13 - References

References

286 The Maudsley® Prescribing Guidelines in Psychiatry CHAPTER 2 fenbufen, fenoprofen, flurbiprofen, ibuprofen, indometacin, ketoprofen, lumiracoxib, mefenamic acid, meloxicam, nabumetone, naproxen, piroxicam, sulindac, tenoxicam and tiaprofenic acid. Carbamazepine There are rare reports of neurotoxicity when carbamazepine is combined with lithium. Most reports are old and in the context of treatment involving high plasma lithium levels. It is of note though that carbamazepine can cause hyponatraemia, which may in turn lead to lithium retention and toxicity. Similarly, rare reports of CNS toxicity implicate selective serotonin reuptake inhibitors (SSRIs), another group of drugs that can cause hyponatraemia. Table 2.2 summarises drugs that may clinically interact with lithium. References

1. Bray NJ, et al. The genetics of neuropsychiatric disorders. Brain Neurosci Adv 2019; 2:2398212818799271.
2. Bortolozzi A, et al. New advances in the pharmacology and toxicology of lithium: a neurobiologically oriented overview. Pharmacol Rev 2024; 76:323–357.
3. Jope RS, et al. Lithium to the rescue. Cerebrum 2016; 2016:cer-02-16.
4. Hanson ND, et al. Lithium, but not fluoxetine or the corticotropin-releasing factor receptor 1 receptor antagonist R121919, increases cell proliferation in the adult dentate gyrus. J Pharmacol Exp Ther 2011; 337:180–186.
5. Matsunaga S, et al. Lithium as a treatment for Alzheimer’s disease: a systematic review and meta-analysis. J Alzheimers Dis 2015; 48:403–410.
6. Terao I, et al. Comparative efficacy of lithium and aducanumab for cognitive decline in patients with mild cognitive impairment or Alzheimer’s disease: a systematic review and network meta-analysis. Ageing Res Rev 2022; 81:101709.
7. Huang Q, et al. Lithium exposure and risk of major neurocognitive disorders: a systematic review and meta-analysis. J Clin Psychopharmacol 2024; 44:418–423.
8. Netto I, et al. Reversible lithium neurotoxicity: review of the literature. Prim Care Companion CNS Disord 2012; 14:PCC.11r01197.
9. Adityanjee, et al. The syndrome of irreversible lithium-effectuated neurotoxicity. Clin Neuropharmacol 2005; 28:38–49.
10. Memon A, et al. Association between naturally occurring lithium in drinking water and suicide rates: systematic review and meta-analysis of ecological studies. Br J Psychiatry 2020; 217:667–678.
11. Kessing LV, et al. Association of lithium in drinking water with the incidence of dementia. JAMA Psychiatry 2017; 74:1005–1010.

12. Goodwin GM, et al. Evidence-based guidelines for treating bipolar disorder: revised third edition recommendations from the British Association for Psychopharmacology. J Psychopharmacol 2016; 30:495–553.
13. Hui TP, et al. A systematic review and meta-analysis of clinical predictors of lithium response in bipolar disorder. Acta Psychiatr Scand 2019; 140:94–115. Table 2.2 Lithium: clinically relevant drug interactions. Drug group Magnitude of effect Timescale of effect Additional information ACE inhibitors Unpredictable Up to fourfold increases in [Li] Develops over several weeks Sevenfold increased risk of hospitalisation for lithium toxicity in the elderly Angiotensin II receptor antagonists may be associated with similar risk Thiazide diuretics Unpredictable Up to fourfold increases in [Li] Usually apparent in first 10 days Loop diuretics are safer Any effect will be apparent in the first month NSAIDs Unpredictable From 10% to over fourfold increases in [Li] Variable; few days to several months NSAIDs are widely used on a when necessary basis Can be bought without a prescription ACE, angiotensin-converting enzyme; [Li], lithium concentraction; NSAIDs, non-steroidal anti-inflammatory drugs.

