Paediatric cataract: IOL vs aphakia

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Cataract surgery in children

- The aim of pediatric cataract surgery is to provide and maintain a clear visual axis and a focused retinal image.
- The long-term visual outcome is often negatively affected by the development of amblyopia.
- Cataract surgery in children remains complex and challenging.
Primary IOL implantation

- General consensus exists that IOL implantation is appropriate for most older children undergoing cataract surgery.
- In contrast, the advisability of IOL implantation during the first year of life is still being questioned.
- IOL vs CL remains the main controversy in congenital cataract management

IOL implantation

- IOL implantation is considered as a standard of care by most physicians when children are undergoing cataract surgery beyond their first birthday. In contrast, the advisability of IOL implantation in infancy is still being questioned.

- Both pediatric ophthalmologists and parents have equipoise regarding the use of an IOL implant versus a CL to optically correct an infant <7 months old with a UCC after cataract surgery.


Lambert et al. Intraocular Lens Implantation During Infancy: Perceptions of Parents and the American Association for Pediatric Ophthalmology and Strabismus Members. JAAPOS Volume 7 Number 6 December 2003
Risk factors for IOL

- Anterior segment dysgenesis
- PHPV
- Glaucoma
- AL < 16mm
- Corn. Diameter < 10mm ?
- Persistent fetal vasculature ?

Paediatric cataract: IOL vs aphakia

Why use IOL?
Advantages IOL vs Aphakia

Visual acuity

- Despite the apparent increased incidence of reoperation in infant eyes after primary IOL implantation for unilateral congenital cataracts, pseudophakic eyes have been reported to have better visual results than age matched aphakic eyes corrected with contact lenses.
- A higher percentage of the children undergoing primary IOL implantation during the first 6 weeks of life achieved 20/40 or better vision despite the fact that all of these children required one or more reoperations.
- IOL implantation appeared to be safe and effective in children younger than 2 years of age. It may aid amblyopia treatment by eliminating periods of uncorrected aphakia.


Trivedi RH et al. Opacification of the visual axis after cataract surgery and single acrylic intraocular lens implantation in the first year of life. JAAPoS 2004;8:156-164


Advantages IOL vs Aphakia

Complications

- Data indicate that reoperations are more common with infantile IOL implantation but other complications such as strabismus are less common when compared with primary aphakia.
- Patients with IOLs are more likely to require surgical removal of Elschnig pearls that obscure the visual axis.


Trivedi RH et al. Opacification of the visual axis after cataract surgery and single acrylic intraocular lens implantation in the first year of life. JAAPPOS 2004, 8:156-164
Advantages IOL vs Aphakia

Glaucoma

- Glaucoma and other complications appear to occur more frequently in patients operated on before 6 months of age when left aphakic.
- Decreased incidence of open-angle glaucoma among eyes rendered primarily pseudophakic.

Michelle M. Ariss et al. Comparison of complications of cataract extraction with and without IOL implantation in children younger than 1 year of age. JAAPOS, Volume 13, Number 1, February 2009
CL related problems

- Poor compliance was the most commonly identified problem with CL correction.
- Contributing factors include the high cost of CLs, the inability of children to discern a visual benefit from CL use if the fellow eye has normal vision, and the difficulty of caregivers inserting and removing CLs in a small child.
- Loss of CLs was cited as another important problem.

Disadvantages of IOL vs Aphakia

- Careful pre-op planning
- Technical difficulty of surgery
- Demanding post-op follow-up
Biometry

- SRK-T / SRK II formulas are used for IOL power calculation
- Hoffer-Q, Holladay also give acceptable results in children
- All formulas are less accurate in:
  - children < 36 months
  - in eyes < 20mm AL


The IOL power was calculated based on the Holladay 1 formula targeting an 8 diopter (D) undercorrection for infants aged 4 to 6 weeks and a 6 D undercorrection for infants older than 6 weeks.

Myopic shift

- Although the rate of axial growth has been found to be slower in pseudophakic compared to aphakic eyes, there is a greater myopic shift in pseudophakic eyes due to the relative position of the IOL as the eye grows.

In aphakic eyes (age 3-20 months): 9.7D
In pseudophakic eyes (age 3-12 months): 4.8D
In pseudophakic eyes (age 1-12 months): 5.3D


Myopic shift

Desired refractive outcome:

- Infants < 10 weeks: 8-9D hyperopia
- At age 12 months: 4D hyperopia
- At age 24 months: 2D hyperopia
- From age 36 months: 1D hyperopia

Primary IOL implantation

- Acrylic IOLs are achieving greater acceptance over PMMA for use in infants as they appear to be more biocompatible and incite less inflammation.
- If sulcus placement is necessary use a rigid PMMA IOL or a 3-piece foldable IOL and optic capture through the anterior or combined anterior/posterior CCC should be attempted.

