DRUG UTILIZATION STUDY OF ANTI-EPILEPTICS DRUGS IN PEDIATRIC POPULATION

Dr. Sengottuvel Viswanathan

Delhi University

Delhi

INTRODUCTION



- Epilepsy- recurrent seizures due to chronic underlying process
- Incidence is 5 to 7 per 10,000 children .
- 5 among 1,000 children have epilepsy .
- Various etiologies.

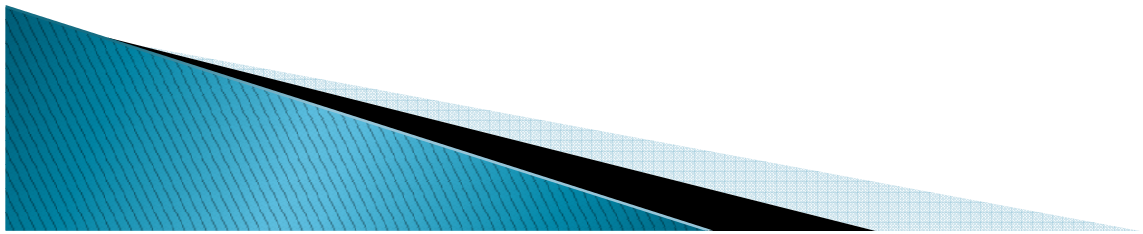
ILEA Classification 2010.

- **Generalized seizures**

  Tonic clonic, absence, clonic, tonic, atonic,myoclonic.

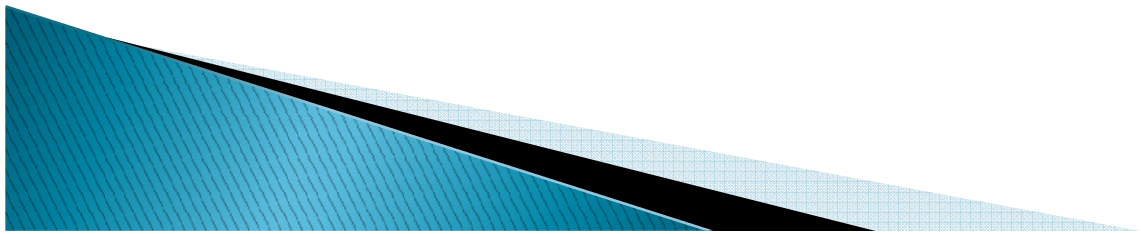
- **Focal seizures**.
- **Unknown** : epileptic spasms.

- Clinical diagnosis is supported by neuro-imaging and electro physiological studies.
- Management: Anti epileptic drugs (AEDs)



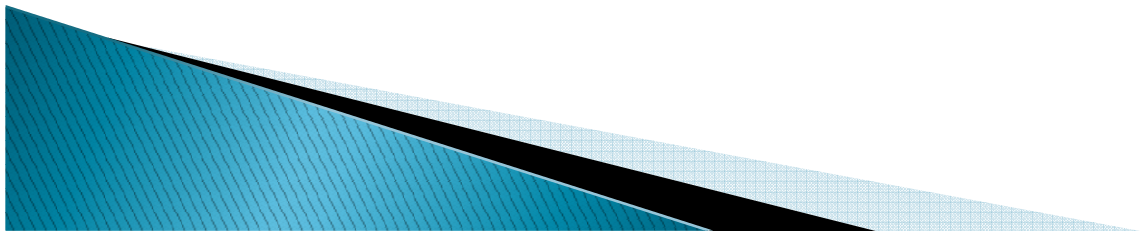
Drug utilization study

- **Definition**
- WHO in 1977 defined drug utilization as marketing, distribution, prescription and use of drugs in a society with special emphasis on the resulting medical, social and economic consequences.
- **Types**
- Cross sectional
- Longitudinal
- Continuous longitudinal.