Bipolar disorder CHAPTER 2 14. Bahji A, et al. Comparative efficacy and tolerability of pharmacological treatments for the treatment of acute bipolar depression: a systematic review and network meta-analysis. J Affect Disord 2020; 269:154–184. 15. Taylor DM, et al. Comparative efficacy and acceptability of drug treatments for bipolar depression: a multiple-treatments meta--analysis. Acta Psychiatr Scand 2014; 130:452–469. 16. Nolen WA, et al. What is the optimal serum level for lithium in the maintenance treatment of bipolar disorder? A systematic review and recommendations from the ISBD/IGSLI Task Force on treatment with lithium. Bipolar Disord 2019; 21:394–409. 17. Severus E, et al. Lithium for prevention of mood episodes in bipolar disorders: systematic review and meta-analysis. Int J Bipolar Disord 2014; 2:15. 18. Lähteenvuo M, et al. Real-world effectiveness of pharmacological treatments for bipolar disorder: register-based national cohort study. Br J Psychiatry 2023; 223:456–464. 19. Airainer M, et al. Lithium, the gold standard drug for bipolar disorder: analysis of current clinical studies. Naunyn Schmiedebergs Arch Pharmacol 2024; 397:9723–9743. 20. Dunner DL, et al. Prospective, long-term, multicenter study of the naturalistic outcomes of patients with treatment-resistant depression. J Clin Psychiatry 2006; 67:688–695. 21. Cleare A, et al. Evidence-based guidelines for treating depressive disorders with antidepressants: a revision of the 2008 British Association for Psychopharmacology guidelines. J Psychopharmacol 2015; 29:459–525. 22. Scott F, et al. Systematic review and meta-analysis of augmentation and combination treatments for early-stage treatment-resistant depression. J Psychopharmacol 2023; 37:268–278. 23. Nuñez NA, et al. Augmentation strategies for treatment resistant major depression: a systematic review and network meta-analysis. J Affect Disord 2022; 302:385–400. 24. Vázquez GH, et al. Efficacy and tolerability of combination treatments for major depression: antidepressants plus second-generation antipsychotics vs. esketamine vs. lithium. J Psychopharmacol 2021; 35:890–900. 25. Bauer M, et al. Role of lithium augmentation in the management of major depressive disorder. CNS Drugs 2014; 28:331–342. 26. Ercis M, et al. When and how to use lithium augmentation for treating major depressive disorder. J Clin Psychiatry 2023; 84:23ac14813. 27. Cipriani A, et al. Lithium versus antidepressants in the long-term treatment of unipolar affective disorder. Cochrane Database Syst Rev 2006; 4:CD003492. 28. Abou-Saleh MT, et al. Lithium in the episode and suicide prophylaxis and in augmenting strategies in patients with unipolar depression. Int J Bipolar Disord 2017; 5:11. 29. Correll CU, et al. Biological treatment of acute agitation or aggression with schizophrenia or bipolar disorder in the inpatient setting. Ann

Clin Psychiatry 2017; 29:92–107. 30. Sirois F. Steroid psychosis: a review. Gen Hosp Psychiatry 2003; 25:27–33. 31. Aydin M, et al. Continuing clozapine treatment with lithium in schizophrenic patients with neutropenia or leukopenia: brief review of literature with case reports. Ther Adv Psychopharmacol 2016; 6:33–38. 32. Harris EC, et al. Excess mortality of mental disorder. Br J Psychiatry 1998; 173:11–53. 33. Cipriani A, et al. Lithium in the prevention of suicide in mood disorders: updated systematic review and meta-analysis. BMJ 2013; 346:f3646. 34. Hayes JF, et al. Self-harm, unintentional injury, and suicide in bipolar disorder during maintenance mood stabilizer treatment: a UK population-based electronic health records study. JAMA Psychiatry 2016; 73:630–-637. 35. Fadaei A. An investigation into the association between suicide mortality rate and lithium levels in potable water: a review study. Int Clin Psychopharmacol 2023; 38:73–80. 36. Nolen WA, et al. The association of the effect of lithium in the maintenance treatment of bipolar disorder with lithium plasma levels: a post hoc analysis of a double-blind study comparing switching to lithium or placebo in patients who responded to quetiapine (Trial 144). Bipolar Disord 2013; 15:100–109. 37. Severus WE, et al. What is the optimal serum lithium level in the long-term treatment of bipolar disorder—a review? Bipolar Disord 2008; 10:231–237. 38. Manchia M, et al. Lithium and its effects: does dose matter? Int J Bipolar Disord 2024; 12:23. 39. Young AH. Lithium for long-term treatment of unipolar depression. Lancet Psychiatry 2017; 4:511–512. 40. Strawbridge R, et al. Lithium: how low can you go? Int J Bipolar Disord 2024; 12:4. 41. Moore CM, et al. Brain-to-serum lithium ratio and age: an in vivo magnetic resonance spectroscopy study. Am J Psychiatry 2002; 159:1240–-1242. 42. Bowen RC, et al. Less frequent lithium administration and lower urine volume. Am J Psychiatry 1991; 148:189–192. 43. Ljubicic D, et al. Lithium treatments: single and multiple daily dosing. Can J Psychiatry 2008; 53:323–331. 44. Gong R, et al. What we need to know about the effect of lithium on the kidney. Am J Physiol Renal Physiol 2016; 311:F1168–F1171. 45. Aiff H, et al. Effects of 10 to 30 years of lithium treatment on kidney function. J Psychopharmacol 2015; 29:608–614. 46. Parsaik AK, et al. Effects of long-term lithium therapy on kidney functioning in mood disorders: a population-based historical cohort study. Bipolar Disord 2024; doi: 10.1111/bdi.13501. 47. Frye MA, et al. Depressive relapse during lithium treatment associated with increased serum thyroid-stimulating hormone: results from two placebo-controlled bipolar I maintenance studies. Acta Psychiatr Scand 2009; 120:10–13. 48. Johnston AM, et al. Lithium--associated clinical hypothyroidism. Prevalence and risk factors. Br J Psychiatry 1999; 175:336–339. 49. Livingstone C, et al. Lithium: a review of its metabolic adverse effects. J Psychopharmacol 2006; 20:347–355. 50. McKnight RF, et al. Lithium toxicity profile: a systematic review and meta-analysis. Lancet 2012; 379:721–728. 51. Vandermeulen L, et al. Lithium-associated hypercalcemia and hyperparathyroidism: a systematic review and meta-analysis. World J Biol Psychiatry 2024; 25:417–429.

