods: We reviewed the records of all patients below age 16 years, who were admitted in 1999 for acute gastroenteritis with stool cultures and/or rotavirus studies. Enteric pathogens were identified using standard stool culture media. Rotavirus was detected using latex agglutination (RotalexR) test kit.Results: Two hundred patients were identified. The oldest age at which seizures occurred in association with gastroenteritis was 3.0 years. Hence the rest of the analysis was limited to the 151 patients aged less than 5 years. There were 11 patients with FS, 1 had rotavirus, 8 had enteric pathogen, and 2 were negative for both tests. There were 7 patients with AFS, 3 had rotavirus, and 4 were negative for both tests. Out of 102 patients without seizures, rotavirus was detected in 18, stool culture was positive in 6, and 81 were negative for both tests. Using Fisher's exact test, there was no difference in risk of FS or AFS between patients positive and negative for rotavirus. Gastroenteritis with stool culture positive for enteric pathogen had a highly significant increased risk of FS ($p<0.000001$) but no increase risk of AFS ($p=0.8$).Conclusions: Rotavirus gastroenteritis does not increase the risk of seizures compared to non-rotavirus gastroenteritis. Bacterial gastroenteritis increases the risk of FS but not of AFS.

II G14

Interictal autonomic function and heart rate variability in patients with refractory epilepsy

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Purpose: Sudden unexpected deaths in epilepsy (SUDEP) are common among patients with epilepsy, especially in those with refractory epilepsy. The exact mechanism is still unclear. This study was to explore interictal autonomic nervous function in patients with refractory epilepsy by studying heart rate variability (HRV) and standardized cardiovascular reflex tests (CRT). Methods: 58 patients (mean 31.6, range from 19 to 57 years) with intractable epilepsy were recruited from our epilepsy center, 47 healthy volunteers (mean 30.7, range 20-53 years) as controls. All subjects had no evidence of ischemic heart disease or diabete. CRT and HRV were used to evaluated autonomic control of the cardiovascular regulatory system. CRT assessment include heart rate and Blood responses to certain stimuli. All patients and controls underwent an ambulatory 24 h EKG. Heart-rate variability was analyzed in time and frequency domains. According to the results of CRT, the epilepsy patients were divided into two groups-$ANFT^+$ group (patients with positive autonomic nervous function tests) and $ANFT^+$ group (patients with negative autonomic nervous function tests). Results: The overall frequency of abnormal autonomic nervous function in 58 patients was 43.1%, which correlated with duration of epilepsy. Compared with the control group, the time domain and nonlinear dynamics indices were markedly and significantly reduced in both $ANFT^+$ and $ANFT^+$ group, particularly in $ANFT^+$ group. Conclusion: There is interictal cardiovascular autonomic nervous dysfunction in patients with refractory epilepsy, which may be implicated in sudden unexplained death in epilepsy. HRV could be as a reliable and sensitive method to detect it.