on neurology books, visit our website www.jaypeebrothers.com, for detailed information on neurology boo

Get Full Access
with added features at
emedicine360.com

Epilepsy in Special Population

Clinical Pearls



Rajiv Anand
Deepak Arjundas

JAYPEE

Contents

CHAPTER 1	**Seizures in Neonates and Children**	**1**
CHAPTER 2	**Adolescence and Epilepsy**	**4**
CHAPTER 3	**Epilepsy in Women**	**8**
CHAPTER 4	**Epilepsy in the Elderly**	**13**
CHAPTER 5	**Management of Seizures in the HIV Patient**	**18**
CHAPTER 6	**Management of Status Epilepticus**	**21**
CHAPTER 7	**Management of Post-traumatic Epilepsy**	**25**
Index		**27**

CHAPTER 4

Epilepsy in the Elderly

INTRODUCTION

The elderly population is increasing globally. The prevalence of epilepsy in elderly in India is about 2.79% in individuals above 60 years.[1] But it has been postulated that the true incidence of epilepsy in elderly may be 2–3 times higher than these reported rates, because of difficulties in identifying seizures and diagnosing epilepsy in elderly.[2]

The elderly individuals are exposed to an increasing number of risk factors for seizures and epilepsy owing to their comorbidities and the presence of disorders that increase the risk of seizures.[2,3] Focal seizures are more common than generalized seizures in the elderly. Temporal lobe epilepsy is the most commonly diagnosed epileptic disorder. Absence seizures and status epilepticus are infrequent, but at times there may be a history of childhood-onset absence that has resolved, only to recur in later life with or without generalized tonic-clonic seizures.[2]

INVESTIGATIONS[4]

Approach	Features and tests
Careful history taking	• Obtain a moment-by-moment description of the event from a witness • Search for predisposing factors • Ask questions about sleep disorders, medications taken including over-the counter agents as they may lower the seizure threshold
Physical examination	• Thorough neurologic assessment
Initial laboratory evaluation	• Complete blood count • Electrolytes • Calcium

Continued...

JAYPEE BROTHERS

Continued...

Approach	Features and tests
	• Magnesium • Phosphorus • Blood urea nitrogen • Creatinine • Glucose levels • An erythrocyte sedimentation rate • Liver function tests • Serologic tests • A chest radiograph • An electrocardiogram • When appropriate, serum drug levels and a toxicology screen should be obtained
Detailed cardiovascular evaluation	• Echocardiogram, Holter monitoring, and carotid Doppler ultrasonography • Acutely, computed tomographic scanning of the brain may exclude hemorrhage. When feasible, magnetic resonance imaging is the neurodiagnostic study of choice because of its sensitivity to infarcts and focal gliosis
Lumbar puncture	It is not routinely required unless the patient is febrile or has recently had a fever, meningitis is suspected, or the patient is immunocompromised
Electroencephalography	It can help to establish the diagnosis of epilepsy and classify the seizure type

CLINICAL PEARLS

- A detailed history must be obtained not only from the patient but also from an eyewitness, if available.
- The first step is to determine if the events are epileptic seizures or nonepileptic in nature.
- With recurrent falls and loss of consciousness, syncope must be considered as an alternative diagnosis.
- Visual auras may be epileptic or migrainous.
- Brain MRI is the most helpful neuroimaging study, although cranial CT scans may be performed in acute or emergency settings.

JAYPEE BROTHERS

TREATMENT

Initial treatment must be monotherapy. The choice of a specific antiepileptic drug (AED) depends on the type of seizures and epilepsy, potential side effects (tolerability), physiological changes associated with aging, drug interactions, presence of comorbidities, need for rapid titration and cost.

The elderly population has altered physiology, low doses of AEDs are recommended in elderly patients with seizures or epilepsy. Besides, there are several drugs which may lower the seizure threshold and the patient must be asked about the use of such drugs (**Tables 1** and **2**).

CLINICAL PEARLS

- Start low, go slow.
- Modest maintenance dose.
- Assess renal, hepatic function, and plasma protein.
- Prefer monotherapy.
- Assess blood levels when indicated.
- Prefer nonsedating AED.
- Special attention to bone health and AED.

Table 1 Drugs which can lower the seizure threshold in elderly and cause seizures.[5]

Moderate risk	Intermediate risk	Low risk
Chlorpromazine	Other antipsychotic agents	• Risperidone • Quetiapine
Clozapine	Cyclic antidepressants	SSRIs, MAOI
Olanzapine	Bupropion	Local anesthetics
Clomipramine	Methylphenidate	Antivirals
Maprotiline	Tramadol	• Other antibiotics • Quinolones
Pethidine	• Beta-lactam antibiotics Isoniazid Metronidazole • Theophylline, aminophylline	Beta-blockers

(MAOI: monoamine oxidase inhibitors; SSRIs: selective serotonin reuptake inhibitors)

JAYPEE BROTHERS

Table 2 Advantages and disadvantages of using antiepileptic drugs (AEDs) in the elderly.[5]

