Treatment of ALS with Modified Snake Venom did not alter clinical progression. Tilorone could actually cause harm.

**Clinical Problem:** A 57 year old male presents to your office with a combination of both upper and lower motor neuron signs. EMG studies reveal widespread fasciculations and polyphasic, high amplitude muscle potentials. Neurogenic atrophy is noted on muscle biopsy. You make a diagnosis of ALS and discuss prognosis. The patient indicates that he has read about an antiviral hypothesis regarding therapy and wishes to pursue this avenue.

**Clinical Question:** Do Drugs such as Tilorone and Modified Snake Venom (MSV) slow disease progression and prolong life in ALS?

**Clinical Bottom Lines:**
1. Tilorone 1000mg weekly does not have an effect on clinical progression in ALS.
2. Tilorone may actually increase mortality [NNH 95% CI 2 (1-50)] and cause corneal clouding [NNH 95% CI 2 (1-50)]
3. Modified snake venom is not an effective therapy for ALS.

**The Evidence:**

Paper 1:
Double blinded placebo controlled study of tilorone 1g po weekly for 6 months in 16 patients. Outcomes included neurologic exam, PFTs, quantitative muscle exams, and speech recordings.

Paper 2:
Double blinded placebo controlled study of MSV 1.3ml IM q2d for 3 months in 64 patients. Outcomes included neuro score rating, manual testing, EMG, swallowing assessments, PFT, and subjective ratings.

**Data interpretation:**

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<tr>
<th>Author</th>
<th>Result</th>
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<tbody>
<tr>
<td>Olson</td>
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<tr>
<td>Rivera</td>
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<table>
<thead>
<tr>
<th>Adverse event (ref 1)</th>
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<th>ARR</th>
<th>NNH</th>
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<tbody>
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<td>13%</td>
<td>63%</td>
<td>- 50%</td>
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<td>1- 50</td>
</tr>
<tr>
<td>corneal clouding</td>
<td>0%</td>
<td>50%</td>
<td>- 50%</td>
<td>2</td>
<td>1- 50</td>
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**Comments:**

Paper 1 (Class 2b)
Inadequate description of patients at the start of trial. Placebo group appeared to have a longer disease duration at start. High mortality rate and incidence of adverse events in treatment group. Half the patients received drug for less than 4 months.

Paper 2 (Class 2b)
Insufficient accounting of withdrawn patients. Limited demographic data of trial participants.

**References:**

**File listing:** ALS/Tilorone/Modified snake venom/therapy

**Appraiser:** Bart Demaerschalk and the UWO Evidence Based Neurology Group.

**Date appraised:** April 1999