

Methods

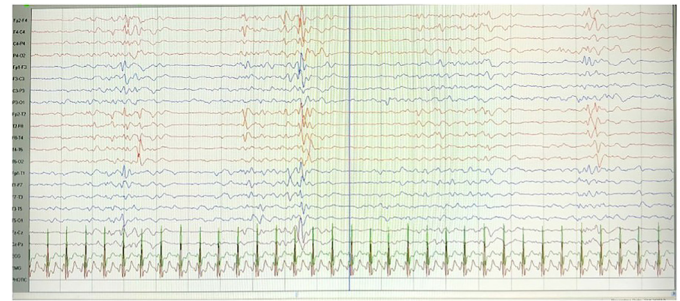
We used the data of the Global Burden of Disease (GBD) Study to estimate the incidence and DALYs of neurological disease in Iran in different age groups between 1990 and 2017. Age groups were defined into 5 groups including < 5 years, 5-14 years, 15-49 years, 50-69 years, and ≥ 70 years.

Results

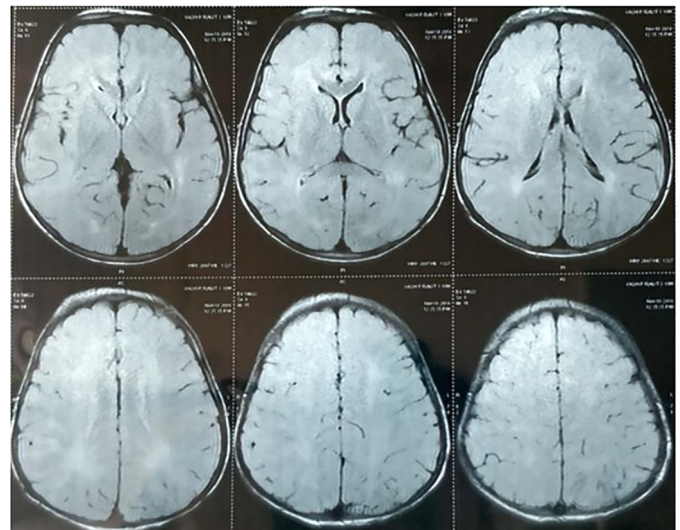
The incidence number of neurological diseases from 1990 to 2017 increased from 7.5 million to more than 12 million and the incidence rate grew as much as 1400 per 100000 populations in Iran. Totally, headache, epilepsy, and Alzheimer's disease were the most common neurological diseases according to incidence and had the most values of DALY in Iran. The highest incidence and DALY of neurological disease was observed in the age group of 15-49 years.

Conclusions

This study showed that the incidence and burden of neurological diseases had a dramatic increasing trend 27 years ago in Iran. Consequently, it is necessary to investigate the causes of the growing trend in future studies.



EEG SHOWING SLOW SHARP WAVE GENERALISED QUASIPERIODIC DISCHARGES



FLAIR MRI BRAIN SHOWING MULTIFOCAL WHITE MATTER CHANGES

119935

SSPE (Subacute sclerosing panencephalitis) - the great masquerader

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Background and Aims

SSPE is chronic progressive encephalitis affecting children and young adults which usually presents with cognitive decline and behavioural changes followed by periodic myoclonic jerks, seizures, vision loss and ataxia. High degree of suspicion is required as the presentation can be variable and can have many differentials. We aim to study various presentations of SSPE

Methods

Retrospective study was done to analyse various presentations in patients diagnosed with SSPE as per modified Dykens criteria from a tertiary care centre over a period of 2 years (1st January 2018-31st December 2020).

Results

6 cases of SSPE were identified. Case1 - 22 months old presented with subacute history of ataxia, multifocal myoclonus and developmental regression. Gradually myoclonus worsened to involve trunk and developed drop attacks. Case 2 - 17 years boy presented with single episode of seizure. Case 3- 25 years female with 5 months gestation presented with sub acute vision loss followed by progressive cognitive decline, behavioural changes, Parkinsonism, Dystonia and stimulus sensitive myoclonus. Case4- 28 years female presented with rapidly progressive cognitive decline and behavioural changes. Case 5- 32 years male presented with history of myoclonic jerks and dropping of objects. Gradually developed progressive behavioural changes and cognitive decline and became vegetative. Case6 - 9 year old child presented with faciobrachial seizures (myoclonic jerks) and scholastic backwardness.

Conclusions

SSPE can manifest with varied presenting complaints. Also, Results of EEG, MRI and CSF examination can change during the

disease course. Therefore, high degree of suspicion is required for early diagnosis of this challenging entity.