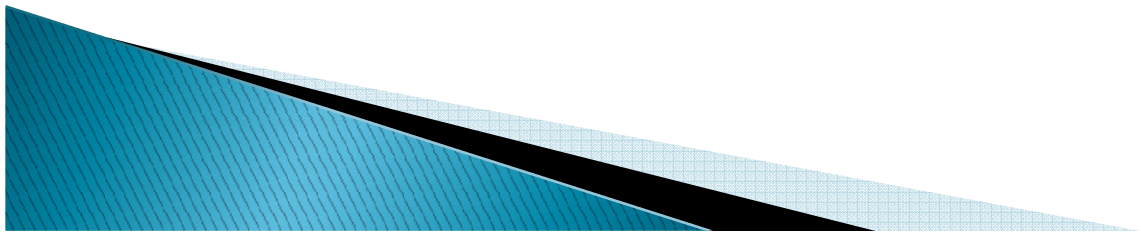
Aim and Objectives

- To study the drug utilization pattern of anti-epileptic drugs in pediatric population.
- Objectives:
- Prescribing pattern
- Seizure control and adverse effects
- Cost of therapy and financial burden.



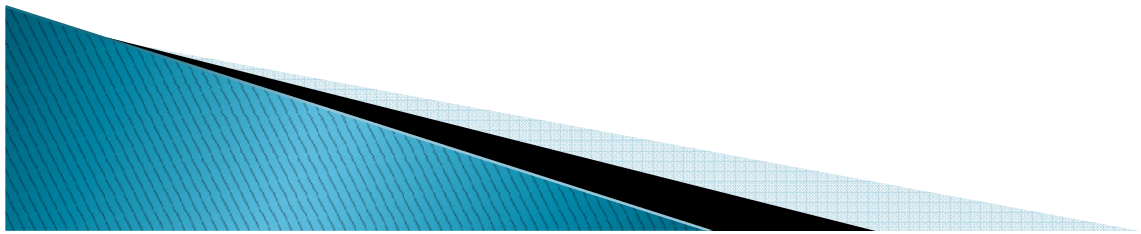
Study settings

- Hospital based descriptive study
- 200 pediatric patients on AEDs
- Data collected in suitably designed from
- **Inclusion criteria**: 3 months to 12 years diagnosed with epilepsy and receiving oral AEDs.
- **Exclusion criteria**: patients unwilling to participate.



Study Method

- Age, sex , weight , duration of treatment, diagnosis were noted.
- Prescribing pattern of AEDs was assessed according to WHO indicators.
- Patients followed up at 3 months for seizure control and adverse drug reactions.
- ADRs were documented and reported.



Results

- **Demographic profile (n=200)**
- Boys – 59% (n=118)
- Girls – 41% (n= 82)