AEDs	Advantages	Disadvantages
Carbamazepine	Good efficacy	• Narrow therapeutic index • Hepatic enzyme inducer, rash • Hyponatremia
Valproate	Broad spectrum, IV, rapid titration	Causes weight gain, encephalopathy, tremor, urinary retention, arrhythmia
Gabapentin	Rapid titration, few AEs, no drug interaction	Limited efficacy, multiple-daily dosing, renal clearance
Pregabalin	No drug interaction	Somnolence, weight gain
Lamotrigine	Broad spectrum, no cognitive AEs, psychotropic effect	Titration is complex, rash
Levetiracetam	Good efficacy, broad spectrum, rapid titration, IV, no interaction, no cognitive AEs	Psychiatric dysfunction, dose adjustment required based on the GFR
Oxcarbazepine	Good efficacy, better PK/AE profile than carbamazepine	Rash, hyponatremia
Topiramate	Good efficacy, broad spectrum, low PK interaction	Impaired cognitive, glaucoma, weight loss, renal stone
Zonisamide	Good efficacy, broad spectrum, less risk of PK interaction, once-daily dosing	Affects cognition, cognitive AEs, weight loss, renal stone
Lacosamide	High efficacy, rapid titration, IV, no PK interaction, low cognitive SE	Dizziness, arrhythmia
Perampanel	Broad spectrum, long half-life	Somnolence, dizziness

(AEs: adverse effects; IV: intravenous; GFR: glomerular filtration rate; PK: pharmacokinetic; SE: status epilepticus)

Epilepsy surgery is less often performed in the elderly since they respond well to AEDs.[6-10]

JAYPEE BROTHERS

CLINICAL PEARLS

- Carefully consider the comorbid disorders in the elderly patient so that the AED can be chosen appropriately.
- Choose drugs (such as levetiracetam, lamotrigine) with a good tolerability profile so that adherence to treatment can be ensured.
- Avoid polytherapy.
- Consider therapeutic drug monitoring when indicated.

REFERENCES

1. Beghi E, Giussani G. Aging and the epidemiology of epilepsy. Neuroepidemiology. 2018;51:216-23.
2. Acharya JN, Acharya VJ. Epilepsy in the elderly: special considerations and challenges. Ann Indian Acad Neurol. 2014;17(Suppl 1):S18-26.
3. Kaur U, Chauhan I, Gambhir IS, Chakrabarti SS. Antiepileptic drug therapy in the elderly: a clinical pharmacological review. Acta Neurol Belg. 2019;119(2):163-73.
4. Vélez L. Seizure disorders in the elderly. Am Fam Physician. 2003;67:325-32.
5. Sang Kun Lee. Epilepsy in the elderly: treatment and consideration of comorbid diseases. J Epilepsy Res. 2019;9(1):27-35.
6. McLachlan RS, Chovaz CJ, Blume WT, Girvin JP. Temporal lobectomy for intractable epilepsy in patients over age 45 years. Neurology. 1992;42(3 Pt 1):662-5.
7. Sirven JI, Malamut BL, O'Connor M, Sperling MR. Temporal lobectomy in older versus younger adults. Neurology. 2000;54:2166-70.
8. Boling W, Andermann F, Reutens D, Dubeau F, Caporicci L, Olivier A. Surgery for temporal lobe epilepsy in older patients. J Neurosurg. 2001;95:242-8.
9. Grivas A, Schramm J, Kral T, von Lehe M, Helmstaedter C, Elger C, et al. Surgical treatment for refractory temporal lobe epilepsy in the elderly: seizure outcome and neuropsychological sequels compared with a younger cohort. Epilepsia. 2006;47:1364-72.
10. Tellez-Zenteno JF, Sadanand V, Riesberry M, Robinson CA, Ogieglo L, Masiowski P, et al. Epilepsy surgery in the elderly: An unusual case of a 75 year old man with recurrent status epilepticus. Epileptic Disord. 2009;11:144-9.

JAYPEE BROTHERS

for detailed information on neurology books, visit our website www.jaypeebrothers.com, for detailed inform

Epilepsy in Special Population

Clinical Pearls

Key Features

- The handbook collates key evidence for managing epilepsy in daily practice, in various practical scenarios.
- The distinguishing aspect of the book is presence of "Clinical Pearls" across the book to aid practice of busy practitioners.
- The book provides tips and tricks to manage epilepsy patients across various scenarios, i.e., in children, elderly, adolescents, in women, in patients with comorbid HIV or post-trauma, or managing status epilepticus.
- The book is put together by key neurologists across the country and lead by two eminent neurologist, i.e., Dr Rajiv Anand and Dr Deepak Arjundas.

Printed in India

Available at all medical bookstores or buy online at www.jaypeebrothers.com

JAYPEE BROTHERS
Medical Publishers (P) Ltd.
EMCA House, 23/23-B, Ansari Road,
Daryaganj, New Delhi - 110 002, INDIA
www.jaypeebrothers.com

Join us on facebook.com/JaypeeMedicalPublishers

Shelving Recommendation
NEUROLOGY

ISBN 978-93-90595-00-6