

# OUTCOME OF REFRACTORY STATUS EPILEPTICUS IN CHILDREN

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## Introduction

- Status Epilepticus (SE) is a common neurological emergency associated with significant morbidity and mortality, particularly refractory and super refractory status epilepticus.<sup>1</sup>
- Refractory status epilepticus (RSE) - Seizure activity lasts for 60 minutes or more and do not respond to benzodiazepine (BZD) group and at least one antiepileptic drug.<sup>2</sup>
- The incidence of SE was estimated as 5-20/100,000 children per year with approximately 1/3<sup>rd</sup> patients developing RSE.<sup>3,4</sup>

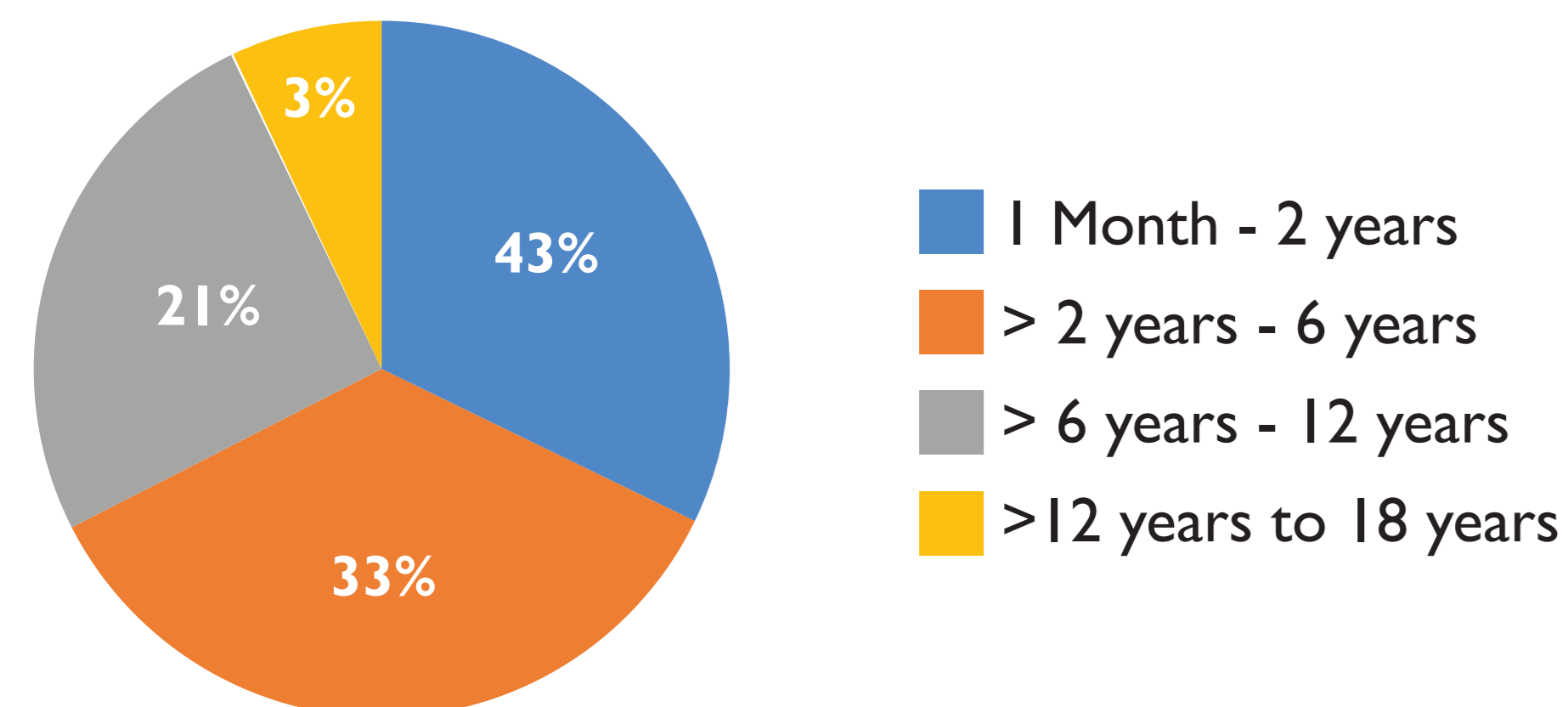
## Objective

- Determine the outcome of Refractory Epilepticus in children at discharge.
- Assess the outcome predictive factors.

