

16 - Endocrine effects

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© SPMM Course 5. Antimanic agents - adverse effects Renal effects Certain side effects including polyuria seems to be associated with peak lithium levels; once daily instead of twice daily dosing can reduce these problems. Nearly 1/3rd of those treated will have this side effect, but tolerance develops in due course; functional antagonism of ADH by lithium ion is considered to be the underlying mechanism. Use of K⁺ sparing diuretics such as amiloride or spironolactone can control polyuria. Renal damage may occur in severe, prolonged toxicity - but cumulative lithium use rather than toxicity leads more commonly to renal failure in lithium users. Chronic exposure longer than 10 years induces interstitial fibrosis resulting in chronic renal damage. Lithium has a narrow therapeutic index. Lithium toxicity occurs in conditions of overdose or dehydration. Non-specific gastrointestinal symptoms usually precede the more serious neurological symptoms and renal shutdown. Immediate cessation of lithium followed by urgent medical attention is required as some patients may require a hemodialysis if levels exceed 4mEq/L. Topiramate is a weak inhibitor of carbonic anhydrase and can promote the development of renal stones. SIADH may be seen with valproate use though more common with carbamazepine; it is dependent on the dose prescribed. Oxcarbazepine is a 10-keto derivative of CBZ with an identical profile but less enzyme induction and fewer drug-drug interactions. It produces less rash and neurotoxicity but more hyponatremia than CBZ. Cardiac effects ECG effects of therapeutic lithium dose are similar to hypokalemia - with flat T waves, or inverted T. Lithium can depress sinus node activity and so is contraindicated in sick sinus syndrome. Endocrine effects Lithium can cause a variety of thyroid problems - the most common being a benign hypothyroid state. 5% patients may develop goiter, and overt hyperthyroidism is also reported in some cases. Thyroid deficiency is common in those with high risk for preexisting antithyroid antibodies (especially middle-aged women). The risk is 3-4:1 in women and is high in first 2 years of treatment. Rapid cycling patients are at higher risk. High TSH is seen in nearly 1/3rd of chronic lithium-treated patients even in the absence of clinical hypothyroidism. In resistant depression

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