between 1 April 2014 and 31 October 2016. Three Japanese diagnosed with possible NSD patients participated. On DNA analyses of the *MEFV* gene, five hot spot regions (exons 1, 2, 3, 5, and 10) were analysed by polymerase chain reaction.

Results: The age of patients ranged from 46 to 62 years (2 males, and 1 female). They showed acute or subacute symptoms of central nervous system and their HLA typing was positive for B54 and CW1. Magnetic resonance imaging (MRI) revealed brainstem, thalamus, basal ganglia, and cerebral lesions. Intravenous methylprednisolone improved their symptoms and brain lesions of MRI. All three patients had *MEFV* gene mutations, two of them in exon 2 and 1 in exon 1.

Conclusion: This is the first report of *MEFV gene* mutations in patients with central nervous inflammation diagnosed with NSD. These findings may support the hypothesis that *MEFV* gene mutations produce proinflammatory conditions and promote the development of variety of autoimmune-inflammatory diseases, including NSD. We believe it is important to investigate *MEFV* gene mutations in suspected NSD patients to clarify the pathological links to autoinflammatory diseases.

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SHIFT 4 - EPILEPSY

An unusual cause of status epilepticus in end stage kidney disease: Star fruit intoxication

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Background: Status epilepticus (SE) is a medical emergency requiring aggressive treatment. Eliciting the etiologic cause of SE is a diagnostic challenge. Patients with End-Stage Renal Failure (ESRF) is predisposed to seizures. Star fruit (SF) (*Averrhoa carambola*) contains a neurotoxin called caramboxin which cause seizures.

Objective: We describe a case of SE due to SF intoxication in an ESRF patient which was refractory to anti-epileptic drugs and aggressive haemodialysis treatment.

Patients and Methods/Material and Methods: The patient is a 76 years old lady whom was recently started on haemodialysis treatment. She presented with hiccups, lethargy and episodes of blank stares one day after ingesting two SF. She rapidly deteriorated and developed generalized tonic-clonic seizures which progressed to SE. She required mechanical ventilation and multiple anti-epileptics and propofol infusion. She was supported with haemodialysis initially and then was escalated to charcoal heamoperfusion treatment. However, she did not have any neurological recovery. Electroencephalography (EEG) showed an encephalopathic picture. Magnetic resonance imaging (MRI) revealed bilateral gyriform hyperintense signal changes and multiple microhemorrhages changes. The patient eventually succumbed to nosocomial infection.

Results: An active enquiry for the ingestion of SF should be made in ESRF patients presenting with seizure.

Conclusion: Early recognition is important as treatment with haemodialysis is potentially beneficial in cases with a positive history of SF ingestion. Seizures development in SF intoxication is a predictor of poor outcome. Even a small dose of 2 whole fruits is enough to cause neurotoxicity and SE. Therefore, patients with chronic kidney disease and ESRF should avoid ingesting star fruit.

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1499

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SHIFT 4 - EPILEPSY

Separation between spikes and oscillation by stationary wavelet transform implemented on an embedded architecture

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Background: Electrophysiological signals (Electroencephalography : EEG, Magnetoencephalography : MEG and intracerebral EEG) have a major contribution in the diagnosis of epilepsy. Following this diagnosis, an operation can be proposed to the patient, which aims to surgically remove the zone responsible for the seizures. It is therefore crucial to clearly define this area. Within this framework, two types of markers can be used; transient activities (epileptic spikes) and oscillations. However, these activities are difficult to separate because there is a frequency overlap between them.

Objective: Several strategies have already been proposed for separating these activities in an offline approach. However, it would be very interesting to have embedded systems, which could be used on real-time patient monitoring systems, either for early detection of seizures or for neurofeedback techniques. These filtering techniques can be expensive in computing time, which limits the current capabilities of embedded systems. The aim of our work is to propose a signal processing chain to properly separate the spikes and oscillations.

Patients and Methods/Material and Methods: This chain uses the stationary wavelet transform (SWT) as a time-frequency filtering technique, followed by a thresholding step. We implemented this procedure on an embedded system, using an adaptive architecture based on dynamically partial reconfiguration.

Results: We proved a better characterization of the networks involved in the oscillatory activity while strongly reducing the computation time.

Conclusion: The embedded system are very useful in reducing the computation time for the definition of the neural networks involved in epileptic discharges.

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SHIFT 4 - EPILEPSY

Epilepsy field workers and telephone telemedicine: High patient satisfaction for a novel epilepsy service

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