The Artisan aphakia intraocular lens in the paediatric eye

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Citation for published version (APA):

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Chapter 2

AIMS AND OUTLINE OF THIS THESIS
The aim of this thesis is to report the long-term outcome after Artisan aphakia intraocular lens (IOL) implantation in children with congenital or juvenile cataracts and children with crystalline lens dislocation due to either trauma or Marfan syndrome. The Artisan aphakia IOL is frequently used in the Netherlands. However, the Artisan aphakia lens is approached with caution by colleagues around the world, probably due to adverse results of other anterior chamber IOLs in the past. Only three papers, reporting a short follow-up time, were available on the implantation of the Artisan aphakia IOL in children \(^1\)\(^2\)\(^3\), when the current research project was started.

Between 1987 and 1999 an Artisan aphakia IOL was implanted in the eyes of a series of children in the Academic Medical Centre of Amsterdam, the Netherlands. These children were among the first to receive the Artisan aphakia IOL, which provided the opportunity to study the long-term outcome of this IOL in the paediatric eye. It is important to study the long-term outcome after surgery on infants and children, as these young patients have a long mean life expectancy, and complications sometimes only arise years after the treatment has taken place. The aim was to report on the clinical outcome of the Artisan aphakia IOL in terms of visual/functional outcome, complications of surgery and IOL related problems, and on the long-term outcome in terms of the corneal endothelium. To study the results in detail, the patients were divided in series, according to the indication for surgery.

Also included in this thesis is a study on the axial eye length growth, a basic parameter related to the refractive state of the eye after paediatric cataract surgery. Paediatric cataract surgeons often have to deal with a wide range in refractive outcome. In Chapter 3 the question of whether the wide range in refractive outcome is the result of altered growth in eyes that underwent cataract surgery is addressed. In Chapter 4 the long-term clinical outcome after unilateral Artisan aphakia IOL implantation for traumatic aphakia in five children is reported. In Chapter 5 a special indication for the use of the Artisan IOL is presented. A custom-made Artisan Iris Reconstruction IOL with a coloured iris diaphragm was implanted in five eyes of children after extensive anterior segment trauma. Chapter 6 describes six patients with unilateral traumatic cataracts and three patients with unilateral juvenile cataracts. To study the long-term endothelial consequences, the endothelial cell density of the operated eyes was compared to the endothelial cell density of the non-operated fellow eyes in these nine patients. In Chapter 7 the long-term endothelial outcome of the 20 eyes of ten patients with Artisan aphakia IOL implantation after surgery for bilateral congenital or juvenile cataracts is reported. Chapter 8 presents the clinical course and the long-term outcome of the corneal endothelium in four eyes of two paediatric patients with Marfan syndrome and bilateral Artisan aphakia IOL implantation after crystalline lens dislocation, and compares the results with a control group of 29 non-operated eyes of 15 Marfan patients.
REFERENCES