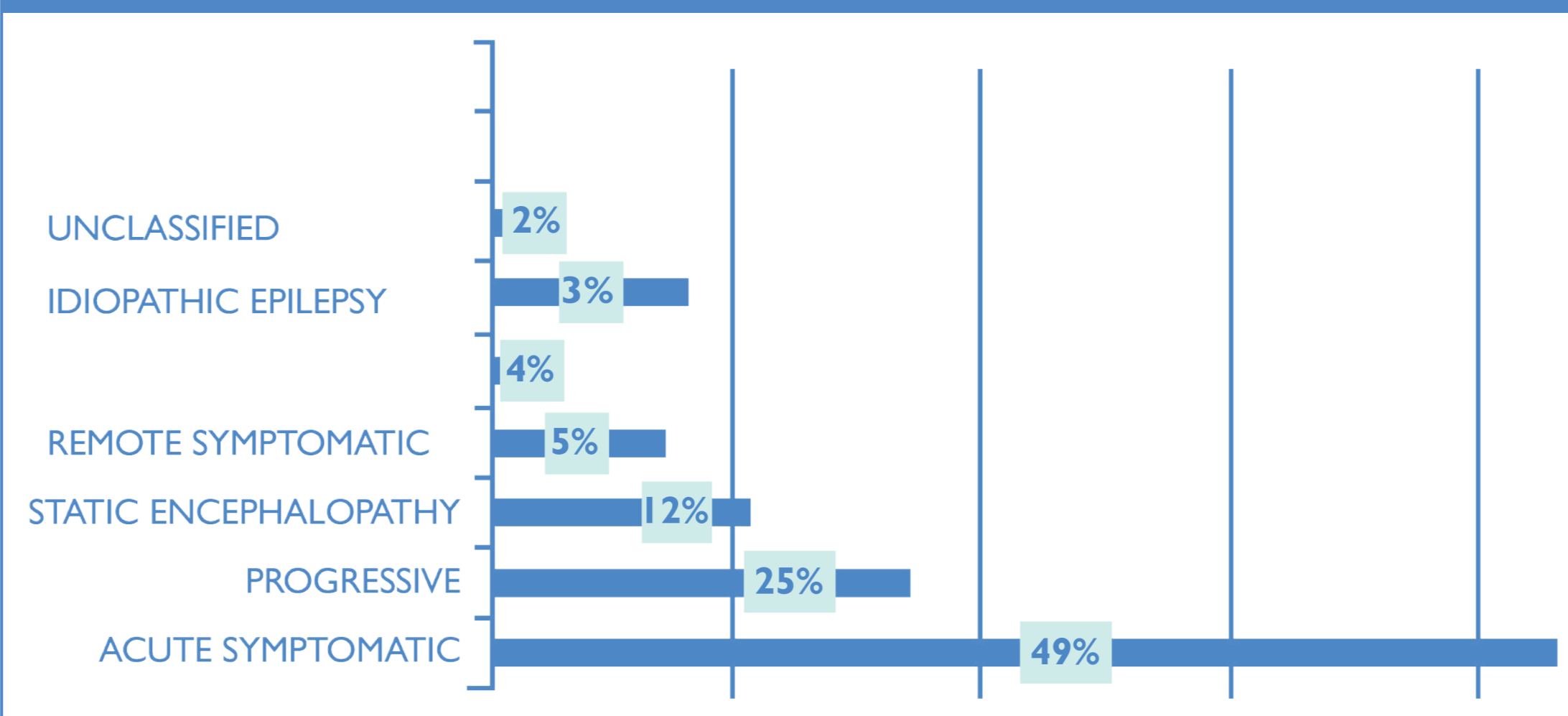
## Methodology

- Descriptive; prospective, cross-sectional study.
- Pediatric Neurology HDU, The Children's Hospital & ICH, Lahore.
- Children from 1 month to 18 years of age with refractory convulsive status epilepticus, on midazolam infusion.
- From August 2019 to March 2020; 75 patients.
- Outcome was defined by using modified Rankin score (0-6) and taken as either return to baseline (0-1 score), neurological disability (2-5 score) or mortality (6 score). Neurological disability was further divided into mild (2 score), moderate (3 score) and severe disability (4-5 score).
- Outcome-predictive factors studied were etiology, time between the onset of seizure and first benzodiazepine injection and duration of status epilepticus.
- The outcome and the effect of outcome predictive factors were determined and statistically analyzed. Chi square test was applied and p-value calculated.

