05 - Plasma levels

Plasma levels

Bipolar disorder CHAPTER 2 Prophylaxis of unipolar depression Lithium is significantly superior to antidepressants in preventing relapses that require hospitalisation, with a relative risk of 0.34.27 Lithium prophylaxis is indicated in unipolar depression (i) if a patient has suffered two depressive episodes in 5 years; (ii) after one episode if the episode is severe and there is a strong suicide risk; (iii) with indefinite treatment if there is adherence and adverse events are not problematic, particularly if a bipolar background is suspected.28 Other uses of lithium Lithium is also used to treat aggressive and self-mutilating behaviour and studies have confirmed benefits29 to both prevent and treat steroid-induced psychosis30 and to raise the white blood cell count in patients receiving clozapine.31 Lithium and suicide It is estimated that 15% of people with bipolar disorder eventually take their own life.32 A meta-analysis of clinical trials concluded that lithium reduced the risk of both attempted and completed suicide by 80% in patients with bipolar illness,33 and large database studies have shown that lithium-treated patients are less likely to complete suicide than patients treated with other mood-stabilising drugs.34 In patients with unipolar depression, lithium also seems to protect against suicide although the mechanism of this protective effect is unknown.33 As noted, environmental lithium has been reported to be inversely related to suicide at a population level.10,35 Plasma levels The minimum effective plasma level for prophylaxis of mood disorder episodes is probably 0.4mmol/L, with the optimal concentration being in the range 0.6–-0.8mmol/L.36 Levels above 0.75mmol/L offer additional protection only against manic symptoms37 so the target range for prophylaxis is effectively 0.6–0.8mmol/L.16,38 Changes in plasma levels in either direction seem to worsen the risk of relapse.37 The optimal plasma level range in patients who have unipolar depression is less clear.39 Taking account of evidence from clinical trials, naturalistic studies and lithium in drinking water, studies seem to suggest that various benefits of lithium begin at a low concentration and increase over a narrow range up to 1.0mmol/L. Low-dose lithium regimens are under investigation but not yet clinically recommended.40 Children and adolescents may require higher plasma levels than adults to ensure that an adequate concentration of lithium is present in the central nervous system (CNS).41 Lithium is rapidly absorbed from the gastrointestinal tract but has a long distribution phase. Blood samples for plasma lithium level estimations should be taken 10–14 (ideally 12) hours post-dose in patients who are prescribed a single daily dose of a prolonged-release preparation at bedtime.12

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