Primary IOL implantation

- In the bag
- Optic capture through the post CCC
- Bag in the IOL
- Sulcus (with optic capture)
  uveal contact and inadequate centration are causes for concern
- Multifocal & accommodating IOLs?

Timing of surgery

- Unilateral congenital cataract surgery within 6 weeks of birth produces the best outcomes. The equivalent 'latent' period for bilateral visual deprivation may be longer at around 10 weeks.
- The incidence of poor visual outcomes increases if cataract surgery is delayed beyond 10 weeks of age.
- The latent period for fixation stability may be as short as 3 weeks.
- The absence of preoperative nystagmus is a better predictor of a good visual outcome than the age at surgery.

Timing of surgery

- An association between very early surgery for congenital cataracts and a greater risk of glaucoma has been reported.
- Infants who have IOLs implanted when they are younger than 1 month of age have a greater risk for glaucoma as well as secondary membranes.

Post-op management

- Intracameral 0.1 cc of a 50% solution of Moxifloxacin (Vigamox)
- Intracameral Cefuroxime 1 mg in 0.1 mL
- Intracameral 2 mg (0.05 cc) of Triamcinolone (Triesence)
  The Triamcinolone crystals are visible in the AC for 5-7 days and help control the aggressive early inflammation
- Subconjunctival steroids

- TASS, toxicity, dilution errors, off label use

Secondary IOL implantation

- Recommended when traditional spectacle or contact lens correction of aphakia is unsuccessful.
- Decision & technical success depend mainly on how much capsular support was left behind at the time of primary cataract surgery.
- A 4.5-mm central posterior and anterior capsulectomy usually is adequate to prevent re-opacification of the visual axis and also assures an adequate rim of support when secondary IOL implantation is elected.
“In the bag” IOL fixation

- Sufficient capsular support.
- Most desirable position, between the ALC and the PC when they can be separated.
- Viscodissection and meticulous clearing of all posterior synechiae is mandatory.
- Sequestrates the IOL from the highly reactive uveal tissues.
- Maintains optimum centration.

Simultaneous bilateral surgery?

- Simultaneous surgery in congenital bilateral cataract may be necessary and preferable in those patients considered at high anesthetic risk. In effect, the risks of possible complications following two anesthesias are reduced, as is the risk of developing deprivation amblyopia.

- Simultaneous bilateral congenital cataract surgery with IOL implantation is safe and efficient.

References:


Paediatric cataract: IOL vs aphakia

What did recent studies (RCT) show?
The Infant Aphakia Treatment Study

Design and Clinical Measures at Enrollment

The Infant Aphakia Treatment Study Group

**Objective:** To compare the use of contact lenses and intraocular lenses (IOLs) for the optical correction of unilateral aphakia during infancy.

**Methods:** In a randomized, multicenter (12 sites) clinical trial, 114 infants with unilateral congenital cataracts were assigned to undergo cataract surgery with or without IOL implantation. Children randomized to IOL treatment had their residual refractive error corrected with spectacles. Children randomized to no IOL treatment had their aphakia treated with a contact lens.

**Main Outcome Measures:** Grating acuity at 12 months of age and HOTV visual acuity at 41/2 years of age.

**Application to Clinical Practice:** This study should determine whether either treatment for an infant with a visually significant unilateral congenital cataract results in a better visual outcome.

**Results:** Enrollment began December 23, 2004, and was completed January 16, 2009. The median age at the time of cataract surgery was 1.8 months. Fifty patients were 4 to 6 weeks of age at the time of enrollment; 32, 7 weeks to 3 months of age; and the remaining 32, more than 3 to less than 7 months of age. Fifty-seven children were randomized to each treatment group. Eyes with cataracts had shorter axial lengths and steeper corneas on average than the fellow eyes.

**Conclusions:** The optimal optical treatment of aphakia in infants is unknown. However, the Infant Aphakia Treatment Study was designed to provide empirical evidence of whether optical treatment with an IOL or a contact lens after unilateral cataract surgery during infancy is associated with a better visual outcome.

