Universal Eye Screening of Infants at Birth?

Pilot Data from the KUSP Trial
(A KIDROP Initiative)

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No Financial Interest
Recap of the KIDROP initiative
Retinopathy of Prematurity – India’s ‘epidemic’ problem

ROP Epidemic: Leading cause of infant blindness

2 million at risk.

47% incidence, 10% blindness
Narayana Nethralaya Initiative

KIDROP’s Triple **T** Strategy

- **Tele-ROP**
- **Train** peripheral ophthalmologists (ROP fellowship)
- **Talking to and Training** pediatricians & gynecologists
Narayana Nethralaya
KIDROP Trial
(Karnataka Internet Assisted Diagnosis of ROP)
2007 to date
# Karnataka Coverage Area

- **18 districts**
- **74 hospitals**
- **3 Independent teams**

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<thead>
<tr>
<th>Day</th>
<th>Zone 1</th>
<th>Zone 2 (NK)</th>
<th>Zone 3 (CK)</th>
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<tbody>
<tr>
<td>Mon</td>
<td>Mandya, Mysore, Chamrajnagar</td>
<td>Raichur</td>
<td>Davangere</td>
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<td>Tue</td>
<td>Bangalore BBMP</td>
<td>Gulbarga</td>
<td>Chitradurga</td>
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<td>Wed</td>
<td>Tumkur dist Hosur (TN)</td>
<td>Bidar</td>
<td>Bellary</td>
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<td>Thu</td>
<td>Kolar</td>
<td>Bijapur</td>
<td>Haveri</td>
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<td>Fri</td>
<td>Tumkur Pavagada</td>
<td>Bagalkot</td>
<td>Dharwad</td>
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<td>Sat</td>
<td>Bangalore Urban</td>
<td>Koppal</td>
<td>Gadag</td>
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First PPP in Infant Blindness in India - ROP

2.3 Crores (2009-2012)

Innovative Initiative by Govt. of Karnataka

12 districts in Karnataka – North and Central zones
· Training; Ophthalmologists & OA

· “Reading Site”

· Treatment

· Funding for Camera & Laser

· Logistics: Support: Mobilization of the infants – screening and treatment

· Advocacy & Health
TRAINING @ KIDROP
TREATMENT AT THE OUTREACH

Laser treatment & patient counseling in the Rural Outreach
KARNATAKA INTERNET ASSISTED DIAGNOSIS FOR RETINOPATHY OF PREMATURITY

Completing 5 years
Preventing Infant Blindness Using Technology & Passion
Sep 2007 - June 2012

2007 - 2012 Preventing Infant Blindness Using Technology & Passion

2007 - 2012 Preventing Infant Blindness Using Technology & Passion

The Journey Continues...

1. Journey Begins...
2. India’s first Retcam Shuttle
3. 1st International invited talk on ROP
4. Award from Dalai Lama
5. Tele ROP platform established
6. World’s 1st ROP App on an iPhone
7. India’s 1st PPP in ROP (NRHM, Karnataka)
8. A Top 10 Medical Innovation
9. Thrombocytopenia: A new risk factor!
11. MEA calls KIDROP “Unique & Successful”
12. Positive Health Hero award
13. New technique of Infant OCT imaging
14. Govt. teams- training begins
15. Pune team trained
16. 10,000 babies crossed
17. Bajaj Gandhi Award for Excellence
18. IIM Ahmedabad: KIDROP case study
19. A new OCT finding in ROP: IOVS
20. North Karnataka screening starts
21. KIDROP Facebook page launched
22. Marquis Who’s Who of the World
23. NRHM makes a movie on KIDROP
24. Gujarat team trained
25. Central Karnataka equipment installed
26. 600+ laser performed
KIDROP

- 2008: NN Initiative
- 2009 MOU with NRHM Karnataka
- 2010: Training
- 2011 (to date) Implementation

- Totally: 23578 sessions
- 18 districts
- 614 laser procedures
Look What Else We Found!

Clinical entities serendipitously detected on Retcam imaging during routine ROP screening

To be presented at the World ROP Congress, Shanghai October 14-16th, 2012
Aim

• To report the spectrum of anterior and posterior segment diagnoses that were detected serendipitously during routine Retinopathy of Prematurity (ROP) screening in a one-year period.
Methods

• 2011 : Retrospective

• All infants undergoing ROP screening (< 2000 grams and / or < 34 weeks gestation age)

• Retcam imaging – (Anterior segment without lens and fundus with 130 degree lens)

• First session between 2 – 4 weeks of life

• Minimum 7 images per eye (Modified PHOTO-ROP)
Results

- 1450 infants
- 106 infants (7.3%) with “other diagnoses”
Distribution of diagnoses
45% of anterior diagnoses were congenital / developmental cataracts
Cherry red spots OU

History of Consanguinity

STORAGE DISORDER
Screened for ROP
(BW 1450 grams, 33 weeks)
Suspected case of birth trauma
Uveitis Related Diagnoses (14 cases)
Retinal vasculitis as an early indicator of systemic candidal abscesses in a premature infant

Anand Vinekar, MD, FRCS, a Kavitha Avadhani, MD, a Pradeep Maralusiddappa, MD, b Vinay M D Prabhu, MD, c Padmamalini Mahendradas, MD, a and V. A. Indumathi, MD d
Fungal hyphae grown in urine

Perinephric abscess draining into the pelvi-calyceal system
Serendipitous pick up of Retinoblastoma
Karnataka Universal Screening Programme
KUSP
KUSP Pilot

- Government Hospital
- All babies delivered
- Sample size: 1000
- One screening within 5 days of life
- Standard protocol of imaging
# Karnataka Universal Screening Programme (KUSP)

**Baby of:**

**Gender:**

**Birth Order:**

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<tr>
<th>Date of Birth</th>
<th>Birth Weight</th>
<th>GA</th>
<th>MOB</th>
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**Risk Factors:**

**Sl. No.** | **Date** | **Comments** |
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**Pediatric Helpline:** 9980 980093

**NN 1:**
- 121/C, Chord Road, Rajajinagar, 1st 'R' Block, Bangalore-560 010, INDIA.
- Mobile: 99025 46046 (Emergency only). Ph: 91-80-66121300-1305, 1400-1404
- Fax: 91-80-23377329

**NN 2:**
- Narayana Health City (Narayana Hrudayalaya Campus), # 258/A, Bommasandra, Hosur Road, Bangalore-560 099, INDIA.
- Mobile: 99028 21128 (Emergency only). Ph: 91-80-66660655-0658
- Fax: 91-80-66660650

**NN 3:**
- # 37, Castle Street, Opp. Sacred Heart Church, Ashok Nagar, Bangalore-560 025
- Ph: 080-66974000-03 Fax: +91-80-66974005

E-mail: info@nnmail.org / info@narayananethralaya.com
Website: www.narayananethralaya.org / www.pediatricretina.org
Pilot results

- 256 babies

- 16 with findings (6.25%)

- Hemorrhages

- “Retinitis”
“Opportunistic counseling”
Good Eye Practice – Health education to the parents

Using Digital images to sensitize mothers, especially for ROP
KUSP : Is it a good idea?

- Time will tell
- Cost-utility to be worked out
- Long term analysis is required
- Looks promising!
NRHM, Karnataka presents

Light of the Eyes...

a film on KIDROP
Karnataka Internet Assisted Diagnosis of Retinopathy of Prematurity
THANK YOU

Working towards a world without ROP blindness*

* Video on YouTube

Follow the KIDROP Program on FACEBOOK

www.facebook.com/KIDROP