

Best Evidence Summaries of Topics in Mental Healthcare

BEST *in* **MH** *clinical question-answering service*

Question

In adults with dementia and epilepsy, how effective are pharmacological interventions in reducing the symptoms of epilepsy?

Clarification of question using PICO structure

Patients: adults with dementia and epilepsy

Intervention: pharmacological interventions

Comparator: any other intervention

Outcome: reducing the symptoms of epilepsy

Clinical and research implications

No relevant research evidence was identified.

What do guidelines say?

SIGN guideline 86 was found to provide the following information;

‘Anticonvulsants may be considered for the symptomatic treatment of seizures or myoclonus associated with dementia but are not recommended for other symptoms of dementia.’

The NICE guidelines for dementia do not provide any recommendation for this population.

Date question received: 02/05/2013

Date searches conducted: 13/05/2013

Date answer completed:

References

Guidelines

1. Scottish Intercollegiate Guidelines Network. Management of patients with dementia, a national clinical guideline. Guideline no. 86, February 2006. <http://www.sign.ac.uk/pdf/sign86.pdf>

Primary studies

2. Cumbo E, Ligorì L. Levetiracetam, lamotrigine, and phenobarbital in patients with epileptic seizures and Alzheimer's disease. *Epilepsy & Behavior* 17 (2010) 461–466

Results







RCTs

Author (year)	Inclusion criteria	Number of participants	Summary of results	Risk of bias
Cumbo (2010)	<p><i>Study design</i> – the study was conducted prospectively. Participants were randomised into 1 of 3 trial arms, and were blind to the results of the randomisation. The study used a case-control design.</p> <p><i>Participants</i> – Participants included in this study were required to meet diagnostic criteria for probably Alzheimer’s dementia. Additionally participants were required to have mild to moderate dementia (defined by a mini-mental state examination (MMSE) score of 10-26), between sixty and ninety years old, have an equivalent of ≥ 5 years of education, a caregiver who could ensure treatment compliance, and a diagnosis of partial epilepsy according to the International League Against Epilepsy diagnostic scheme.</p> <p><i>Intervention</i> – Participants were randomised to receive Levetiracetam (LEV), lamotrigine (LTG), or Phenobarbital (PB), and were titrated up to an effective dose. LEV initial dose of 500mg/day increased by 500mg weekly. LTG initial</p>	N=151 participants. N=68 controls without epileptic symptoms were included in this study. Of the 83 participants with epileptic symptoms N=35 were allocated to the LEV group, N=25 to LTG and N=23 PB.		


	<p>dose of 25mg per day, increased by 25mg weekly, PB initial dose of 50mg per day, increased by 50mg weekly.</p> <p><i>Comparison</i> – Using a case control design, the comparison took place with a group of 68 controls matched for age, sex and AD severity. Controls were selected from a group of patients without epilepsy but with AD.</p> <p><i>Outcomes</i> – Participants were evaluated at baseline, 6 and twelve months after titration. Seizure frequency was measured, cognitive function was evaluated using the MMSE and the Alzheimer Disease Assessment Scale—Cognitive (ADAS-Cog). Mood was also assessed using the Cornell scale for depression. Adverse events were also reported.</p>			
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Risk of Bias: SRs

RCTs

Study	RISK OF BIAS					
	Random allocation	Allocation concealment	Blinding of participants and personnel	Blinding of outcome assessment	Incomplete outcome data	Selective Reporting
Cumbo (2010)						

 Low Risk

 High Risk

 Unclear Risk

Search Details

Source	Search Strategy	Number of hits	Relevant evidence identified
<i>SRs and Guidelines</i>			
NICE	1. Dementia AND seizure	24	1
DARE	1 (dement*) IN DARE 467 2 (epilep*) IN DARE 246 3 (medicat*) IN DARE 2442 4 (pharmacol*) IN DARE 2172 5 MeSH DESCRIPTOR Epilepsies, Partial EXPLODE ALL TREES 38 6 MeSH DESCRIPTOR Epilepsy EXPLODE ALL TREES 217 7 MeSH DESCRIPTOR Epilepsy, Absence EXPLODE ALL TREES 1 8 MeSH DESCRIPTOR Epilepsy, Complex Partial EXPLODE ALL TREES 2 9 MeSH DESCRIPTOR Epilepsy, Generalized EXPLODE ALL TREES 9	2	0

