ROP  The 3rd Epidemic

Timothy W. Olsen, MD
F. Phinizy Calhoun Sr. Professor
Chairman, Ophthalmology
Emory University
Financial Disclosure

INDUSTRY
Genentec-Roche (Site-PI on Lampalizumab Study GX29176)

Government
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NIH/NEI: R43 EY023504
NIH/NIA: RO1 AG025392
NIH/NEI: R43 EY016229
NIH/NEI: P30 EY006360

Foundation
R. Howard Dobbs Jr. Foundation
Minnesota Lions
Emtech Biotechnology Grant
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Abraham J. and Phyllis Katz Foundation
Research to Prevent Blindness
Georgia Research Alliance

Patents
Scleral Depressor: 8,083,751 B2 (US, 12-27-2011)
Tissue Support Structure: 13/511,690 (US) #1 986 581 (Europe 10-3-2012)
Postop Pain Formulation: 14011 Prov 09-27-2013
Off-Label Bevacizumab
ROP
ROP Zones
ROP Zones
Plus Disease
Immature Zone I
Zone 2-Stage 1
Zone 2-Stage 2
Zone 2 - Stage early 3
Popcorn Hemorrhages
Zone 2 - Stage 3
ROP Stage 4A & 4B

Flynn et al.
ROP Stage 5  Funnel RD
Major Study Outcomes

CryoROP ETROP

Natural Hx  Cryo  Threshold  Prethreshold

50  p<0.001  25  15  10

Unfavorable Outcome

The Societal Burden of Blindness Secondary to Retinopathy of Prematurity in Lima, Peru

HREEM B. DAVE, LUZ GORDILLO, ZOUH YANG, MONICA S. ZHANG, G. BAKER HUBBARD III, AND TIMOTHY W. OLSEN

Peru
How Many Neonates in the USA are Screened?

- 28,000 are at risk <1250 grams BW
- 15,000 are affected by ROP
- 10% Treated or 1,500 annually
Interviews at Schools
Lima Peru: CIA data
Rescue Group
Cryo-ROP ETROP

The Natural History of ROP:
Outcomes with and without early laser treatment

- Favorable Structural Outcome
- Unfavorable Structural Outcome

With Treatment
- 90%
- 10%

Without Treatment
- 50%
- 50%
DIRECT COST

- Facility and OR costs
- Screening Equipment Costs
- Treatment Equipment Costs
- Caregiver Costs to attend follow-up visits
- Labor Costs for screening, treatment, and follow-up care
- Import tax

Cost of treating one child with ROP
Direct Cost
INDIRECT COST

- Decreased contribution to GDP by caregivers
- Societal cost of Blindness Secondary to Untreated ROP
  - Decreased life expectancy of blind individual
  - Unemployment or under-employment of blind individual
- Decreased contribution to GDP by blind individual

No Tax Revenue
Family Care Demands
White Cane Training
Braille Training
Mexico City
Research Team
EcROP
Survey
Field
Work
<table>
<thead>
<tr>
<th>Country</th>
<th>US</th>
<th>Mexico bevacizumab</th>
<th>Lima Peru 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Cost /Child</td>
<td>$11 K</td>
<td>$6 K</td>
<td>$2.5 K</td>
</tr>
<tr>
<td>QALY</td>
<td>$1,200</td>
<td>$700</td>
<td>$70</td>
</tr>
<tr>
<td>Indirect Cost (Avoided)</td>
<td>$2.3 M</td>
<td>$1M</td>
<td>$198 K</td>
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<tr>
<td>Generational Cost Saved</td>
<td>$22 B</td>
<td>$4.3 B</td>
<td>$32 M</td>
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<tr>
<td>Lifetime</td>
<td>$214 B</td>
<td>$58 B</td>
<td>$960 M</td>
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</tbody>
</table>
Summary: EcROP

Positive Socio-economic Benefit
May be used Globally and Regionally
Financial data for Ministers of Health
Especially important: “3rd Epidemic”
Next Up

Roman Shinder MD

“Oculoplastics Tumors and Masqueraders”