 52. Czarnywojtek A, et al. Effect of lithium carbonate on the function of the thyroid gland: mechanism of action and clinical implications. J Physiol Pharmacol 2020; 71:191–199. 53. Ott M, et al. Lithium intoxication: incidence, clinical course and renal function – a population-based retrospective cohort study. J Psychopharmacol 2016; 30:1008–1019. 54. Bell AJ, et al. Lithium neurotoxicity at normal therapeutic levels. Br J Psychiatry 1993; 162:689–692. 55. Smith FE, et al. 3D 7Li magnetic resonance imaging of brain lithium distribution in bipolar disorder. Mol Psychiatry 2018; 23:2184–-2191. 56. Gerrett D, et al. Prescribing and monitoring lithium therapy: summary of a safety report from the National Patient Safety Agency. BMJ 2010; 341:c6258. 57. Morriss R, et al. Lithium and eGFR: a new routinely available tool for the prevention of chronic kidney disease. Br J Psychiatry 2008; 193:93–95. 58. National Institute for Health and Care Excellence. Bipolar disorder:

assessment and management. Clinical guideline [CG185]. 2014 (last updated December 2023, last accessed October 2024); https://www.nice.org.uk/guidance/cg185. 59. Collins N, et al. Standards of lithium monitoring in mental health trusts in the UK. BMC Psychiatry 2010; 10:80. 60. Paton C, et al. Monitoring lithium therapy: the impact of a quality improvement programme in the UK. Bipolar Disord 2013; 15:865–875. 61. Kirkham E, et al. Impact of active monitoring on lithium management in Norfolk. Ther Adv Psychopharmacol 2013; 3:260–265. 62. Cavanagh J, et al. Relapse into mania or depression following lithium discontinuation: a 7-year follow-up. Acta Psychiatr Scand 2004; 109:91–95. 63. Yazici O, et al. Controlled lithium discontinuation in bipolar patients with good response to long-term lithium prophylaxis. J Affect Disord 2004; 80:269–271. 64. Goodwin GM. Recurrence of mania after lithium withdrawal. Implications for the use of lithium in the treatment of bipolar affective disorder. Br J Psychiatry 1994; 164:149–152. 65. Baldessarini RJ, et al. Effects of the rate of discontinuing lithium maintenance treatment in bipolar disorders. J Clin Psychiatry 1996; 57:441–448. 66. Biel MG, et al. Continuation versus discontinuation of lithium in recurrent bipolar illness: a naturalistic study. Bipolar Disord 2007; 9:435–442. 67. Sajatovic M, et al. Treatment adherence with lithium and anticonvulsant medications among patients with bipolar disorder. Psychiatr Serv 2007; 58:855–863. 68. Paton C, et al. Lithium in bipolar and other affective disorders: prescribing practice in the UK. J Psychopharmacol 2010; 24:1739–1746. 69. Kessing LV, et al. Suicide risk in patients treated with lithium. Arch Gen Psychiatry 2005; 62:860–866. 70. Pharmaceutical Press. Medicines Complete 2024; https://www.pharmaceuticalpress.com/services/medicinescomplete/. 71. Juurlink DN, et al. Drug--induced lithium toxicity in the elderly: a population-based study. J Am Geriatr Soc 2004; 52:794–-798. 72. Finley PR. Drug interactions with lithium: an update. Clin Pharmacokinet 2016; 55:925–-941. 73. Netto I, et al. Lithium neurotoxicity due to second-generation antipsychotics combined with lithium: a systematic review. Prim Care Companion CNS Disord 2019; 21:17r02225. 74. Konieczny K, et al. The syndrome of irreversible lithium-effectuated neurotoxicity: a scoping review. Alpha Psychiatry 2024; 25:190–205. 75. Kohler-Forsberg O, et al. Nonsteroidal anti--inflammatory drugs (NSAIDs) and paracetamol do not affect 6-month mood-stabilizing treatment outcome among 482 patients with bipolar disorder. Depress Anxiety 2017; 34:281–290.

Revision #1
Created 2026-01-04 20:14:16 UTC by Omar Ayman
Updated 2026-01-04 20:14:16 UTC by Omar Ayman