

Dementia Medicines **AMBERO**

DONEPEZIL, GALANTAMINE, RIVASTIGMINE and MEMANTINE

Prescribing Information Sheet

To be read in conjunction with the [SPC](#) , [NICE TA 217](#) ¹ and [NICE NG97](#) ²

Dementia Medicines: General Prescribing Considerations

- The three acetylcholinesterase inhibitors (AChEI), donepezil, galantamine and rivastigmine as monotherapies are recommended as options for managing mild to moderate Alzheimer's disease under the following conditions ^{1,2} :
 - For people who are not taking an AChEI or memantine, prescribers should only start treatment with these on the advice of a clinician who has the necessary knowledge and skills and in line with local primary and secondary care protocols where they exist. This could include:²
 - secondary care medical specialists such as psychiatrists, geriatricians and neurologists
 - other healthcare professionals such as GPs, nurse consultants and advanced nurse practitioners with specialist expertise in diagnosing and treating Alzheimer's disease.
 - Memantine is recommended as an option for managing Alzheimer's disease for people with moderate Alzheimer's disease who are intolerant of or have a contraindication to AChEI (e.g. if there are cardiac conduction problems or bradycardia) or severe Alzheimer's disease.
 - Once a decision has been made to start an AChEI or memantine, NICE guidance states that the first prescription may be made in primary care. To support prompt access to treatment it is recommended that the first prescription is issued within LCFT.
 - Clinicians should consider memantine in addition to an AChEI in patients with moderate disease and offer memantine in addition to an AChEI if they have severe disease. The NICE clinical guideline states that primary care prescribers may start treatment with memantine without taking advice from a specialist clinician where an AChEI is already prescribed. Accepting that GPs may not feel confident in initiating memantine in such circumstances, LCFT psychiatrists, nurse or pharmacist prescribers or advanced nurse practitioners may be contacted for advice without the need to automatically refer patients back into secondary care services for treatment advice – **see below for contact details of Memory Assessment Service (MAS) clinics.**
 - If prescribing an AChEI (donepezil, galantamine or rivastigmine), treatment should normally be started with the drug with the lowest acquisition cost (taking into account required daily dose and the price per dose once shared care has started). However, an alternative AChEI could be prescribed if it is considered appropriate when taking into account adverse event profile, expectations about adherence, medical comorbidity, adherence, possibility of drug interactions and dosing profiles. **Generic donepezil** tablets have the lowest acquisition cost and should be considered as the 1st line AChEI.
 - Do not stop AChEI in people with Alzheimer's disease because of disease severity alone
- **Galantamine** may be better than other AChEIs for insomnia.³
- **Rivastigmine** is licensed for dementia in Parkinson's disease and may be helpful if hallucinations are a prominent presenting feature of the dementia.³
- **Memantine** may be preferred if AChEIs are contraindicated or not tolerated
- **For patients with swallowing difficulties** consider switching to orodispersible donepezil tablets in preference to using patches/ liquid formulations of other medications (if appropriate).
- **Do not offer AChEI or memantine to people with frontotemporal dementia or with cognitive impairment caused by multiple sclerosis.**
- **Only consider AChEI or memantine for people with vascular dementia if their have suspected comorbid Alzheimer's disease, Parkinson's disease dementia or dementia with Lewy bodies**

