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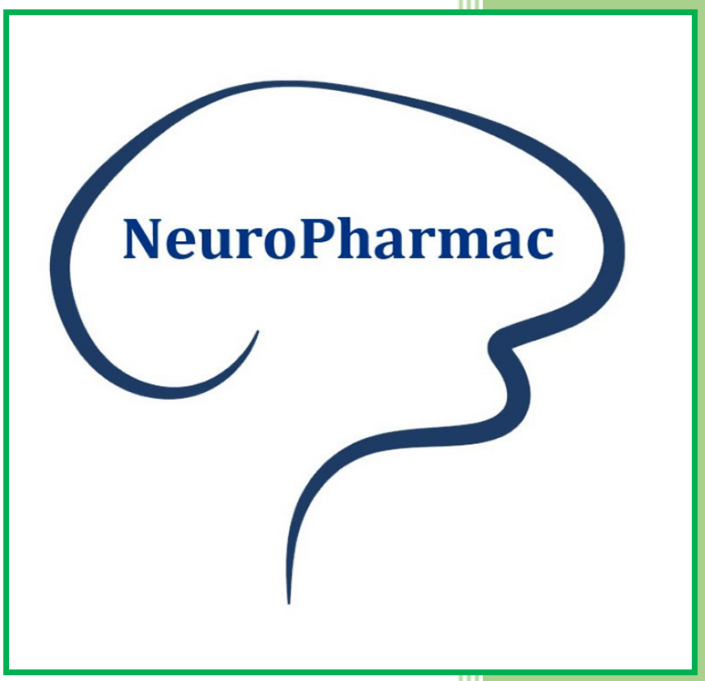

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Review

Essential Tremor: β blockers a first-line therapy

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ABSTRACT

Essential tremor is one of the most common movement disorders in adults and can affect both children and adults. Tremor may also be present in other locations, commonly the neck or the vocal cords. Patients with additional neurologic symptoms are now categorized as "essential tremor plus." Additional clinical features associated with the condition include but are not limited to cognitive impairment, psychiatric disorders, and hearing loss. When treatment is needed, propranolol is considered a first-line treatment in the management of essential tremor.

β blockers:

Propranolol is one of two recommended first-line therapies for essential tremor. Propranolol is given in divided doses, three times daily. Head tremor and voice tremor do not objectively respond to chronic propranolol therapy.[1]

Small studies indicate that long-acting propranolol is as effective as the short-acting formulation; patients with exposures to both prefer the ease of the long-acting formulation.[2,3] One year follow-up of patients taking propranolol showed a continued but sometimes reduced response to treatment; some patients needed dose increases.[4]

Propranolol is contraindicated in patients with bronchial asthma and allergic rhinitis; selective β blockers might be considered in these cases. The American Academy of Neurology guidelines recommends the selective β blocker atenolol (100 mg daily) as "probably effective."[5]

Propranolol should be used with caution in patients with diabetes mellitus, as the adrenergic signs and symptoms of hypoglycemia can be masked. In the absence of contraindications, patients with stable heart failure due to left ventricular systolic dysfunction may take propranolol.[6]

Patients who do not respond to propranolol do not respond to other β receptor blocking drugs. If a patient cannot take propranolol for some reason but could take an alternate non-selective β receptor blocker, three other non-selective β blockers have indications for use as second-line therapy. One multicenter crossover trial (n=145 completed study) reported that the response of tremor to arotinolol was significantly better than that to propranolol (30 mg daily arotinolol v 160 mg daily propranolol; P=0.002) on motor task assessment.[7] A randomized, double-blind, placebo-controlled trial in 24 patients found that sotalol (80 mg twice daily) was significantly better than placebo for the treatment of essential tremor (P<0.01); its effects were not compared directly with a response to propranolol.[8] Nadolol was compared with placebo in a 10 person double-blind crossover trial and shown to have efficacy at 120 mg and 240 mg daily dose. The higher dose had no additional benefit.[9]

Guidelines:

At the time of this review, the American Academy of Neurology had produced guidelines for the management of essential tremor. The Quality

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Standards Subcommittee of the American Academy of Neurology initially published guidelines in 2005 and updated them in 2011. American Academy of Neurology guidelines make no specific dosing recommendations, the Italian guidelines do. The guidelines endorse propranolol and primidone as first-line treatment, and both recommend gabapentin and alprazolam as second-line treatment. They make no recommendations for polytherapy.[10]

References:

1. Shanker V. Essential tremor: diagnosis and management. BMJ. 2019;366:l4485.
2. Cleeves L, Findley LJ. Propranolol and propranolol-LA in essential tremor: a double blind comparative study. J Neurol Neurosurg Psychiatry. 1988;51:379-84.
3. Koller WC. Long-acting propranolol in essential tremor. Neurology. 1985;35:108-10.
4. Calzetti S, Sasso E, Baratti M, Fava R. Clinical and computer-based assessment of long-term therapeutic efficacy of propranolol in essential tremor. Acta Neurol Scand. 1990;81:392-6.
5. Larsen TA, Teravainen H, Calne DB. Atenolol vs. propranolol in essential tremor. A controlled, quantitative study. Acta Neurol Scand. 1982;66:547-54.
6. Consensus recommendations for the management of chronic heart failure. On behalf of the membership of the advisory council to improve outcomes nationwide in heart failure. Am J Cardiol. 1999;83(2A):1A-38A.
7. Lee KS, Kim JS, Kim JW, Lee WY, Jeon BS, Kim D. A multicenter randomized crossover multiple-dose comparison study of arotinolol and propranolol in essential tremor. Parkinsonism Relat Disord. 2003;9:341-7.
8. Leigh PN, Jefferson D, Twomey A, Marsden CD. Beta-adrenoreceptor mechanisms in essential tremor; a double-blind placebo controlled trial of metoprolol, sotalol and atenolol. J Neurol Neurosurg Psychiatry. 1983;46:710-5.
9. Koller WC. Nadolol in essential tremor. Neurology. 1983;33:1076-7.
10. Zesiewicz TA, Elble R, Louis ED, et al., Quality Standards Subcommittee of the American Academy of Neurology. Practice parameter: therapies for essential tremor: report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology2005;64:2008-20.

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