	<p>10 MeSH DESCRIPTOR Epilepsy, Post-Traumatic EXPLODE ALL TREES 1</p> <p>11 MeSH DESCRIPTOR Epilepsy, Temporal Lobe EXPLODE ALL TREES 11</p> <p>12 MeSH DESCRIPTOR Epilepsy, Tonic-Clonic EXPLODE ALL TREES 2</p> <p>13 MeSH DESCRIPTOR Alzheimer Disease EXPLODE ALL TREES 219</p> <p>14 MeSH DESCRIPTOR Dementia EXPLODE ALL TREES 393</p> <p>15 MeSH DESCRIPTOR Lewy Body Disease EXPLODE ALL TREES 2</p> <p>16 #1 OR #13 OR #14 OR #15 692</p> <p>17 #2 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 383</p> <p>18 #16 AND #17 7</p> <p>19 #3 OR #4 4237</p> <p>20 #18 AND #19</p>		
Primary studies			
CENTRAL	<p>1. exp DEMENTIA/;</p> <p>2. (dementia OR alzheimer*).</p> <p>3. 1 or 2</p> <p>4. exp EPILEPSY/;</p> <p>5. (epilep* OR seizure*)</p> <p>6. 4 or 5</p> <p>3 and 6: 45</p>	45	
PsycINFO	<p>1. PsycINFO; ALZHEIMER'S DISEASE/ OR exp DEMENTIA/;</p> <p>47974 results.</p> <p>2. PsycINFO; EPILEPSY/ OR EPILEPTIC SEIZURES [+NT]/;</p> <p>17452 results.</p>	39	

	<p>3. PsycINFO; 1 AND 2; 199 results.</p> <p>4. PsycINFO; TREATMENT/; 56334 results.</p> <p>5. PsycINFO; anticonvulsants.ti,ab; 1506 results.</p> <p>6. PsycINFO; antiepileptic*.ti,ab; 3829 results.</p> <p>7. PsycINFO; anticonvulsant*.ti,ab; 3648 results.</p> <p>8. PsycINFO; exp ANTICONVULSIVE DRUGS/; 8975 results.</p> <p>9. PsycINFO; carbamazepine.ti,ab; 2823 results.</p> <p>10. PsycINFO; gabapentin.ti,ab; 963 results.</p> <p>11. PsycINFO; lamotrigine.ti,ab; 1414 results.</p> <p>12. PsycINFO; (valproate OR valproic).ti,ab; 3092 results.</p> <p>13. PsycINFO; 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12; 70333 results.</p> <p>14. PsycINFO; 3 AND 13; 39 results.</p>		
Embase	<p>15. EMBASE; DEMENTIA/ OR ALZHEIMER DISEASE/; 163356 results.</p> <p>16. EMBASE; (dementia OR alzheimer*).ti; 86313 results.</p> <p>17. EMBASE; exp SEIZURE, EPILEPSY AND CONVULSION/; 237856 results.</p> <p>18. EMBASE; (epilep* OR seizure*).ti; 96118 results.</p> <p>19. EMBASE; 15 OR 16; 168676 results.</p> <p>20. EMBASE; 17 OR 18; 240481 results.</p> <p>21. EMBASE; 19 AND 20; 5486 results.</p> <p>22. EMBASE; DRUG THERAPY/; 264543 results.</p> <p>23. EMBASE; ANTICONVULSIVE AGENT/; 55738 results.</p> <p>24. EMBASE; anticonvulsant*.ti,ab; 21664 results.</p> <p>25. EMBASE; antiepileptic*.ti,ab; 22560 results.</p> <p>26. EMBASE; carbamazepine.ti,ab; 14605 results.</p> <p>27. EMBASE; gabapentin.ti,ab; 5379 results.</p> <p>28. EMBASE; lamotrigine.ti,ab; 5373 results.</p> <p>29. EMBASE; (valproate OR valproic).ti,ab; 16522 results.</p> <p>30. EMBASE; exp ANTICONVULSIVE DRUG/; 256344 results.</p> <p>31. EMBASE; ANTICONVULSANT TREATMENT/; 5448 results.</p> <p>32. EMBASE; 22 OR 23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29 OR 30 OR 31; 513096 results.</p> <p>33. EMBASE; 21 AND 32; 1312 results.</p> <p>34. EMBASE; random*.tw; 800572 results.</p>	82	