**Table 1. Alzheimer's Dementia
Dementia Medications: Summary of Dosing and Licensing Information ⁴**

Medication (Licensed Indications)	Dosing Information. See SPC for more details. Slower titrations may be used on specialist advice/to minimise side effects	Additional Information (See table 3 and 4 for Side Effects and Interactions)
Donepezil 1st Line (Mild-Moderate Alzheimer's Dementia)	Initial dose: 5mg each evening, at bedtime. Increased to: 10mg after 4 weeks	Generic Donepezil tablets have the lowest acquisition cost and should be considered as the 1 st line AChEI. Nb Orodispersible tablets should be reserved for use in those with swallowing difficulties only. (Dispersible tablets are more cost effective compared to liquid preparations).
Rivastigmine 2nd Line (Mild-Moderate Alzheimer's Dementia And Mild-Moderate dementia in Parkinson's disease)	<p>Capsules & liquid (Should be taken with food) Initial dose: 1.5mg twice daily for 2 weeks Increased to: 3mg twice daily for 2 weeks, then 4.5mg twice daily. Maximum daily dose = 6mg twice daily.</p> <p>Transdermal preparations Initial dose: 4.6mg/24hours, for at least 4 weeks Increased to: 9.5mg/24hours If well tolerated after a minimum of 6 months treatment at 9.5 mg/24 hours, can be increased to 13.3 mg/24 hours in patients who have demonstrated a meaningful cognitive deterioration/functional decline (based on clinical judgement).</p>	<p>At least two weeks should lapse between oral dose increases, slower dose titration may help minimise GI and CNS side effects. If adverse reactions persist, the daily dose should be temporarily reduced to the previous well-tolerated dose.</p> <p>Rivastigmine patches should be reserved for those patients who are unable to tolerate or swallow an oral AChEI. They are less likely to cause GI disturbance and may be helpful if nausea persists despite dose reduction/slower titration of oral rivastigmine preparations.</p> <p>Medication errors and inappropriate use of the rivastigmine transdermal patch have been reported, some of which resulted in overdose. See MHRA alert.</p>
Galantamine Alternative 2nd Line (Mild-Moderate Alzheimer's Dementia).	<p>MR capsules Initial dose: 8mg once daily for 4 weeks Increased to: 16mg once daily for at least 4 weeks Usual maintenance Dose:16-24mg daily</p> <p>Normal release tablets and liquid Initial dose 4mg twice daily for 4 weeks Increased to: 8mg twice daily for at least 4 weeks Usual maintenance dose: 8-12mg twice daily Preferably taken with morning and evening meals</p>	<p>Use modified release galantamine in preference to other formulations (may aid patient compliance). Branded modified release generic preparations eg Gatalin XL, Gazylan XL also have a lower acquisition cost.</p> <p>NB Liquid galantamine and normal release tablets are not approved for use in some areas. Please note: this is an interim position pending the adoption of the Lancashire and South Cumbria ICB formulary.</p> <p>Dose adjustment is required in moderate hepatic impairment. Use is contraindicated in severe hepatic impairment and if eGFR is less than 9ml/min</p> <p>Treatment with cholinesterase inhibitors, including galantamine, has been associated with weight loss in Alzheimer's patients. During therapy, patient's weight should be monitored.</p> <p>As with other cholinomimetics galantamine should be given with caution in the following conditions: cardiac disorders; gastrointestinal disorders; nervous system disorders; respiratory, thoracic and mediastinal disorders; renal and urinary disorders – please see SPC for full details</p> <p>Skin Reactions: Patients and carers should be told to watch out for signs of serious skin reactions and be told to stop treatment and seek medical help immediately if these develop ^{4,5}</p>
Memantine 3rd Line Moderate Alzheimer's disease in patients who are intolerant to or have a contra-indication to AChEIs. Consider for patients with moderate dementia who are	Tablets and Liquid Initial dose: 5mg once daily If tolerated increase: by 5mg weekly to a maximum of 20mg daily If CrCl = 30 - 49 ml/min the daily dose should be 10 mg per day. If tolerated after at least 7 days of treatment, the dose can be increased up to 20 mg/day. If CrCl = 5 – 29 ml/min max daily dose is10mg.	<p>Check renal function before prescribing</p> <p>Central nervous system side effects, such as dizziness and headaches are dose dependant. Slower dose titration and more frequent monitoring during initiation may help manage these.</p>

already prescribed an AChEI (combination therapy). Severe disease. Should be offered in combination with AChEI in severe disease. Do not start both treatments simultaneously.		Nb Liquid should be reserved for use in those with swallowing difficulties only and in preference to orodispersible tablets (as more cost effective)
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Table 2. Dementia with Lewy Bodies and Parkinson's Disease Dementia Dementia Medications: Summary of Dosing and Licensing Information ⁴