**Trial Registration:** clinicaltrials.gov Identifier: NCT00212134

<table>
<thead>
<tr>
<th><strong>Table 1. IATS Inclusion/Exclusion Criteria</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Inclusion Criteria</strong></td>
</tr>
<tr>
<td>1. Visually significant congenital cataract (≥3 mm central opacity) in 1 eye</td>
</tr>
<tr>
<td>2. Aged 28 d to &lt;7 mo (&lt;210 d) at time of cataract surgery</td>
</tr>
<tr>
<td>3. At least 41 postconceptional weeks at time of cataract surgery</td>
</tr>
<tr>
<td>4. Written informed consent provided by parent or legal guardian agreeing that patient could be randomized in operating room if EUA confirmed that patient was eligible for study</td>
</tr>
<tr>
<td><strong>Exclusion Criteria</strong></td>
</tr>
<tr>
<td>1. Cataract was known to be due to trauma or acquired as adverse effect of treatment administered postnatally</td>
</tr>
<tr>
<td>2. Corneal diameter &lt;9 mm</td>
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<tr>
<td>3. Intraocular pressure ≥25 mm Hg</td>
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<tr>
<td>4. PFV causing stretching of the ciliary processes or tractional detachment of retina</td>
</tr>
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<td>5. Active uveitis or signs suggestive of previous episode of uveitis</td>
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<tr>
<td>6. Child was product of preterm pregnancy (&lt;36-wk gestational age)</td>
</tr>
<tr>
<td>7. Retinal disease that may limit visual potential of eye</td>
</tr>
<tr>
<td>8. Previous intraocular surgery</td>
</tr>
<tr>
<td>9. Optic nerve disease that may limit visual potential of eye</td>
</tr>
<tr>
<td>10. Fellow eye had ocular disease that might reduce its visual potential</td>
</tr>
<tr>
<td>11. Child had medical condition that might interfere with visual acuity testing at age 12 mo or 4½ y</td>
</tr>
<tr>
<td>12. Child was not able to return to IATS clinical center for regular follow-up examinations</td>
</tr>
</tbody>
</table>
A Randomized Clinical Trial Comparing Contact Lens With Intraocular Lens Correction of Monocular Aphakia During Infancy

Grating Acuity and Adverse Events at Age 1 Year

The Infant Aphakia Treatment Study Group

Objective: To compare the visual outcomes and adverse events of contact lens with primary intraocular lens (IOL) correction of monocular aphakia during infancy.

Methods: In a randomized, multicenter (12 sites) clinical trial, 114 infants with a unilateral congenital cataract were assigned to undergo cataract surgery between 1 to 6 months of age either with or without primary IOL implantation. Contact lenses were used to correct aphakia in patients who did not receive IOLs. Grating visual acuity was tested at 1 year of age by a masked traveling examiner.

Main Outcome Measure: Grating visual acuity at 1 year of age.

Results: The median logMAR visual acuity was not significantly different between the treated eyes in the 2 groups (contact lens group, 0.60, IOL group, 0.97; \( P = .19 \)). More patients in the IOL group underwent 1 or more additional intraocular operations than patients in the contact lens group (63% vs 12%; \( P < .001 \)). Most of these additional operations were performed to clear lens repopulation and pupillary membranes from the visual axis.

Conclusions: There was no statistically significant difference in grading visual acuity at age 1 year between the IOL and contact lens groups; however, additional intraocular operations were performed more frequently in the IOL group.

Application to Clinical Practice: Until longer-term follow-up data are available, caution should be exercised when performing IOL implantation in children aged 6 months or younger given the higher incidence of adverse events and the absence of an improved short-term visual outcome compared with contact lens use.

Trial Registration: clinicaltrials.gov Identifier: NCT00212134

Complications in the First 5 Years Following Cataract Surgery in Infants With and Without Intraocular Lens Implantation in the Infant Aphakia Treatment Study

DAVID A. PLAGER, MICHAEL J. LYNN, EDWARD G. BUCKLEY, M. EDWARD WILSON, AND SCOTT R. LAMBERT, FOR THE INFANT APHAKIA TREATMENT STUDY GROUP

