



Review of Current Literature-TCA's Use in Neuropathic Pain

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INTRODUCTION

- Neuropathy is a pervasive, ongoing problem in the general population, especially in those over 40 years of age.
- Neuropathic pain is defined by the International Association for the Study of Pain as pain arising from the somatosensory system and often described as a burning or stabbing sensation.
- Tricyclic antidepressants (TCAs) became widely available for treatment of neuropathic pain in the 1960's and remain among the recommendations for treatment of neuropathy per The Fourth International Conference on the Mechanisms and Treatment of Neuropathic Pain.
- TCAs are thought to inhibit neuropathic pain through their inhibition of reuptake of norepinephrine and serotonin, NMDA receptor antagonism, as well as sodium and calcium channel antagonism.
- Despite their proven efficacy, TCAs must be used with caution as they can exhibit a number of severe adverse effects including tachycardia, arrhythmia, anticholinergic effects, and/or sexual dysfunction.

Materials and Methods

- Online literature review via Pubmed and Google Scholar in August 2022 using selection criteria of any studies comparing the use of TCAs to a host of other multi-modal neuropathic pain management options.
- Studies were excluded if they did not meet the above criteria or were matching reports.

Results

- TCAs remain a class 2 option for neuropathic pain control.
- Review analyses indicate amitriptyline was the focus for a majority of studies reviewed.
- When amitriptyline and desipramine were compared to placebo, they were found to have a NNT of 2, which is superior to SSRI's with known NNT of 4-5.
- Current evidence suggests the analgesic effects of TCAs occur BEFORE their anti-depressant effects, suggesting a possible alternative MOA for TCAs as it pertains to their effect on pain pathways.
- At the time of this review, best practice guidelines within the US remain in consonance with historical paradigms with respect to TCA usage in treatment of neuropathy.

Discussion

- The treatment efficacy of TCA's for neuropathic pain is well-established but their side effect profile has historically caused SNRI's to be favored as first line treatment.
- As with any medication, a thorough investigation and understanding of the patient's presenting comorbidities is crucial for avoiding or mitigating unwanted adverse effects to the extent possible.
- The role of TCAs in treatment of central neuropathic pain remains an open question and area of ongoing research.
- TCAs remain a powerful tool in the arsenal of clinicians seeking to avoid opioid use for treatment of neuropathic pain.

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