	<p>35. EMBASE; factorial*.tw; 20676 results. 36. EMBASE; placebo*.tw; 187993 results. 37. EMBASE; (crossover* OR cross-over*).tw; 65360 results. 38. EMBASE; (doubl* adj3 blind*).tw; 136217 results. 39. EMBASE; (singl* adj3 blind*).tw; 15356 results. 40. EMBASE; assign*.tw; 220501 results. 41. EMBASE; allocat*.tw; 75019 results. 42. EMBASE; volunteer*.tw; 166928 results. 43. EMBASE; CROSSOVER PROCEDURE/; 36827 results. 44. EMBASE; DOUBLE-BLIND PROCEDURE/; 114506 results. 45. EMBASE; SINGLE-BLIND PROCEDURE/; 17352 results. 46. EMBASE; RANDOMIZED CONTROLLED TRIAL/; 341966 results. 47. EMBASE; 34 OR 35 OR 36 OR 37 OR 38 OR 39 OR 40 OR 41 OR 42 OR 43 OR 44 OR 45 OR 46; 1305086 results. 48. EMBASE; 33 AND 47; 82 results.</p>		
Medline	<p>49. MEDLINE; exp DEMENTIA/; 112306 results. 50. MEDLINE; (dementia OR alzheimer*).ti; 67096 results. 51. MEDLINE; exp EPILEPSY/; 123352 results. 52. MEDLINE; (epilep* OR seizure*).ti; 75097 results. 53. MEDLINE; 49 OR 50; 118160 results. 54. MEDLINE; 51 OR 52; 128394 results. 55. MEDLINE; 53 AND 54; 1189 results. 56. MEDLINE; DRUG THERAPY/; 33361 results. 57. MEDLINE; anticonvulsant*.ti,ab; 17528 results. 58. MEDLINE; antiepileptic*.ti,ab; 15794 results. 59. MEDLINE; carbamazepine.ti,ab; 10994 results. 60. MEDLINE; gabapentin.ti,ab; 3708 results. 61. MEDLINE; lamotrigine.ti,ab; 3581 results. 62. MEDLINE; (valproate OR valproic).ti,ab; 11987 results. 63. MEDLINE; exp ANTICONVULSANTS/; 114700 results.</p>	99	

	64. MEDLINE; 56 OR 57 OR 58 OR 59 OR 60 OR 61 OR 62 OR 63; 162932 results. 65. MEDLINE; 55 AND 64; 135 results. 66. MEDLINE; "randomized controlled trial".pt; 351777 results. 67. MEDLINE; "controlled clinical trial".pt; 86248 results. 68. MEDLINE; randomi?ed.ab; 321311 results. 69. MEDLINE; placebo.ab; 145012 results. 70. MEDLINE; "drug therapy".fs; 1617872 results. 71. MEDLINE; randomly.ab; 195705 results. 72. MEDLINE; trial.ab; 278320 results. 73. MEDLINE; groups.ab; 1260231 results. 74. MEDLINE; 66 OR 67 OR 68 OR 69 OR 70 OR 71 OR 72 OR 73; 3146311 results. 75. MEDLINE; 65 AND 74; 99 results.		
Summary	NA	NA	

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