Medication (Licensed Indications)	Dosing Information. See SPC for more details. Slower titrations may be used on specialist advice/to minimise side effects	Additional Information (See table 3 and 4 for Side Effects and Interactions)
Donepezil 1st Line Mild-Moderate-Severe Dementia with Lewy Bodies Mild-Moderate-Severe Parkinson's disease dementia	Initial dose: 5mg each evening, at bedtime. Increased to: 10mg after 4 weeks	Generic Donepezil tablets have the lowest acquisition cost and should be considered as the 1 st line AChEI. Nb Orodispersible tablets should be reserved for use in those with swallowing difficulties only. (Dispersible tablets are more cost effective compared to liquid preparations).
Rivastigmine Alternative 1st Line Mild-Moderate-Severe Dementia with Lewy Bodies Mild-Moderately Severe dementia in Parkinson's disease	Capsules & liquid (Should be taken with food) Initial dose: 1.5mg twice daily for 2 weeks Increased to: 3mg twice daily for 2 weeks, then 4.5mg twice daily. Maximum daily dose = 6mg twice daily. Transdermal preparations Initial dose: 4.6mg/24hours, for at least 4 weeks Increased to: 9.5mg/24hours If well tolerated after a minimum of 6 months treatment at 9.5 mg/24 hours, can be increased to 13.3 mg/24 hours in patients who have demonstrated a meaningful cognitive deterioration/functional decline (based on clinical judgement).	At least two weeks should lapse between oral dose increases, slower dose titration may help minimise GI and CNS side effects. If adverse reactions persist, the daily dose should be temporarily reduced to the previous well-tolerated dose. Rivastigmine patches should be reserved for those patients who are unable to tolerate or swallow an oral AChEI. They are less likely to cause GI disturbance and may be helpful if nausea persists despite dose reduction/slower titration of oral rivastigmine preparations.
Galantamine 2nd Line (Mild-Moderate Dementia with Lewy Bodies, only where Donepezil and Rivastigmine are not tolerated). Mild-Moderate-Severe Parkinson's disease dementia	MR capsules Initial dose: 8mg once daily for 4 weeks Increased to: 16mg once daily for at least 4 weeks Usual maintenance Dose:16-24mg daily Normal release tablets and liquid Initial dose 4mg twice daily for 4 weeks Increased to: 8mg twice daily for at least 4 weeks Usual maintenance dose: 8-12mg twice daily Preferably taken with morning and evening meals	Use modified release galantamine in preference to other formulations (may aid patient compliance). Branded modified release generic preparations eg Gatalin XL, Gazylan XL also have a lower acquisition cost. NB Liquid galantamine and normal release tablets are not approved for use in some CCGs please check local formularies. Dose adjustment is required in moderate hepatic impairment. Use is contraindicated in severe hepatic impairment and if eGFR is less than 9ml/min Treatment with cholinesterase inhibitors, including galantamine, has been associated with weight loss in Alzheimer's patients. During therapy, patient's weight should be monitored. As with other cholinomimetics galantamine should be given with caution in the following conditions: cardiac disorders; gastrointestinal disorders; nervous system disorders; respiratory, thoracic and mediastinal disorders; renal and urinary disorders – please see SPC for full details Skin Reactions: Patients and carers should be told to watch out for signs of serious skin reactions and be told to stop treatment and seek medical help immediately if these develop ^{4,5}

<p>Memantine 3rd Line (Dementia with Lewy Bodies and Parkinson's disease dementia if AChEI are not tolerated or contraindicated)</p>	<p>Tablets and Liquid Initial dose: 5mg once daily If tolerated increase: by 5mg weekly to a maximum of 20mg daily If CrCl = 30 - 49 ml/min the daily dose should be 10 mg per day. If tolerated after at least 7 days of treatment, the dose can be increased up to 20 mg/day. If CrCl = 5 – 29 ml/min max daily dose is 10mg.</p>	<p>Check renal function before prescribing</p> <p>Central nervous system side effects, such as dizziness and headaches are dose dependant. Slower dose titration and more frequent monitoring during initiation may help manage these.</p> <p>Nb Liquid should be reserved for use in those with swallowing difficulties only and in preference to orodispersible tablets (as more cost effective)</p>
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Table 3. Monitoring and Review Requirements. ^{1,2,3}

NICE guidance is clear that treatment should not stop due to disease severity alone.