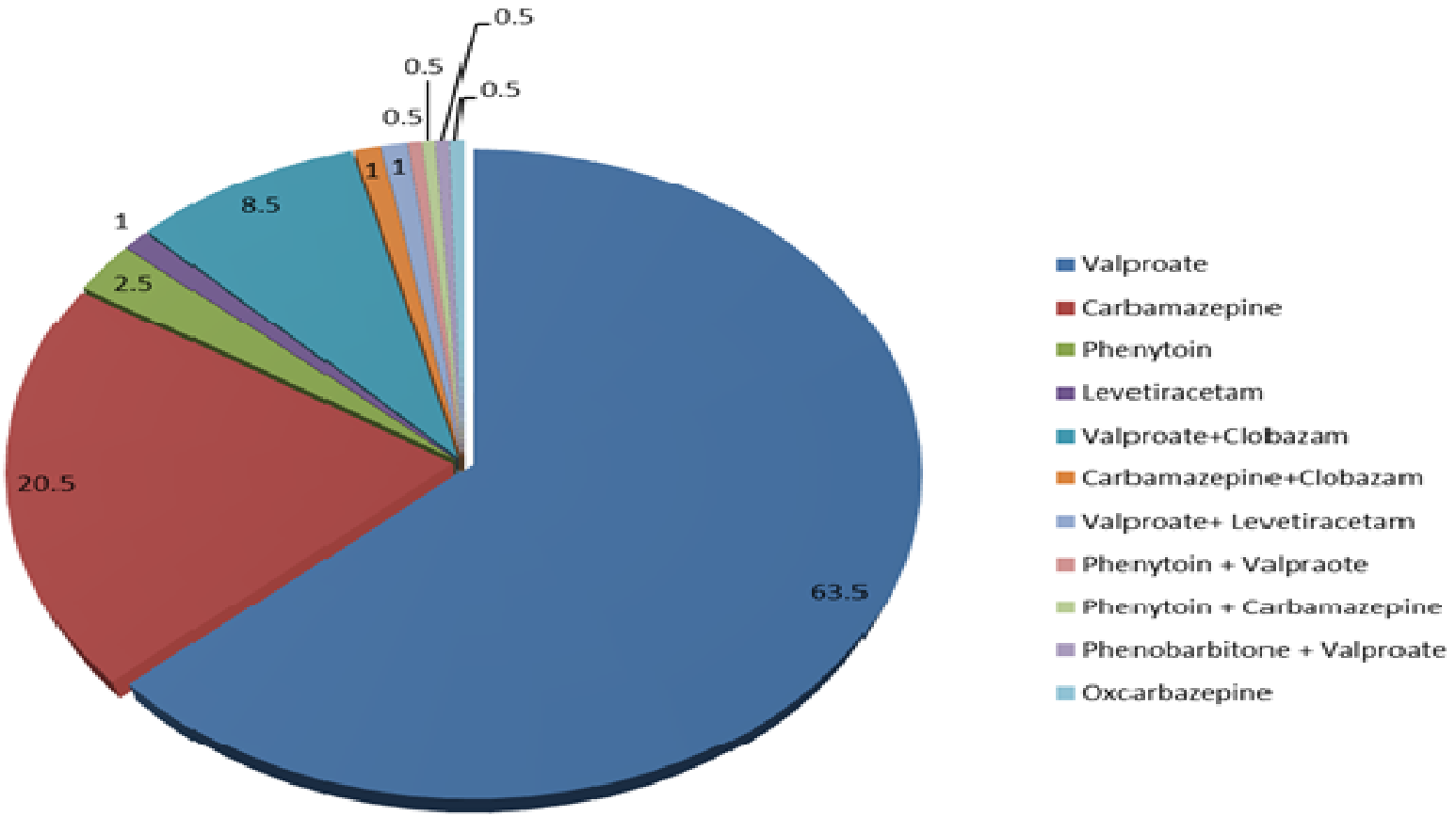
- **Mean age** = 7.14 yrs.

Results

Type of seizure

- GTCS 61.5% (N=123)
- Complex partial 30% (N= 60)
- Simple partial 5% (N=10)
- Myoclonic 3% (N=6)
- Absence 0.5% (N=1)

Utilization pattern of AEDs in pediatric population



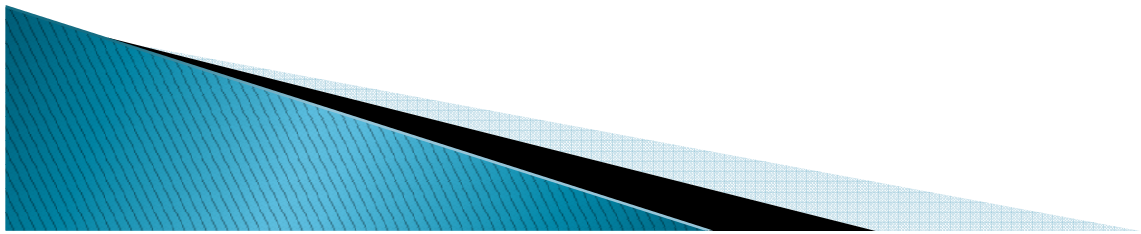
Monotherapy Vs Combination therapy

Total (N=200)