• PURPOSE: To compare rates and severity of complications between infants undergoing cataract surgery with and without intraocular lens (IOL) implantation.
• DESIGN: Prospective randomized clinical trial.
• METHODS: A total of 114 infants were enrolled in the Infant Aphakia Treatment Study, a randomized, multicenter (12) clinical trial comparing the treatment of unilateral aphakia in patients under 7 months of age with a primary IOL implant or contact lens. The rate, character, and severity of intraoperative complications, adverse events, and additional intraocular surgeries during the first 5 postoperative years in the 2 groups were examined.
• RESULTS: There were more patients with intraoperative complications (28% vs 11%, P = .031), adverse events (81% vs 56%, P = .008), and more additional intraocular surgeries (72% vs 16%, P < .0001) in the IOL group than in the contact lens group. However, the number of patients with adverse events in the contact lens group increased (15 to 24) in postoperative years 2–5 compared to the first postoperative year, while it decreased (44 to 14) in years 2–5 compared to the first postoperative year in the IOL group. If only one half of the patients in the contact lens (aphakic) group eventually undergo secondary IOL implantation, the number of additional intraocular surgeries in the 2 groups will be approximately equal.
• CONCLUSION: The increased rate of complications, adverse events, and additional intraocular surgeries associated with IOL implantation in infants <7 months of age mitigates toward leaving babies aphakic if it is considered likely that the family will be successful with contact lens correction. (Am J Ophthalmol 2014;158: 892–898. © 2014 by Elsevier Inc. All rights reserved.)
Complications in the First 5 Years Following Cataract Surgery in Infants With and Without Intraocular Lens Implantation in the Infant Aphakia Treatment Study.

Plager DA¹, Lynn MJ², Buckley EG³, Wilson ME⁴, Lambert SR²; Infant Aphakia Treatment Study Group.

PURPOSE:
To compare rates and severity of complications between infants undergoing cataract surgery with and without intraocular lens (IOL) implantation.

DESIGN:
Prospective randomized clinical trial.

METHODS:
A total of 114 infants were enrolled in the Infant Aphakia Treatment Study, a randomized, multi-center (12) clinical trial comparing the treatment of unilateral aphakia in patients under 7 months of age with a primary IOL implant or contact lens. The rate, character, and severity of intraoperative complications, adverse events, and additional intraocular surgeries during the first 5 postoperative years in the 2 groups were examined.

RESULTS:
There were more patients with intraoperative complications (28% vs 11%, P = .031), adverse events (81% vs 56%, P = .008), and more additional intraocular surgeries (72% vs 16%, P < .0001) in the IOL group than in the contact lens group. However, the number of patients with adverse events in the contact lens group increased (15 to 24) in postoperative years 2-5 compared to the first postoperative year, while it decreased (44 to 14) in years 2-5 compared to the first postoperative year in the IOL group. If only one half of the patients in the contact lens (aphakic) group eventually undergo secondary IOL implantation, the number of additional intraocular surgeries in the 2 groups will be approximately equal.

CONCLUSION:
The increased rate of complications, adverse events, and additional intraocular surgeries associated with IOL implantation in infants <7 months of age militates toward leaving babies aphakic if it is considered likely that the family will be successful with contact lens correction.
Table 1. Intraoperative Complications With Initial Cataract Surgery by Treatment Group

<table>
<thead>
<tr>
<th>Complication</th>
<th>Contact Lens (n=57)</th>
<th>Intraocular Lens (n=57)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iris prolapse</td>
<td>2 (4)</td>
<td>12 (21)</td>
</tr>
<tr>
<td>Hyphema</td>
<td>3 (5)</td>
<td>2 (4)</td>
</tr>
<tr>
<td>Iris damage</td>
<td>1 (2)</td>
<td>3 (5)</td>
</tr>
<tr>
<td>Retained cortex</td>
<td>1 (2)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Cornea cloudy</td>
<td>1 (2)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Iris sphincterotomy</td>
<td>0</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Lens fragment in vitreous</td>
<td>0</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Rupture posterior capsule</td>
<td>0</td>
<td>1 (2)</td>
</tr>
<tr>
<td>≥1 Complications&lt;sup&gt;a&lt;/sup&gt;</td>
<td>6 (11)</td>
<td>16 (28)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Comparison of treatment groups, *P*=.03.
**Table 2. Postoperative Adverse Events by Treatment Group**

