특수 환자군에서의 간질

Epilepsy: Special Populations

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Abstract

In this chapter, epilepsy or seizure in special populations or conditions, pregnant women or those who are planning to be pregnant elderly individuals, patients with a systemic disease, and mentally retarded subjects are discussed. Pregnancy in pregnant woman is associated with increased obstetric risks and increased adverse neonatal outcomes. Effective control of maternal seizures with the least risk to the fetus is the goal. Careful planning and management of any pregnancy are essential to increase likelihood of a healthy outcome both for the mother and the baby. Some guidelines for woman with epilepsy will be introduced. The elderly are the most rapidly growing part of our population, and the prevalence of epilepsy is also rapidly increasing in this group. Age - related physiologic changes in hepatic and renal function, volume of distribution, and exaggerated sensitivity to side effects should de considered. The elderly with a systemic disease such as cardiovascular disorder and renal and hepatic failure require a more complex approach. Epilepsy is a common occurrence in individuals with mental retardation. The degree of mental retardation, associated behavioral disorders, and the type of epilepsy or epileptic syndrome can affect the treatment modality and prognosis. The treatments should be tailored to the needs of individual patients. Comprehensive management requires the involvement of an interdisciplinary team to enhance functioning and achieve optimal quality of care.

Keywords : Epilepsy; Pregnancy; Elderly; Systemic disease; Mental retardation , , 가 .

, 가

, 가 가

. 가

가 , , ,

| | | , , 가 | , 1.5~3 | (1, 2). | |
|--------------|--------------------|----------------|------------------|-----------------------|-------------|
| | (1~5). | 2) 가 | ? | | |
| | , | | | 가 | |
| , , | (pharmacokinetics) | , | | | |
| 1/3 | 가 가 , | 가 | 가 | | |
| (folic acid) | (free radicals) | | 가 | | |
| | 가 | | | , | |
| (1). | | | | (2). | |
| 가 | , | Valproate | (ne | eural tube defect) | |
| | , | (spina | a bifida) | 2% , | |
| | | 100~200 | | | |
| | | Carbamazep | ine | 50 ~ 100 | |
| l. | | (1%) | | . Ph | e- |
| | | nytoin ph | nenobarbital | | |
| | | 2%, | | 1.8% 4~ | . 5 |
| * | 가? | | | , | |
| * 가 | ? | to | piramate | limb agenesis | 기 |
| * | ? | | | fe | <u>.</u> - |
| * | ? | bamate, gaba | pentin, lamotri | gine, tiagabine, oxca | r- |
| * | ? | bazepine, zoni | samide, levetira | acetam | |
| * | • | | | | |
| | | | | (1, 2, 6). | |
|) | ? | | | | |
| | ? | 3) | | ? | |
| | , | | ? | | |
| | 2~3 . 가 | | | , | |
| | , , | | | 2~3 | |
| (1, 2, 6). | | | | | |
| QOQ | 2/21 | | | | |

316

| 가 가 , | | 0.4 mg | | |
|-------------------------|-----------------|---------------------|--------------------|---------|
| | 가 | (1, 2). | | |
| 3 | | alpha - | fetoprotein | 가 |
| | | | | (7). |
| (1, 2). | | | | |
| 가 가 | , | 5) | | |
| | | 2~4% | • | 가 |
| | | 가 | 가 | . Mono- |
| . 1~3 | | genic | フ | ŀ |
| | | | 가 | |
| | • | 가 | (1, 2). | |
| | (juvenile | | | |
| myoclonic epilepsy) , | | 2. | | |
| | (1, 2, | | | |
| 4). | | | | 가 |
| 1 | 6 | , | 가 | 가 |
| (2). | | | | |
| | | | | |
| 4) | ? | | | (free |
| 가 | | form) 가 | 가 | |
| | 가 | • | | |
| | | | , | |
| Valproate | 1,000 mg | | | |
| | . 가 la- | | (2). | |
| motrigine | . Carbamazepine | alph | na - fetoprotein , | |
| oxcarbazepine | 가 | | | 0.4 mg |
| (1). | | 4~5 mg | 12 | · |
| (neural tube defea | ct) 가 | (cytochrome P450) | | (pheny- |
| valproate carbamazepine | | toin, carbamazepine | , barbiturates) | |
| 4~5 mg | | | | 10~ |
| | | 20 mg K | (1, 7) | |

```
2) 가
3.
                                           가
                                                  3) 가
2
                                                                 가
         1~2%
                                                  4)
                                                                                   carbamaze-
                                                            valproate
                                                    pine
                                                              , valproate + carbamazepine +
               Iorazepam
                            diazepam
                                                    phenobarbital
                                                  6)
 . Meperdine
                (1, 2).
                                                  7)
                                                  8) Valproate
                                                                                       가
                                                                            3~4
4.
                                                  9) Valproate
                                                              carbamazepine
                                                                                         16
                                                                 alpha - fetoprotein ,
                                           가
                                                                                 ( 18~19 )
가
                                                                           ( 22~24 )
           . Benzodiazepines phenobarbital
                                                                       alpha - fetoprotein ace-
                                                    tylcholinesterase
                                                  10) Valproate 가
                                                                         lamotrigine
                                        (1).
                                                  60
                                                                                   10
                                                                                           82
                                                                , 65
                                                                               가
                                                가
                                                             (8).
                             (2).
                                                                  가
                                                                   가
                       (7).
                                                                                   가
                       가
  1)
```

