



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.887215>Available online at: <http://www.iajps.com>**Review Article****CATARACT SURGERY IN CHILDREN-A REVIEW ARTICLE**Morteza salarzaei <sup>1</sup>, Shahram Salehi-Rad <sup>2</sup>, Ali Alidadi <sup>3</sup>, Fateme Parooei <sup>1\*</sup><sup>1</sup> Student of Medicine, Students Research Committee, Zabol University of Medical Sciences, Zabol, Iran.<sup>2</sup>Zabol University of Medical Sciences, Zabol, Iran.<sup>3</sup> Faculty of Medicine, Zahedan University of Medical Sciences, Zahedan, Iran.**Abstract:****Introduction:**

Cataract is one of the underlying causes of poor vision and blindness. Quality of life and increased longevity have led to the prevalence of cataract in developed and developing countries. Based on the results of different studies, the incidence of cataract doubles with a 10-year-increase in age after the age of 40 in Australia; so, by a rule of thumb, all people are suffering from cataract at the age of 90.

**Methodology:** In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly searched to identify the studies Cataract surgery in children. In this review, the papers published until early January 2017 that were conducted to study the Cataract surgery in children were selected. In searching for the articles, those English papers were selected that had investigated Cataract surgery in children.

**Findings:** Surgical procedure, the unique physiological response to surgery, and the improvement of visual acuity are the most common, and possible, problems with cataract surgery in children. Although cataract therapy in children requires group work, the role of surgery is undeniable in achieving desirable visual outcomes, and experience with the awareness of the differences and challenges of cataract treatment in children compared to adults is the basis of this role.

**Discussion and conclusion:**

Pre-operative eye examinations are appropriate for, and off course different in, each stage during operation, and ultimately, the post-surgical procedure and follow-up considerations in general, especially in children. An ophthalmologist's surgeon should be aware of the details of the issues as a head of the group in cataract surgery in children. Having knowledge about these differences leads to better surgical results, better vision and less complications.

**Key word:** Cataract , surgery , children

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Please cite this article in press as Fateme parooei et al, *Cataract Surgery in Children-A Review Article*, Indo Am. J. P. Sci, 2017; 4(09).

**INTRODUCTION:**

Cataract is one of the underlying causes of poor vision and blindness. Quality of life and increased longevity have led to the prevalence of cataract in developed and developing countries(1). Based on the results of different studies, the incidence of cataract doubles with a 10-year-increase in age after the age of 40 in Australia; so, by a rule of thumb, all people are suffering from cataract at the age of 90(2). Currently, 16 to 20 million people with cataract are supposed to require surgery(3). It is, also, predicted that the population of the earth will increase by 30% in the next 20 years and the number of patients with cataract would be, at least, 40 million by then(4). The common point that has been observed in all studies in developing countries is the high cost of surgery that has led to no action in some low-income areas for patients; this problem has intrigued the related authority to devise appropriate solutions in order to reduce the costs as much as possible(5). Timely surgical treatment and appropriate optic modification have significantly improved the prognosis of these patients(6). Nowadays, the common method in children, including pulmonary and congenital lesions, is lensectomy with posterior capsulotomy with or without vitrectomy; however, there is no consensus in regard with the minimum age for capsulotomy and anterior vitrectomy(7). In children below the age of 6 years, posterior capsulotomy with anterior vitrectomy is advised to prevent posterior capsule opacity, but it is different in children over the age of 6 years(8). Some studies recommend taking posterior capsules after 6 years of age and others, given the high incidence and recurrence of posterior capsule opacity and the need for high energy for laser posterior capsulotomy or posterior capsulotomy, recommend these surgeries to be conducted under the age of 16.

**METHODOLOGY:**

In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly searched to identify the studies Cataract surgery in children. In this review, the papers published until early January 2017 that were conducted to study the Cataract surgery in children were selected. In searching for the articles, those English papers were selected that had investigated Cataract surgery in children.

**FINDINGS:**

Surgical procedure, the unique physiological response to surgery, and the improvement of visual acuity are the most common, and possible, problems with cataract surgery in children(8). Although cataract therapy in children requires group work, the role of surgery is undeniable in achieving desirable visual outcomes, and

experience with the awareness of the differences and challenges of cataract treatment in children compared to adults is the basis of this role(9). The main differences between adults and children in terms of cataract treatment include diagnosis of cataract in children, assessment of children with vision-reductive cataract, and calculating the power of intraocular lens(10). The eyes of children have a shorter lateral anterior posterior axis. The size of the eye continues to grow until puberty. Clotting tissue in children is thinner, more vascular and more reactive than adults(11). This difference causes more bleeding, a greater tendency to collapse, and increased vitreous pressure along with iris prolapse during surgery. The lens is smaller in children. At birth, the lens's tropical length is 5.6 mm, which grows to 9-10 mm in size up as they grow up(12). The anterior capsule in children is thinner and more reactionary than adults and this causes more trouble with circular capsular cysts among children. Although the lens is softer in children, it has a gummy condition which makes spraying more time-consuming and more difficult, facilitated by Vitrectomy tube during surgery. The iris is more sore, vascular, and more complicated in children(13). This causes more tendency for immune response and fibrin formation. Cataract is usually denser in children, and the vitreous lobed ligament is still tight(14). This poses a posterior cavity of the posterior cavity. Anterior vitreous glands in children act as a scaffold for the growth of Fibrine membrane and cell augmentation, which leads to the opacity of the axis of vision.

**DISCUSSION AND CONCLUSION:**

The ultimate goal of cataract surgery is to clean the lens capsule from lavender and opaque material and replace it with a refractory transparent intraocular lens(15). Lens materials are soft and resilient in children. The lens material can usually be washed out by a propane Vitrectomy or rinsing. Even the embryo nucleus of cataract in children rarely requires the ultrasound of the catheter to emulsify(16). On the other hand, the lens core of the adult cannot be absorbed through the spray. Hydrodissection and Hydrodiscus are mostly used in the adults to treat cataract. Although lens cortical material in children has benchmark adhesion, they do not have a lens capsule and they can be sprayed easily(16). Nevertheless, hydrodesquene facilitates this step before removing lens material, reduces the time of cleaning the cortical material, and lowers the risk of opacity of the posterior capsule. Cataract surgery in children is not just an act on the human eye(17). Pre-operative eye examinations are appropriate for, and off course different in, each stage during operation, and ultimately, the post-surgical procedure and follow-

up considerations in general, especially in children. An ophthalmologist's surgeon should be aware of the details of the issues as a head of the group in cataract surgery in children. Having knowledge about these differences leads to better surgical results, better vision and less complications.

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