<table>
<thead>
<tr>
<th>Adverse Event</th>
<th>Contact Lens (n=57)</th>
<th>Intraocular Lens (n=57)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lens reproliferation into visual axis</td>
<td>1 (2)</td>
<td>24 (42)</td>
</tr>
<tr>
<td>Pupillary membrane</td>
<td>0</td>
<td>17 (30)</td>
</tr>
<tr>
<td>Corectopia</td>
<td>1 (2)</td>
<td>11 (19)</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>3 (5)</td>
<td>7 (12)</td>
</tr>
<tr>
<td>Glaucoma suspect</td>
<td>2 (4)</td>
<td>2 (4)</td>
</tr>
<tr>
<td>Vitreous hemorrhage</td>
<td>2 (4)</td>
<td>4 (7)</td>
</tr>
<tr>
<td>Retinal hemorrhage</td>
<td>2 (4)</td>
<td>2 (4)</td>
</tr>
<tr>
<td>Hyphema</td>
<td>1 (2)</td>
<td>3 (5)</td>
</tr>
<tr>
<td>Retained cortex</td>
<td>2 (4)</td>
<td>3 (5)</td>
</tr>
<tr>
<td>Retinal detachment</td>
<td>2 (4)</td>
<td>0</td>
</tr>
<tr>
<td>Endophthalmitis</td>
<td>1 (2)</td>
<td>0</td>
</tr>
<tr>
<td>Phthisis bulbi</td>
<td>1 (2)</td>
<td>0</td>
</tr>
<tr>
<td>Contact lens–associated</td>
<td>1 (2)</td>
<td>0</td>
</tr>
<tr>
<td>bacterial keratitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corneal abrasion</td>
<td>1 (2)</td>
<td>0</td>
</tr>
<tr>
<td>Corneal opacity due to tight contact lens</td>
<td>1 (2)</td>
<td>0</td>
</tr>
<tr>
<td>Corneal edema ≥30 days</td>
<td>0</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Capsular phimosis</td>
<td>1 (2)</td>
<td>0</td>
</tr>
<tr>
<td>Wound leak/dehiscence</td>
<td>0</td>
<td>1 (2)</td>
</tr>
<tr>
<td>≥1 Adverse events&lt;sup&gt;a&lt;/sup&gt;</td>
<td>14 (25)</td>
<td>44 (77)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Comparison of treatment groups, *P* < .001.
## Table 3. Number of Additional Intraocular Operations by Treatment Group

<table>
<thead>
<tr>
<th>No. of Additional Intraocular Operations</th>
<th>Contact Lens (n=57)</th>
<th>Intraocular Lens (n=57)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>50 (87)</td>
<td>21 (37)</td>
</tr>
<tr>
<td>1</td>
<td>5 (9)</td>
<td>26 (46)</td>
</tr>
<tr>
<td>2</td>
<td>1 (2)</td>
<td>8 (14)</td>
</tr>
<tr>
<td>3</td>
<td>1 (2)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>1 (2)</td>
</tr>
</tbody>
</table>

*Comparison of treatment groups, \( P < .001 \).*

## Table 4. Type of Additional Intraocular Operations by Treatment Group

<table>
<thead>
<tr>
<th>Surgical Procedure</th>
<th>Contact Lens (n=57)</th>
<th>Intraocular Lens (n=57)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearing visual axis opacities</td>
<td>6 (11)</td>
<td>34 (60)</td>
</tr>
<tr>
<td>Glaucoma surgery</td>
<td>1 (2)</td>
<td>4 (7)</td>
</tr>
<tr>
<td>Repair retinal detachment</td>
<td>2 (4)</td>
<td>0</td>
</tr>
<tr>
<td>Repair wound dehiscence</td>
<td>0</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Intraocular lens exchange</td>
<td>0</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Iridectomy/iridotomy</td>
<td>1 (2)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Scleral patch graft</td>
<td>0</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Lysis of vitreous wick</td>
<td>0</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Laser treatment of lattice degeneration</td>
<td>1 (2)</td>
<td>0</td>
</tr>
<tr>
<td>( \geq 1 ) Surgical procedures*</td>
<td>7 (12)</td>
<td>36 (63)</td>
</tr>
</tbody>
</table>

*Comparison of treatment groups, \( P < .001 \).*
Risks and outcomes associated with primary intraocular lens implantation in children under 2 years of age: the IoLnder2 cohort study

Ameenat Lola Solebo, Isabelle Russell-Eggitt, Philippa M Cumberland, Jugnoo S Rahi, on behalf of the British Isles Congenital Cataract Interest Group

ABSTRACT

Background/aims To investigate outcomes following cataract surgery with and without primary intraocular lens (IOL) implantation in children under 2 years of age with congenital or infantile cataract.

Method Prospective population based cohort study undertaken through the British Isles Congenital Cataract Interest Group, with systematic data collection on children undergoing surgery in UK and Ireland between January 2009 and December 2010. ORs for the association between IOL implantation and visual acuity, postoperative glaucoma and reoperation at 1 year after surgery were estimated using multivariable regression analysis to control for potential confounders.