1.

| IA: | 가 . | | | | | | | |
|---------------|--------|-------|----------------|--------|------------|---|---|---|
| Zonisamide | | NA | , | | | | 가 | |
| · a.p. caro | 3070 | , | | 30~40% | 가 | | | |
| Valproate | 87~95% | 11~17 | | | | | • | : |
| Topiramate | 9~17% | NA | , | | | | 가 | |
| Primidone | | | | | | | | |
| | | | | (10% |) | | | |
| | | | | 3- | -4 mg/kg : | 가 | | |
| Phenytoin | 80~93% | | | | | | | : |
| Phenobarbital | 50% | NA | 1 | | | | | |
| Oxcarbazepine | | NA | | | | | | |
| Levetiracetam | <10% | 2~15 | | | | | 가 | |
| | | | conjugation() | | • | | | |
| Lamotrigine | 55% | 31 | - glucuronide | 가 | | 가 | | |
| | | | | 30~6 | 60% | | | |
| Gabapentin | <10% | NA | | | | | | |
| Felbamate | <10% | NA | | | | | | |
| | | | | | 40% | | | |
| Carbamazepine | 70~80% | NA | | | | | | |

가 phenytoin, valproate, tiagabine, benzodiazepines(carbamazepine, phenobarbital, lamotrigine)

• ,

가, alpha 1 - acid glycoprotein(AAG)

. 가 (1, 8). 가 가 carba-

mazepine

가 가 (1, 8, 9).

가 , 가

가 가

1.

,

2.

| Carbamazepine | | 1 | | \$\$\$ |
|------------------------------|-----------------------|----------------|---------|--------------------------|
| Felbamate | • | | 가 | \$\$\$\$ |
| Gabapentin | | | | \$\$\$\$\$ |
| Lamotrigine | | | | \$\$\$\$\$ |
| Levetiracetam | | | | \$\$\$\$\$ |
| Oxcarbazepine | | | | \$\$\$\$\$ |
| Phenytoin | | | | \$\$ |
| Phenobarbital | | | | \$ |
| Valproate | | | | \$\$\$ |
| Tiagabine | | | | \$\$\$\$\$ |
| Topiramate Zonisamide | | ı | | . \$\$\$\$\$ \$\$\$\$ |
| ZOFIISATTIQE | | | | \$\$\$\$ |
| (4) | | | (4.0) | |
| (1). | | | (1, 8). | |
| | 가 | | | (1, 2) |
| | | | | |
| | , | • | | |
| , | 가, , | | | |
| , , | . Carba- | 1) Phenytoin | | |
| | | | | |
| mazepine, phenytoin, barbitu | irates(pnenobarbital, | 가 | 1 | |
| primidone) , | | | | |
| valproate | 가 | | | (therapeutic rang |
| | 71 | | | (therapeutic rang |
| (8~11). | | 가 , | , | |
| | | | | |
| | | • | | |
| 2. | | • | 가 | 가 |
| , , | , | | | |
| | | D 71 | | |
| | | D 가 | | |
| | | 가 | | |
| | | | | |
| , | | | | • |
| | | | | |
| (phenobarbital, phenyto | oin, benzodiazepines) | 2) Carbamazepi | ne | |
| | | , | | |
| propylene glyc | 01 | | | • |
| | , phenytoin | | | |
| | • • | | O | rhozonine 71 |
| | | | . Oxca | arbazepine 가 |

.

