Neuromyelitis Optica spectrum disorder in a Sample of Children: Experience of Children Welfare Teaching Hospital, Baghdad

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Abstract

- Neuromyelitis optica spectrum disorder (NMOSD) is a rare autoimmune disease with a chronic inflammatory demyelinating characteristic that affects the central nervous system (CNS) primarily affecting the optic nerves, spinal cord and periependymal regions of the cerebral hemispheres and brainstem, and may or may not be associated with seropositivity of anti-aquaporin-4 antibody (anti-AQP4-Ab). (1)
- No data is available about that disease in Iraq.

Objective

To characterize the clinical and radiological features of neuromyelitis optica disease in children attending Children Welfare Teaching Hospital, Baghdad, Iraq.

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Patients & methods

- A cross-sectional descriptive study has been carried out in the period from August 2019 to September 2020, in pediatric neurology ward in Children Welfare Teaching Hospital, Baghdad, Iraq.
- All cases whose diagnoses were made based on clinical, radiological and / or serological manifestations that fulfil the latest diagnostic NMOSD criteria, were included.(2)
- The total number of patients who's been diagnosed with demyelinating diseases, was 42, of whom thirteen had the diagnosis of Neuromyelitis Optica (5 males and 8 females), aged 3-16 years and thus were eligible to be included in the current study.
- For the retrospectively gathered cases, the 20 medical registration of the ward was assessed

Results

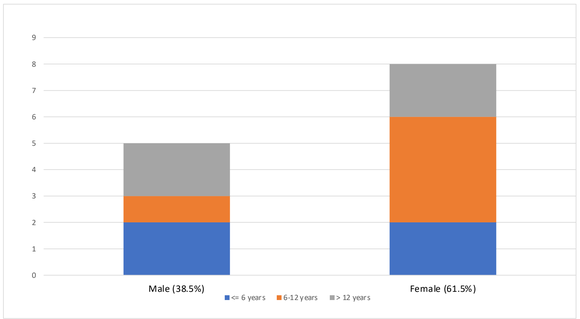

Figure 1: Age distribution by the gender of NMO patients

Results

Table 2: Age, gender and clinical features of the studied group, distributed by the AQP status

Variables		AQP4 +ve (n=7) N. (%)	AQP4 -ve (n=6) N. (%)	P value*
Age (years)	< 6	0 (0)	4 (66.6)	
	6-12	4 (57.1)	1 (16.7)	
	> 12	3 (42.9)	1 (16.7)	
Gender	Male	2 (28.6)	3 (50)	
	Female	5 (71.4)	3 (50)	
Clinical presentation				
Vision loss		3 (42.9)	1 (16.7)	0.308
Weakness of limbs		7 (100)	6 (100)	0.542
Aphasia		1 (14.3)	2 (33.3)	0.416
Encephalopathy		2 (28.6)	2 (33.3)	0.853
Seizure		0 (0)	3 (50)	0.033
Vomiting		5 (71.4)	0 (0)	0.008
Headache		1 (14.3)	1 (16.7)	0.906
Sphincter disturbance		5 (71.4)	6 (100)	0.155

Table3: Brain and spinal MRI, distributed by patients' AQP4 status

variables		AQP4 +ve (n=7) N. (%)	AQP4 -ve (n=6) N. (%)	P value*
Brain MRI (Abnormal in 10 patients)	deep white matter	5 (71.4)	5 (83.3)	0.308
	Periventricular	0 (0)	1 (16.7)	0.261
	Brainstem	1 (14.3)	3 (50)	0.164
	Periaqueductal	4 (57.1)	1 (16.7)	0.135
	Cerebellar	1 (14.3)	2 (33.3)	0.416
	Thalamic/basal ganglia	1 (14.3)	0 (0)	0.261
Spine MRI (LETM) (Abnormal in 13 patients)		7 (100)	6 (100)	0.542
Optic MRI (done in 4 patients)		1 (14.3)	0 (0)	0.629

Conclusions & recommendations

- There was a sharp rise in the frequency rate of NMO during 2019 which may reflect the increasing identification of variable NMO spectrum disorders.
- The demographic characteristics of the present cohort were comparative to that reported in the literature.
- Transverse myelitis phenotype was the most common and consistent one.
- Vomiting was more common in AQP +ve patients.
- Brain deep white matter and spinal LETM were the most common neuro-radiological manifestations.
- It is recommended to Assess serum AQP antibody level (cell-based assays) in any patient with optic neuritis or transverse myelitis; to send patients with negative AQP antibody for anti MOG antibody; and to conduct a larger, epidemiological multi-center studies for better assessment of epidemiological, diagnostic, therapeutic and prognostic issues of pediatric NMO.

References

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