Results Of 221 children, 56/131 with bilateral and 48/90 with unilateral cataract underwent primary IOL implantation. IOL implantation was independently associated with better visual outcome in bilateral (OR 4.6, 95% CI 1.6 to 13.1, p=0.004) but not unilateral disease. IOL use increased the odds of reoperation requiring repeat general anaesthetic (bilateral OR 5.5, p<0.01; unilateral OR 16.7, p<0.01). IOL implantation did not reduce the odds of postoperative glaucoma.

Conclusions The use of IOLs in cataract surgery in young children should be critically reassessed, particularly used in settings/communities where close, long-term follow-up is challenging. The absence of visual benefit and the lack of a previously postulated protective effect against postoperative glaucoma serve to question the value of IOLs in unilateral disease. The potential association between IOL use and better early visual outcomes in bilateral disease needs to be balanced against the risk of reoperation and exposure to additional general anaesthetics during a key period of neurodevelopment.
Risks and outcomes associated with primary intraocular lens implantation in children under 2 years of age: the IoLunder2 cohort study.

Solebo AL, Russell-Eggitt I, Cumberland PM, Rahi JS; British Isles Congenital Cataract Interest Group. Collaborators (172)

BACKGROUND/AIMS:
To investigate outcomes following cataract surgery with and without primary intraocular lens (IoL) implantation in children under 2 years of age with congenital or infantile cataract.

METHOD:
Prospective population based cohort study undertaken through the British Isles Congenital Cataract Interest Group, with systematic data collection on children undergoing surgery in UK and Ireland between January 2009 and December 2010. ORs for the association between IoL implantation and visual acuity, postoperative glaucoma and reoperation at 1 year after surgery were estimated using multivariable regression analysis to control for potential confounders.

RESULTS:
Of 221 children, 56/131 with bilateral and 48/90 with unilateral cataract underwent primary IoL implantation. IoL implantation was independently associated with better visual outcome in bilateral (OR 4.6, 95% CI 1.6 to 13.1, p=0.004) but not unilateral disease. IoL use increased the odds of reoperation requiring repeat general anaesthetic (bilateral OR 5.5, p<0.01; unilateral OR 16.7, p<0.01). IoL implantation did not reduce the odds of postoperative glaucoma.

CONCLUSIONS:
The use of IoLs in cataract surgery in young children should be critically reassessed, particularly used in settings/communities where close, long-term follow-up is challenging. The absence of visual benefit and the lack of a previously postulated protective effect against postoperative glaucoma serve to question the value of IoLs in unilateral disease. The potential association between IoL use and better early visual outcomes in bilateral disease needs to be balanced against the risk of reoperation and exposure to additional general anaesthetics during a key period of neurodevelopment.
IATS

- Is it really true?
- Was it a perfect study?
- Points of controversy:
  - Surgery
  - Post-op regime
However we must also keep in mind the difference between **efficacy** and **effectiveness**. The IATS results will represent the efficacy of the treatment.

**Efficacy (ideal conditions)** answers to the question: Is the IOL or Contact Lens treatment better for people who have been provided with contact lenses, patches and frequent communication with a clinical trials coordinator?

**Effectiveness (usual-non study conditions)** answers to the question: Is the IOL or Contact Lens treatment better for families and children to whom it is offered? The measure of effectiveness may favor a different treatment for those with limited financial resources or in those locations where contact lens or suitable IOLs are not easily obtained.
Cataract surgery in children

- Differs a lot from adult cataract surgery
- Is complex and uniquely challenging.
- The long expected life span after surgery for children deserves special consideration when surgical decisions are made.

What would you do for your child.....in Greece....?
Thank you for your attention!

44th Annual Meeting of the European Paediatric Ophthalmological Society

Date and Venue: 7-9 September 2018 Budapest, Hungary
Main topic: Imaging in paediatric ophthalmology
Local hosts: Erika Maka, Krisztina Knézy

https://www.eapos-focus.org/meetings
Disadvantages of IOL vs Aphakia

- Postoperative complications:
  - inflammation
  - posterior capsule opacification (PCO).
  - Primary capsulotomy and ant. vitrectomy reduce the risk of PCO
  - lens reproliferation into the visual axis
  - pupillary membranes
  - corectopia

Thank you for your attention!

MAIN TOPIC: “Innovations in Paediatric Ophthalmology”

41-st annual meeting
EPOS
European Paediatric Ophthalmological Society 2015

June 25-27, 2015
Corinthia Hotel St. Petersburg
Russia, St. Petersburg

http://www.epos-focus.org

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