Optic Neuritis Treatment Trials

450 patients at 15 centers

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Optic neuritis

1. onset 20 – 45
2. women 3:2
3. strong cross-over with MS
   esp. in young women

Optic neuritis and MS

1. MS is a clinical dx
2. If MS
   a. 90% optic neuritis (ON)
   b. 20% present with ON
   c. 50% INO or other EOM
3. If ON
   a. 30% MS w/in 5 years
   b. 60% MS w/in 15 years
   c. 90% MS in young and female
Study Specifics

- 457 patients recruited at 15 centers between 7/1/88 and 6/30/91
- Study Headquarters: University of Southern Florida
- Data Coordinating Center: George Washington University
- Visual Field Reading Center: University of California, Davis

Treatment Groups

- **Intravenous**
  250 mg methylprednisolone q 6hrs x 3d
  oral prednisone 1 mg/kg/day for 11 days

- **Oral**
  1 mg/kg/day oral prednisone for 14 days

- **Placebo**
  Oral placebo for 14 days
Value of Ancillary Tests

- ANA, FTA, CXR did not alter diagnosis or management of any cases!
- ANA titer positive <1:320 in 13%, >=1:320 in 3%; positive titer did not alter any patient’s management
- **Conclusion**: In patients with acute optic neuritis with typical features (e.g. unilateral, pain, no iritis/vitritis), *no blood studies are necessary*
Serious Medication Side Effects

**Prednisone Group**
None

**Intravenous Group**
One pt with acute pancreatitis
One pt with acute depression
--both resolved without sequelae

### Side Effects of Treatment

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<thead>
<tr>
<th>Side Effect</th>
<th>PBO</th>
<th>IV</th>
<th>PRD</th>
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<tbody>
<tr>
<td>Sleep disturbances</td>
<td>20%</td>
<td>53%</td>
<td>45%</td>
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<tr>
<td>Mild mood change</td>
<td>16%</td>
<td>37%</td>
<td>34%</td>
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<tr>
<td>Stomach upset</td>
<td>25%</td>
<td>50%</td>
<td>41%</td>
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<tr>
<td>Facial flushing</td>
<td>2%</td>
<td>23%</td>
<td>10%</td>
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<table>
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<tr>
<th>Mean % weight change from baseline</th>
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<tr>
<td>Day 4</td>
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<tr>
<td>6 Months</td>
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New Episodes of Optic Neuritis During Follow Up

Kaplan-Meier Curves showing cumulative incidence of new attacks of optic neuritis in either eye.

Comparison of each steroid group to placebo group by Mantel log-rank test.

- Prednisone Group: $p = 0.02$
- IV Group: $p = 0.51$
ONTT Conclusions

- Testing not necessary
- Oral prednisone contraindicated
- I.V. solumedrol may have value

Treatment Protocol

- Solumedrol 250 mg iv q 6hrs x 3d
- Oral prednisone x 8 days
ONTT Further Observations

- Side effects of protocol are minimal
- VF defects common in fellow eye
- Work up usually unnecessary
- Steroids speed up – do not influence final outcome
- Initial vision predicts outcome

At Two Years ONTT

- Recurrences of optic neuritis 25 \(\rightarrow\) 13%
- Incidence of MS 17 \(\rightarrow\) 8%
I Explain Protocol

- Is not to treat optic neuritis
- Is to reduce future incidence of
  - Optic neuritis
  - MS

Therefore Whether to Use Protocol Based on Assumptions of Further Risk. Factors:

- Age
- Sex
- Previous attacks
- MRI
MS

- Clinical Diagnosis
- Spectrum of Disease

Labs may show subclinical disease. This is laboratory MS, not clinical.
General Rules Regarding Optic Neuritis Conversations

- Tell as much as patient wants and patient can handle
- Don’t let MS be learned “on the street”
- Don’t rush to diagnose MS

My Usual Suggestion

- Explain optic neuritis, MS, protocol
- If patient interested in protocol:
  - MRI
  - If >= 2 plaques >= 3 mm
  - 3 days solumedrol
  - 6 days p.o. (prednisone 60/40/20)
How do you know if it’s optic nerve?
Does ONSD work for NAION?

Simply put – No
After 6 Months

Improvement by 3 or more lines
- ONSD 33%
- Controls 43%

NAION

- 199 randomized to ONSD
- 125 controls
After 6 Months

Worsened by 3 or more lines
- ONSD 24%
- Controls 12%

Confounding Factors

- Different surgeons (least experienced, best results!)
- Never separated AI ON from pAI ON