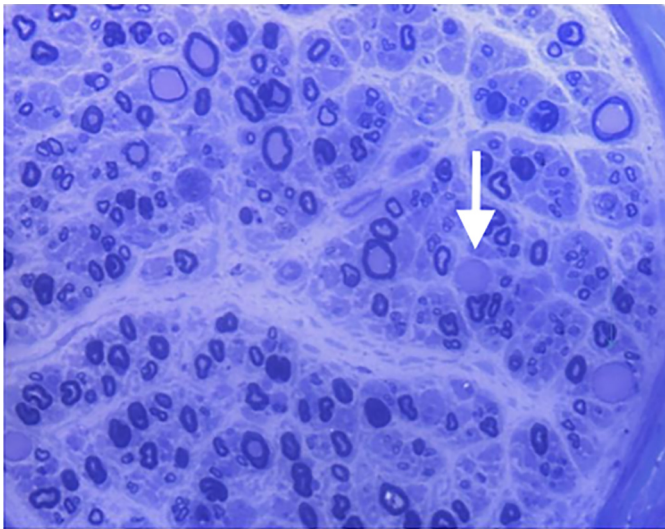
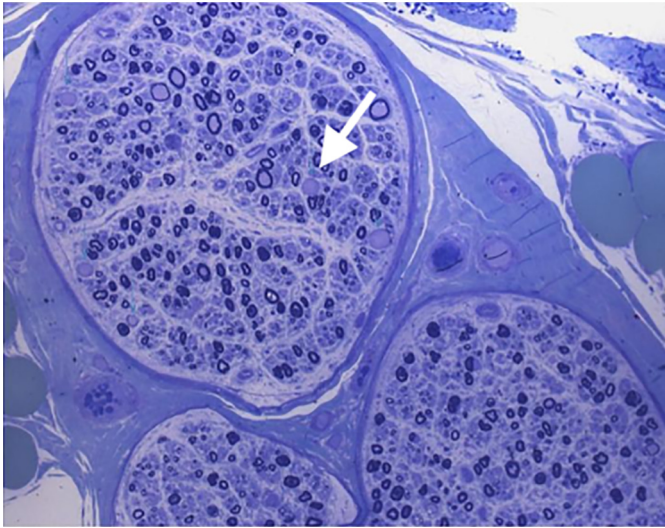
119936

Huffer's neuropathy: A case of acute-onset tetraparesis mimicking Guillain-Barré syndrome

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Background and aims

N-hexane is a well-known neurotoxic agent causing chronic peripheral neuropathy with predominant motor involvement.



Originally described as a result of occupational exposure in various industrial settings, only few reports exist on polyneuropathy due to recreational inhalation of glues and solvents.

Methods

We herein report an unusual case of a 40-year-old woman presenting to the emergency department with acute-onset tetraparesis due to inhalation of chemical solvents containing n-hexane. The clinical picture, a mild albumin-cytologic dissociation and the demyelinating features on nerve conduction study initially mimicked the presentation of Guillain-Barré syndrome (GBS), but the patient failed to respond to intravenous immunoglobulin treatment and plasma exchange. Diagnosis of hexane-induced neuropathy was then confirmed by means of sural nerve biopsy, showing axonal enlargement with secondary retraction and thinning of the myelin sheath (Figs. 1 and 2).

Results

We highlight the challenges faced in the differential diagnosis of acute-onset polyneuropathy as well as the electrodiagnostic and neuropathologic features of hexane neuropathy.

Conclusions

N-hexane polyneuropathy should be considered a possible differential diagnosis of GBS in patients with poor response to appropriate treatment and a history of substance abuse.

119937

Quality control in biobank samples: The impact of pre-freezing storage time and temperature on gene expression of blood collected in EDTA tubes

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Background and aims

Blood gene expression profiling is taking hold in research, diagnosis and monitoring of human diseases. Blood is vulnerable to pre-analytical variables that may alter gene expression ex vivo. Although RNA stabilization systems have been shown to reduce such influence, traditional EDTA tubes are still widely used since they are less expensive and enable to study specific leukocyte populations. Nevertheless, studies on the impact of short bench times on gene expression are lacking.

Methods

Nine EDTA tubes were collected from 10 healthy donors. One tube from each donor was immediately processed for mononuclear cell isolation, while the others were kept at either 4°C or room temperature for 2, 4, 6 and 24 hours. RNA yield and quality and the expression level of 4 housekeeping (B2M, CASC3, GAPDH, HPRT1) and 8 target genes (CD14, CD19, CD20, IL10, MxA, TNF, TNFAIP3, NR4A2) were evaluated.

Results

RNA yield, quality and integrity did not vary significantly with time and temperature. B2M was the most stable housekeeping gene, while the others were increasingly influenced by storing time, especially at 4°C. Even when normalized to B2M, the expression level of some target genes, particularly TNFAIP3 and NR4A2, was highly affected by delays in blood processing at either temperature, already from 2 hours.

Conclusions

Pre-analytical processing has a great impact on transcript expression from blood collected in EDTA tubes, especially on genes related to inflammation. Storage at low temperature does not prevent gene expression alteration. Standardized procedure of blood collection and manipulation are needed to obtain reliable results.