1. Follow-up should be initiated by secondary care and patients who do not attend, contacted and offered follow-up at home (if this is can be accommodated).
2. When a treatment has been initiated, the first follow-up should where possible be at ~ 3 weeks (and before the 2nd prescription has been issued). The aim of this review is to establish if there are any significant side effects, it should therefore include a pulse check (See table 3 for details of side effects).
3. AChEIs should be stopped if they are causing clinically significant bradycardia.

Elderly; for acetylcholinesterase inhibitors, prescription potentially inappropriate in patients with a known history of persistent bradycardia (heart rate less than 60 beats per minute), heart block, recurrent unexplained syncope, or concurrent treatment with drugs that reduce heart rate (risk of cardiac conduction failure, syncope and injury).
4. GI side effects may respond to a dose reduction/slower titration. Anxiety or agitation might prompt a trial without AChEIs as they are stimulant drugs, the result might be more apathy but less agitation.
5. At about three months, a follow-up is needed where the patient should be assessed (by secondary care) for response to treatment. A cognition test may be done but especially in more advanced dementia, an assessment of well-being and functioning is more important. It is helpful to offer information about support organisations at every contact as people's receptiveness may be different at different times. If there is no subjective or objective improvement at the three month review, treatment can be continued if there are no side-effects, and the patient reassessed in a further six months, in which case secondary care would continue to issue prescriptions during this time period.
6. **After the secondary care ~3-month review, when response to therapy and tolerance has been confirmed, primary care may take over prescribing responsibilities and routine follow up. If routine primary care consultations give rise to concerns about side effects, tolerability or the appropriateness of ongoing treatment then referral for secondary care review should be considered.**
7. Further follow-up may include periodic assessment of cognition, as in a memory clinic, but should be omitted if it upsets or intimidates the patient. Overall functioning, medication issues and carer views will constitute most of the review.
8. It is anticipated that, providing the patient is tolerating the treatment and there are no contraindications the treatment will be maintained until such a time as it becomes inappropriate, such as in extreme frailty.
9. When dementia gets worse:

In moderate disease, addition of memantine should be considered for patients already prescribed an AChE.

In severe disease addition of memantine to an AChEI should be offered.

Whilst these changes can be made in primary care without taking advice from secondary care service, LCFT Memory Assessment Service staff will be available to offer advice should this be considered necessary.
10. There is no difference in effectiveness between AChEIs and the only reason for swapping is to see if a different drug is better tolerated.

If routine primary care consultations give rise to concerns about side effects, tolerability or the appropriateness of ongoing treatment then consider whether advice is needed from LCFT specialist staff or whether the presentation requires referral back to secondary care for review.

Table 4. Summary of Dementia Medication Side Effects⁷ Please refer to the individual medications [SPC](#) for more details