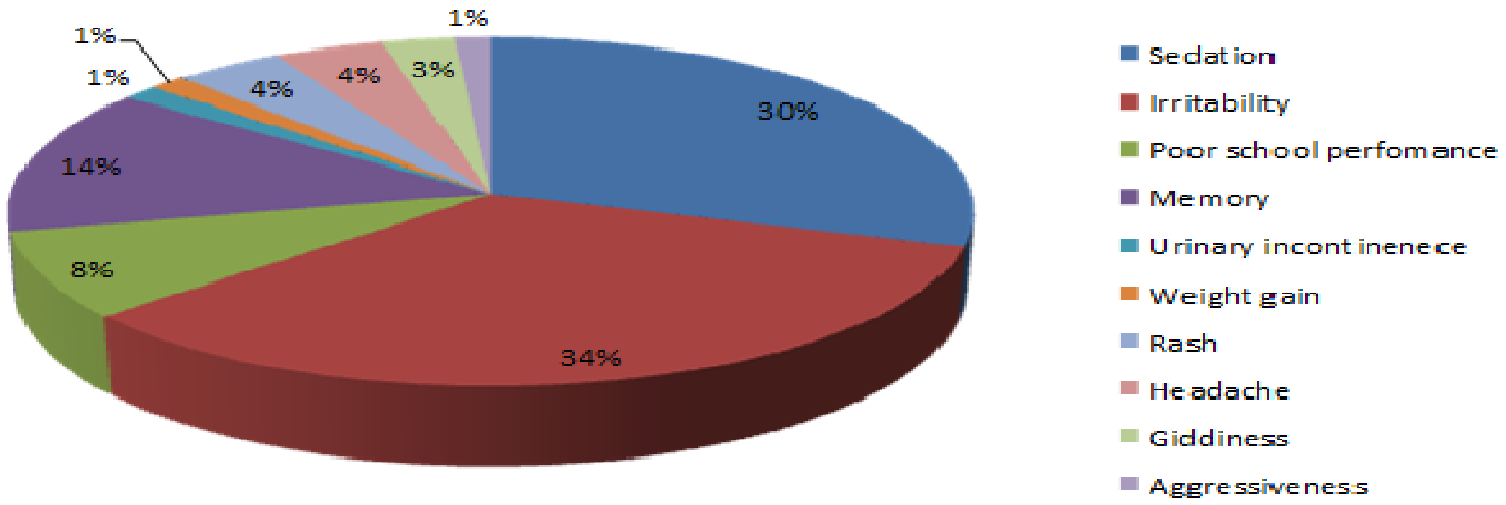
Diagnosis	Monotherapy(n=175)	Combination(n=25)
GTCS	52.5%(105)	9%(n=18)
Complex Partial	28.5%(57)	1.5%(3)
Simple Partial	4%(8)	1%(2)
Myoclonic	2%(4)	1%(2)
Absence	0.5%(1)	0

Seizure control Monotherapy Vs Combination therapy

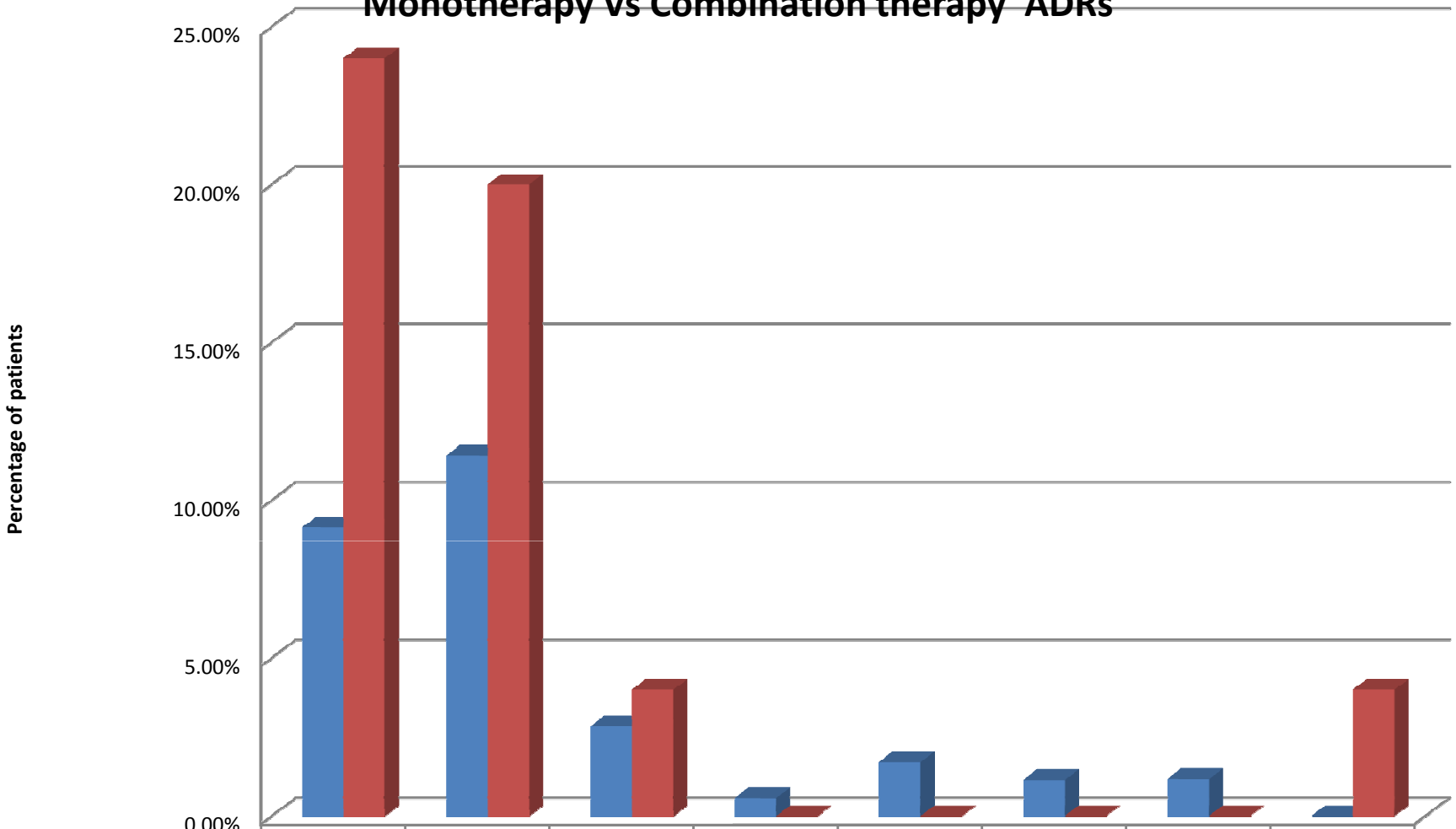
Type of seizure	Seizure control with Monotherapy (n=175)		Seizure control with Combination therapy (n=25)	
	Good	Poor	Good	Poor
GTCS M=105 C =18	89.5%(n=94)	3.8%(n=4)	50%(n=9)	16.7%(n=3)
Complex partial M =57 C =3	98.24%(n=56)		66.7%(2)	
Simple partial M=8 C=2	100%(n=8)		100%(n=2)	
Myoclonic M =4 C =2	25%(1)	50%(n=2)		100%(n=2)