### Age Groups

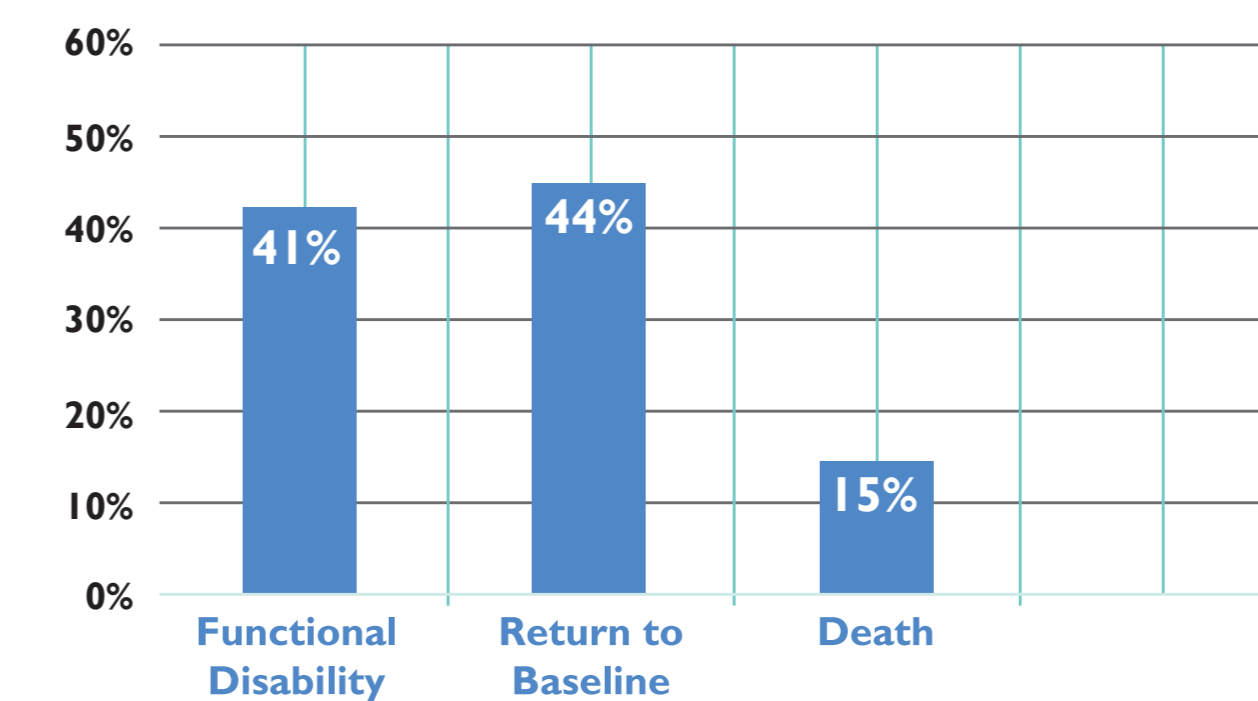


### Etiology



## Results

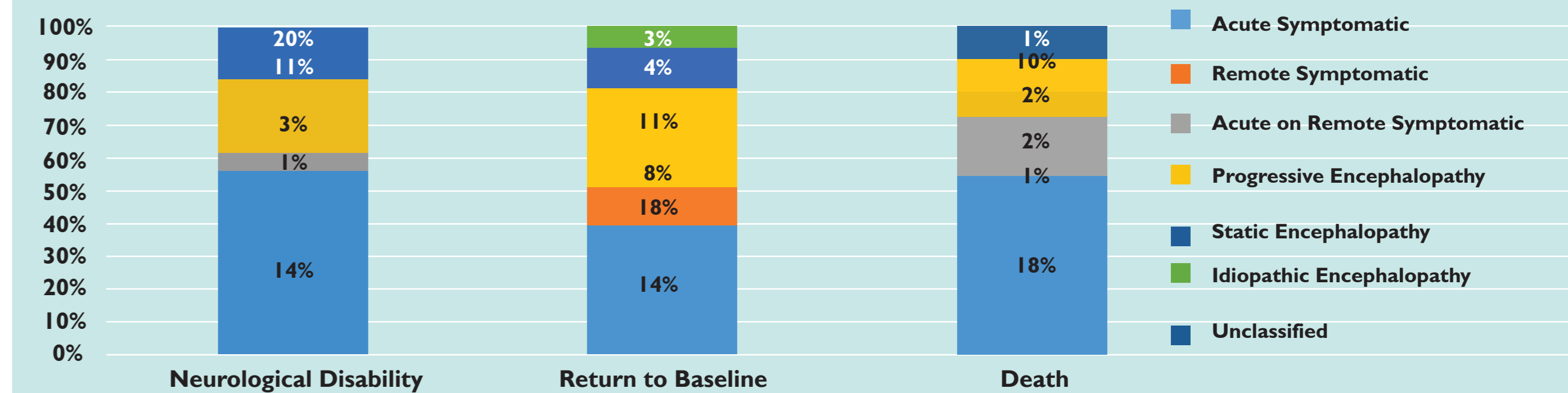
- Total 75 children with RSE were included out of which 61.4% (n=46) were males and 38.6% (n=29) females with a male to female ratio 1.5:1. The mean age of 4.43 ± 3.47 years.
- 33 (44%) patients returned to baseline, 31 (41%) developed neurological disability at discharge, and 11 (15%) expired during hospital stay. Neurological disability was mild in 3(9%), moderate in 12 (39%) and severe in 16 (52%) cases.
- The etiological factors were divided in different groups as shown in the bar chart.
- Mean time between seizures onset and first benzodiazepine injection was 44 ± 36 minutes. Duration of RSE was < 24 hours in 17 (22.7%), 24-48 hours in 15 (20%), 48-72 hours in 14 (18.6%), 72-96 hours in 12 (16%) and > 96 hours in 17 (22.7%).



OUTCOME* DURATION OF STATUS EPILEPTICUS CROSSTABULATION							
		DURATION OF STATUS EPILEPTICUS					
		< 24 hours	24-48 hours	24-72 hours	72-96 hours	> 96 hours	Total
OUTCOME	FUNCTIONAL DISABILITY	4	5	8	6	8	31
	RETURN TO BASELINE	13	8	5	4	3	33
	DEATH	2	1	1	1	6	11
		P-Value = 0.041					

### Outcome-Etiology

P-Value = 0.021



## Conclusion

Acute etiology was associated with higher mortality; however, return to baseline was also fair in the survivors. This poses implications for emergency management that could significantly improve the treatment outcomes.

## References

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3. Gurcharan K, Grinspan MZ, et al. The burden of pediatric status epilepticus. *Seizure*. 2019; 68:3-8.
4. Hacker S, Wjacks EF, et al. Refractory status epilepticus: new insights in presentation, treatment, and outcome. *Neural Res*. 2013; 35(2):163-8.