ACETYLCHOLINESTERASE INHIBITORS:	
Donepezil, Galantamine, Rivastigmine	
<p><u>Donepezil</u></p> <p>Common or very common Aggression; agitation; appetite decreased; common cold; diarrhoea; dizziness; fatigue; gastrointestinal disorders; hallucination; headache; injury; muscle cramps; nausea; pain; skin reactions; sleep disorders; syncope; urinary incontinence; vomiting</p> <p>Uncommon Bradycardia; gastrointestinal haemorrhage; hypersalivation; seizure</p> <p>Rare or very rare Cardiac conduction disorders; extrapyramidal symptoms; hepatic disorders; neuroleptic malignant syndrome; rhabdomyolysis</p> <p><u>Galantamine</u></p> <p>Common or very common Appetite decreased; arrhythmias; asthenia; depression; diarrhoea; dizziness; drowsiness; fall; gastrointestinal discomfort; hallucinations; headache; hypertension; malaise; muscle spasms; nausea; skin reactions; syncope; tremor; vomiting; weight decreased</p> <p>Uncommon Atrioventricular block; dehydration; flushing; hyperhidrosis; hypersomnia; hypotension; muscle weakness; palpitations; paraesthesia; seizure; taste altered; tinnitus; vision blurred</p> <p>Rare or very rare Hepatitis; severe cutaneous adverse reactions (SCARs)</p> <p>There have been reports of QTc prolongation in patients using therapeutic doses of galantamine and of torsade de pointes in association with overdoses. Galantamine should therefore be used with caution in patients with prolongation of the QTc interval, in patients treated with drugs affecting the QTc interval, or in patients with relevant pre-existing cardiac disease or electrolyte disturbances</p>	<p><u>Rivastigmine</u></p> <p>The manufacturer recommends that patients are warned of the signs of serious skin reactions; they should be advised to stop taking galantamine immediately and seek medical advice if symptoms occur.</p> <p>General side-effects:</p> <p>Common or very common Anxiety; appetite decreased; arrhythmias; asthenia; dehydration; depression; diarrhoea; dizziness; drowsiness; fall; gastrointestinal discomfort; headache; hyperhidrosis; hypersalivation; hypertension; movement disorders; nausea; skin reactions; syncope; tremor; urinary incontinence; urinary tract infection; vomiting; weight decreased</p> <p>Uncommon Aggression; atrioventricular block</p> <p>Rare or very rare Pancreatitis; seizure</p> <p>Frequency not known Hepatitis</p> <p>Specific side-effects:</p> <p>Common or very common</p> <p>With oral use Confusion; gait abnormal; hallucinations; malaise; parkinsonism; sleep disorders</p> <p>Uncommon</p> <p>With oral use Hypotension</p> <p>With transdermal use Gastric ulcer</p> <p>Rare or very rare</p> <p>With oral use Angina pectoris; gastrointestinal disorders; gastrointestinal haemorrhage</p> <p>Frequency not known</p> <p>With transdermal use Hallucination; nightmare</p> <p>Side-effects, further information Dose should be started low and increased according to response if tolerated.</p> <p>Treatment should be interrupted if dehydration resulting from prolonged vomiting or diarrhoea occurs and withheld until resolution—retitrate dose if necessary.</p> <p>Transdermal administration is less likely to cause side-effects.</p>
NMDA RECEPTOR ANTAGONISTS:	
Memantine	
<p>Common or very common Balance impaired; constipation; dizziness; drowsiness; dyspnoea; headache; hypersensitivity; hypertension</p> <p>Uncommon Confusion; embolism and thrombosis; fatigue; fungal infection; hallucination; heart failure; vomiting</p> <p>Rare or very rare Seizure</p> <p>Frequency not known</p>	

Table 5. Interactions⁴ Please refer to the individual medications [SPC](#) for more details

ACETYLCHOLINESTERASE INHIBITORS:

Donepezil, Galantamine, Rivastigmine

- Should not be prescribed with other acetylcholinesterase inhibitors, anticholinergics or cholinergic agonists
- NSAID's- Monitor for symptoms of ulcerative disease.
- Inhibitors of Cytochrome P450 3A4 and 2D6 may increase plasma levels. Examples include Erythromycin, Ketoconazole, Itraconazole, Fluoxetine, Quinidine.
- Enzyme inducers may decrease plasma levels. Examples include Rifampicin, Phenytoin, Carbamazepine and alcohol
- Potential to interfere with drugs having anticholinergic activity
- Potential for additive effects with Beta- Blockers
- Additive effects with Succinylcholine and other neuromuscular blockers

There have been reports of QTc prolongation in patients using therapeutic doses of galantamine and of torsade de pointes in association with overdoses. Galantamine should therefore be used with caution in patients with prolongation of the QTc interval, in patients treated with drugs affecting the QTc interval, or in patients with relevant pre-existing cardiac disease or electrolyte disturbances