Distribution of ADRs in Pediatric population on AED Therapy



Monotherapy Vs Combination therapy ADRs



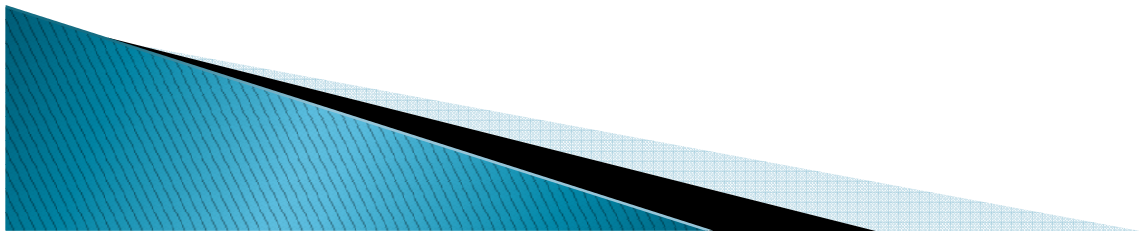
	Sedation	Irritability	Poor school performance	Weight gain	Rash	Giddiness	Headache	Aggressive behaviour
Monotherapy	9.14%	11.42%	2.85%	0.57%	1.71%	1.14%	1.17%	0%
Combination therapy	24%	20%	4%	0%	0%	0%	0%	4%

Discussion

- Utilization pattern:
- Valpraote – 63.5% monotherapy
  – 8.5% combination.
- Carbamazepine – 20.5% monotherapy
  – 1% combination.
- Phenytoin – 2.5% monotherapy
  – 1 combination.

Conclusion

- Utilization pattern of AEDs documented.
- Monotherapy more common than combination .
- Seizure control better with monotherapy than combination.
- Monotherapy is better tolerated with little ADRs .



Supervisors

- Dr. SK Bhattacharya
- Dr. Anju Aggarwal
- Dr. Neeta Wardhan
- Dr. Rachna Gupta.
- Department of Pharmacology and Pediatrics
- University College of Medical Sciences
- Delhi University.

