RISK FACTORS AND OUTCOME OF POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME IN PEDIATRIC CANCER PATIENTS

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Abstract

A retrospective study included pediatric cancer patients who were developed PRES during the course of their treatment at the Children's Cancer Hospital Egypt (CCHE-57357) from January 2013 to June 2017. The clinical and radiological data of the studied patients were collected and reviewed

Among the 50 patients with PRES, 62% were less than 10 years of age; with female: male ratio 1.17:1. Leukemia and lymphoma weee the commonest diagnosis (64%). Forty patients (80%) received chemotherapy or immunosuppression during last 14 days. Hypertension was presented in 86% of patients at the time of PRES. Regarding the MRI findings most of the patients had either occipital affection. Other affected areas like frontal involvement was seen in 16 patients (32%), temporal lobe in 22%, cerebellum in 12%, basal ganglia in 8% and thalamus in 6%. Unilateral PRES was present in 10 patients and atypical findings in 9 patients. Advanced PRES was presented in 8 patients.80 % had complete clinical resolution and 60% complete radiological resolution at 2 weeks evaluation.

Background

Background: Posterior reversible encephalopathy syndrome (PRES) is a clinico-radiological diagnosis characterized by a spectrum of symptoms, including altered mental status, headache, seizures and visual impairment. We aimed to study the risk factors, clinical and radiological patterns of PRES in pediatric cancer patients and their outcomes

Objective

We aimed to study the risk factors, clinical and radiological patterns of posterior reversible encephalopathy syndrome (PRES) in pediatric cancer patients

Figure 1. Different clinical pictures at development of PRES.

Figure 2. Distribution of MRI findings in patients presenting with PRES.

Materials & Methods

All MRI findings were revised by the specialized neuroradiologist for defining different kinds of PRES. The medical records were reviewed to find the underlying medical conditions of the patients.

Typical PRES was considered with bilateral involvement of occipital, parietal, frontal, and temporal lobes. **Atypical PRES** includes the distinct involvement of the basal ganglia, thalamus, corpus callosum, brainstem or the presence of contrast enhancement, hemorrhage or restricted diffusion.

Table 1.Clinical outcome of PRES after 2 weeks and 3 months

Radiological outcome	Complete Resolution		Partial Resolution		Stationary		Progressive		N/A	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
Within 1 Month (n=50)	30	60%	8	16%	1	2%	5	10%	6	12%
After 3 Months for not complete resolution (20)	2	4%	1	2%	3	6%	1	2%	13	26%

Table 2.Clinical outcome of PRES after 2 weeks and 3 months

Clinical outcome	Complete resolution		Partial resolution		Stationary		Progressive		Died	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
After 2 weeks (n=50)	40	80 %	2	4%	4	8%	4	8%	0	0%
After 3 Months for not complete resolution (n=10)	0	0%	2	4%	3	6%	0	0%	5	10%

Conclusion

Although clinical and radiologic reversibility is expected, a small number of patients may develop persistent neurological sequelae and even death may occur.Advanced and atypical sites are of worse prognosis

Figure 3: MRI flair images showing examples of typical and atypical PRES

References

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