| 3) Val | proic acid | | | | | | 가 | |
|------------|------------|--------------|-------------|----------|-----|--------------------------|----------------|-------|
| Pher | nytoin | | | | | (1, 8). | | |
| | 가 | 가 | 1 | | | | | |
| | gabapentin | levetiraceta | am | | 1. | | | |
| | | | , | | | 25% | | |
| | | | | | | , , | | (1, |
| | | | | lamotri- | 8). | 35%가 | 8~1 | 1 |
| gine | | | carban | nazepine | | (8), | | |
| | | | carl | bamaze- | 10% | | | |
| pine | | | | | | (1), | | |
| | | . phe | enobarbital | primi- | | (1, 1) | 2). | |
| done | | | | | | | | |
| 가 (1, 8 |). | | | | | (dialysis dysequilibrium | ı syndrome). | |
| 3. | | | | | | | | |
| | | | | | | | (1, 8). | |
| | | | , | | | | 가 | |
| 가 | | | | | 가 | . Phenytoin, valproa | te, phenobarbi | tal |
| | | | - | | | • | | |
| | | | | | | phenytoin | 5~10 | ug/ml |
| | | (1, 8). | | | | フ | | 1 |

| | phenytoin | | | | | | |
|---------------------------|---------------------|----------|--------------|-----------|-------------|--------------|----------|
| 가 | . Valproate | | nho | enytoin | valproate | | • |
| 기 가 | . vaiproate | | prie | iny toni | | امرون | |
| | | | | | | Iproate | |
| phenytoin | | | | | . Phe | enobarbital | ben- |
| | • | | zodiazepines | | | | |
| . Phenobarbital | 가 | | . Ca | ırbamaze | | | |
| | | . Pheno- | | 기 | ł (1). | | |
| barbital 40~60%가 | | | | | | | |
| | | 가 . | 3. | | | | |
| Primidone | | | | | | | |
| . Carbamazepine | 가 | | | | | , | |
| . Eth | osuximide | | , | | | , | |
| | 가 가 | . Gaba- | | 4 | | (8). | |
| pentin, lamotrigine, viga | abatrin, topiramate |) | | | | | |
| | | | | carb | amazepine | | |
| | (1, 12). | | | | | | 가 |
| | , | | | carban | nazepine p | henytoin | |
| 2. | | | | | | | |
| | | | | | phenytoin | benzodiaz | renines |
| 3 | | • | 가 | | priority | DONIZOGIGZ | .0011100 |
| 3 | | | 71 | | | | |
| 가가 . | | | O.F. | | | | |
| 7171 . | 71 | | 25 | mg | | | |
| | 가 | | | | • | | |
| , | , | | | | , | | |
| . Reye | | | (1). | | | | |
| Wilson | | | | | | | |
| | | (1). | • | | | | |
| 가 | | | carbama | zepine, p | henobarbita | l, primidone | e, phe- |
| | . Phe | enytoin | nytoin | | INR | | |
| valproate | , | | | | | | |
| | 가 . | | phenobarbita | al phe | nytoin a | uinidine, di | aoxin |