NMDA RECEPTOR ANTAGONISTS:

Memantine

- Effects of L-dopa, dopaminergic agonists, and anticholinergics may be enhanced by concomitant treatment with memantine.
- The effects of barbiturates and neuroleptics may be reduced.
- Dose adjustment of dantrolene or baclofen may be necessary when co administered with memantine.
- Concomitant use of memantine and amantadine should be avoided, owing to the risk of pharmacotoxic psychosis. Both compounds are chemically related NMDA-antagonists. The same may be true for ketamine and dextromethorphan. There is one published case report on a possible risk also for the combination of memantine and phenytoin.
- Cimetidine, ranitidine, procainamide, quinidine, quinine and nicotine use the same renal cationic transport system as amantadine, and may also interact with memantine leading to a potential risk of increased plasma levels.
- Possibility of reduced serum level of hydrochlorothiazide (HCT) when co-administered with memantine.
- Close monitoring of prothrombin time or INR is advisable for patients concomitantly treated with oral anticoagulants.

Memory Assessment Service (MAS) clinic contact details for each locality			
Central Lancashire Charnley Fold Cottage Lane Bamber Bridge Tel: 01772 401621	West Lancashire Brookside Aughton Street Ormskirk, L39 3BH Tel: 01695 684701	Fylde Coast Fleetwood Health & Wellbeing Centre (Main Hub) Second Floor Dock Street Fleetwood, FY7 6HP Tel: 01253 957036	South Cumbria Kirkstone House Murley Moss Business Park Kendal LA9 7RL Tel. 01530 462597
Pennine Lancashire (East Lancs & BwD) Gannow Lane Resource Centre 164 Gannow Lane Burnley BB12 6QH Tel: 01282 657832	Lancaster & Morecambe Altham Meadows Bartholomew Road Morecambe LA4 4RR Tel: 01524 550143		Dane Garth Dalton Lane Barrow LA14 4JR Tel. 01229 404353

References.

1. NICE TA 217. Donepezil, galantamine, rivastigmine and memantine for treatment of Alzheimer's disease. March 2011. (Updated June 2018) <https://www.nice.org.uk/guidance/ta217>
2. NICE NG 97 Dementia: assessment, management and support for people living with dementia and their carers June 2018 <https://www.nice.org.uk/guidance/ng97>
3. NHS England and Hardwick CCG. Dementia Revealed. What Primary Care Needs to Know. July 2014. <http://wriwasww.england.nhs.uk/wp-content/uploads/2014/09/dementia-revealed-toolkit.pdf>
4. The Electronic Medicines Compendium. (accessed November 2022) <https://www.medicines.org.uk/emc/>
5. Shire Pharmaceutical Ltd. Letter. Ref: SE/H/0210/001/007/UK December 2015 https://assets.digital.cabinet-office.gov.uk/media/569f7eec40f0b667ce000024/Reminyl_dhpc.pdf
6. NICE NG71. Parkinson's disease in adults. July 2017. <https://www.nice.org.uk/guidance/ng71>
7. Royal Pharmaceutical Society. British National Formulary. London. Accessed via <https://bnf.nice.org.uk/> [accessed online December 2022].

Please access this guidance via the LSCMMG website to ensure that the correct version is in use.

Version Control

Version Number	Date	Amendments Made
Version 1.1	June 2015	Approved
Version 1.2	July 2015	Donepezil cost updated
Version 1.3	October 2015	Table 2 monitoring requirements updated with point 5.
Version 1.4	February 2016	Information about severe skin reactions with galantamine added. Specific product costing information removed.
Version 1.5	January 2018	1 ST and 2 nd line treatment options highlighted alongside lowest acquisition cost of Galantamine MR branded generics. Side effects and cautions updated
Version 1.6	January 2020	Updated to reflect changes in NICE Clinical Guideline (NG97) including commencing memantine in primary care. AG.
Version 1.7	December 2022	Updated in line with current version of the SPC. AG/JG.

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