Epilepsy in the Elderly

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Two Cohorts

- Community Dwelling
- Nursing Home Residents

Leppik 2007
Prevalence in Community Dwelling Elderly

- An estimate of the prevalence of epilepsy (active cases in a population) can be made from a study of veterans. Of a total of 1,130,155 veterans 65 years and older identified from the national database of 1997-1999, 20,558 (1.8%) were identified as having epilepsy by having an ICD-9-CM code representative of this condition.*


Leppik 2007
Incidence in Community Dwelling

• In the USA, approximately 181,000 persons developed epilepsy in 1995, and approximately 68,000 of these were over age 65.+

• In Finland, new cases of epilepsy in elderly exceed those in children.*


Leppik 2007
EPILEPSY: PREVALENCE, CUMULATIVE INCIDENCE AND INCIDENCE RATES

PREVALENCE 1980
INCIDENCE RATE
CUMULATIVE INCIDENCE DERIVED FROM 1975-1984 RATES
Rochester, Minnesota
Issues

• Co-morbidities and multiple drugs.
• Need to think ahead (as in women of childbearing potential)
• Example – Na\(^+\) Hyponatermia case
  – Neurologist started trileptal
  – Rural physician started Na\(^+\) depleting antihypertensive
  – Serum sodium <100, comatose, lawsuit
• Need 10 most likely to be dangerous list and focus education.

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Nursing Home Population

• Approximately 4.5%, of elderly are residents of a US nursing home (NH), and the lifetime probability of a person entering a NH in the US before death is estimated to be 43%.


Leppik 2007
Point Prevalence of Epilepsy in NHs

- Point prevalence studies state that at any given time 7-10% of the nursing home population has a diagnosis of epilepsy/seizure and more than 80% treated with an antiepileptic drug.
- On admission, approximately 7-8% have a diagnosis of epilepsy/seizure.


Leppik 2007
Incidence of Epilepsy After Admission to a NH Study

• Download of >8,000,000 patient’s Medicare Minimum Data Sets records from 2003-2008 (admission and 3 month updates)

• Inclusion criteria:
  • 3 + years of data
  • No epilepsy/seizure ICD 9 on admission

• Final data set 3,613,926 patients

Eberly PI; Leppik co-PI; funded CDC to 2011- papers in preparation
Incidence and Co-morbidities

- Overall 1,624 / 100,000 pt yr
- More than 12 times higher than community dwelling incidence
- Selected co-morbidities:
  - 19% Stroke; 2,752 / 100,000 pt yr [no 1,360]
  - 0.5% Head injury 4,565 / 100,000 pt yr [no 1,628]
  - 65% Hypertension 1,657 / 100,000 pt yr [no 1,614]

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Leppik 2007
What to do with new onset epilepsy/sz
(patient usually recovered to baseline)

- Survey at 2011 American Medical Directors meeting
  - New onset seen per year
    - 1 = 17; 2 = 10; 3 = 7; 4 = 4; >4 = 2 (total >67)
  - Management
    - Send to hospital yes = 24; no = 14
  - Long term antiepileptic drugs
    - Phenytoin = 29; levetiracetam = 26; valproate = 18;
      carbamazepine = 10; phenobarbital = 2

Leppik 2007
Problems

• Do all persons admitted with an antiepileptic drug need to continue treatment?
• Drug interactions (average prescribed =8)
• Do persons with new onset need to be sent to the hospital if in the context of stroke or other known high risk factor?
• Pharmacists are applying knowledge obtained from younger populations
  – “Blood levels” for phenytoin are 10-20 mg/L total;
  – Because lower binding, NH ranges probably 5-10 mg/L total

Leppik 2007
Actions

• Education for NHs need to involve:
  • Pharmacists – drug interactions; appropriate doses
  • Nurses- first aid
  • Physicians- advanced rescue orders
Specific recommendations

• Funding:
  – AMDA foundation sponsored guidelines for managing new onset seizures in nursing homes.
    – Cost savings significant if hospitalizations can be decreased
  – Studies to determine if all diagnosed as epilepsy/sz need to be treated
    – Cost savings in reduced drug costs and toxicity=injury

Leppik 2007
Example of Quality of Life
My wife’s grandmother: age 76 in 1957