| 7+ 4. 7+ (16~18). 7- (13, 14). 7+ 7+ 24~48 (16, 17, 20). 3 1. cyclophosphamide, azathioprine ethosuximide?+ car- phamazepine valproate 7+ 2. | lidocaine, mexillitine | | 가 |
|--|--------------------------|---------------|-------|
| 7† phenytoin quinidine (ectopy) 21%, 7† 50% (1, 8). 20% (1, 8). 20% 7† 4. 7† (16~18). 7† (16~18). 7† (13, 14). 7† 7† 7† 24~48 (16, 17, 20). 3 1. cyclophosphamide, azathioprine ethosuximide7† car- 7† bamazepine valproate 7† (15). 22% | . amiodarone phenytoin 가 | | (15). |
| (ectopy) 7† 21%, 7† 50% (1, 8). 20% 7† 4. 7† (16~18). 7† (16, 17, 20). 3 1. cyclophosphamide, azathioprine ethosuximide7† car- 7† bamazepine valproate 7† (15). | verapamil carbamazepine | | |
| 7† 21%, 7† 50% (1, 8). 20% 7† 4. 7† (16~18). 7† (16, 17, 20). 3 1. cyclophosphamide, azathioprine ethosuximide?† car- 7† bamazepine valproate 7† (15). | 가 . phenytoin quinidine | | 가 |
| 21%, 7\ 50% (1,8). 20% 7\ 4. 7\ (16~18). 7\ (13,14). 7\ 7\ 24-48 (16,17,20). 3 1. cyclophosphamide, azathioprine ethosuximide7\ car- phamazepine valproate 7\ (15). | (ectopy) | | |
| (1, 8). 20% 4. 7† 4. 7† (16~18). 7† (16~18). 7† 7† 24-48 (16, 17, 20). 3 1. cyclophosphamide, azathioprine ethosuximide7† car- 7† bamazepine valproate 7† (15). 2. | | | 가 |
| (1, 8). 20% 4. 7† 4. 7† (16~18). 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, | | 21%, 가 | 50% |
| 7+ 4. 7+ (16~18). 7- (13, 14). 7+ 7+ 24~48 (16, 17, 20). 3 1. cyclophosphamide, azathioprine ethosuximide?+ car- phamazepine valproate 7+ 2. | , | | , |
| 7t (16~18). (13, 14). 7t 7t (16, 17, 20). 3 1. cyclophosphamide, azathioprine ethosuximide7t car- 7t bamazepine valproate 7t (15). | (1, 8). | | 20% |
| 7\(\)(16~18). \(\)(13,14). \(\)7\(\) \(\)7\(\) \(\)24~48\(\) \(\)(16,17,20). \(\)3 \(\)1. \(\) \(\) \(\)(2). | | | 가 |
| (16~18). (16~18). (13, 14). (13, 14). (14, 17, 20). (15). (16, 17, 20). (16, 17, 20). (16, 17, 20). (17, 20). (18, 17, 20). (19, 17, 20). (19, 18). | 4. | | |
| 7 | | 가 | |
| , , , , , , , , , , , , , , , , , , , | | (16~18). | |
| , , , , , , , , , , , , , , , , , , , | | | , |
| (13, 14). 7 | , | , | |
| (13, 14). , 7 | , | | |
| 가 24~48 (16, 17, 20). 3 1. cyclophosphamide, azathioprine ethosuximide가 car-가 bamazepine valproate 가 (15). | , | | , , |
| 7 | (13, 14). | | , |
| 3 | · | 가 | |
| 3 | | | |
| tyclophosphamide, azathioprine ethosuximide가 car- 가 bamazepine valproate 가 (15). | | (16, 17, 20). | |
| cyclophosphamide, azathioprine ethosuximide가 car- 가 bamazepine valproate 가 (15) | 3 | | |
| ethosuximide가 car- 가 bamazepine valproate 가 (15) | · | 1. | |
| bamazepine valproate 가 | | | |
| | | 가 | |
| 2. | | | |
| | (15). | | |
| | · | | |
| フト anti - DNAフト フト フト フト | | | |
| フト | 가 anti - DNA가 | 가 | 가 |

| | | | | | , | ramate, la | motrigine, | oxcarbaz | epine |)가, |
|--------|-----------|-----------|-----------|-------------|-------|-------------|-------------|-------------|---------|--------------|
| | | | | (| - 가 | | ethosux | imide(val | proate, | lamotrigine, |
| |) | | | 가 | (16). | clonazepam | า |)가, | , | |
| | | | | | | valp | oroate(| | | |
| | | | | | | lamotrigine | e, topirama | ite, felban | nate) | |
| | 가 | | | | | | | | | phenytoin, |
| | | 가 | | | | carbamaze | pine, valpr | oate | 가 | . barbi- |
| 가 | | | | | | turates(ph | enobarbita | al, primic | done) | benzodiaze- |
| | (16). | | | | | pines , | | | | , |
| 1) | | | | | | 가 | | | 가 | |
| | | | | | | | | (16). | | |
| 2) | : | 가 | | | | | | | | |
| | | | | | | | | | | , |
| 3) | 가 | | , | | | | | , | | |
| | | | | | | (flash lig | ght) | | , | |
| 4) | | | | | | | | | | |
| | | | | 1~3 | | | | | | |
| | 가 . | | | | | С | arnitine | | 4 | 15% |
| 5) | 가 | | | | | | | | | |
| 6) | | | | | | (16~18). | | ; | 가 | |
| | | | | (| | | | | | , |
| | 5) | | | | | 24 | | 가 | | |
| | | | | | | | | | | |
| | | | (| | | | | | | (21). |
| | 가 | |) | | | | | | | |
| | | | 가 | | | 3. | | | | |
| | 1 1, 2 | | | | | | | | | , |
| 7) | | | | | | | | | | 2~3 |
| | | | | | | | | | | 1.5 |
| | | | | , | phe- | | , | | | |
| nytoin | , carbama | zepine(va | alproate, | gabapentin, | topi- | | | 3 | 가 (| (22). |

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