Clinical Course and Outcome in Pediatric Idiopathic Chronic Anterior Uveitis

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• PURPOSE: To examine the clinical course and outcome in children with idiopathic chronic anterior uveitis (iCAU), and to compare the results with those of age-matched children with juvenile idiopathic arthritis–associated uveitis (JIA-U).
• DESIGN: Retrospective cohort study.
• METHODS: Data regarding ocular complications, visual acuity, and systemic treatment were retrospectively collected for 2 patient groups that were matched regarding age and year of uveitis diagnosis. Outcome was evaluated using survival analysis.
• RESULTS: The iCAU and JIA-U groups included 48 patients with 83 affected eyes and 48 patients with 73 affected eyes, respectively. Multivariate analyses showed that iCAU was associated with a higher prevalence of posterior synechiae (adjusted hazard rate [aHR] = 3.63; $P < .001$) and cataract surgery (aHR = 2.90; $P = .006$). Baseline visual acuity was worse in the iCAU group compared to the JIA-U group (20/25 vs 20/20, respectively; $P < .001$), but improved in the iCAU group after 5 years (20/20 vs 20/20, respectively; $P = .052$). At the 5-year follow-up, the younger children with iCAU (≤8 years of age at diagnosis) had a higher prevalence of posterior synechiae (aHR = 2.56; $P = .007$), secondary glaucoma (aHR = 16.0; $P = .020$), and cataract surgery (aHR = 4.79; $P = .004$) compared to older children with iCAU (≥9 years at diagnosis).
• CONCLUSIONS: Vision-threatening ocular complications are more common in children with iCAU compared to children with JIA-U, particularly in cases in which the onset of uveitis occurred at ≤8 years of age. However, the long-term vision of these children can be improved with adequate treatment. (Am J Ophthalmol 2022;241: 198–205. © 2022 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/))

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Chronic anterior uveitis (CAU) is the most common form of uveitis in children. This inflammatory intraocular disease can follow a severe, debilitating course with vision-threatening ocular complications.[1-4] CAU can be associated with a variety of systemic conditions, among which juvenile idiopathic arthritis (JIA) is the most frequent and well studied. Up to 30% of children with JIA will eventually develop CAU.[3,5] In contrast, idiopathic CAU (iCAU) accounts for approximately 30% to 40% of pediatric anterior uveitis cases, but remains poorly understood.[1,2,4]

No clinical distinction can be made between iCAU and juvenile idiopathic arthritis–associated uveitis (JIA-U) based on ophthalmological characteristics.[6] In addition, we recently found that these 2 uveitis subtypes have shared risk alleles.[7] Therefore, it is not surprising that both the Childhood Arthritis and Rheumatology Research Alliance (CARRA) standardized consensus treatment plans for comparative effectiveness research and recent therapy recommendations indicate that iCAU and JIA-U should be treated using similar strategies.[8,9]

Currently, the initial treatment for pediatric uveitis consists of topical corticosteroids. However, long-term use of topical corticosteroids can lead to sight-threatening complications such as cataracts and/or secondary glaucoma.[1,10-14] Moreover, systemic corticosteroids can have additional adverse effects on the child's general health.[15] Therefore, patients who do not respond to initial therapy, who develop corticosteroid dependency, or who present with a severe and/or persistent disease are typically switched to immunomodulatory therapy (IMT); however, IMT can fail in 25% to 50% of cases, leading to the need for additional treatment with biological agents.[16,17]

Similar to uveitis in JIA-U, uveitis in iCAU is typically asymptomatic. In the case of JIA-U, however, routine ophthalmological screening of children with JIA can often reveal the presence of asymptomatic uveitis, and early detection and treatment can help prevent ocular complications such as cataracts, secondary glaucoma, and posterior synechiae.[18] In contrast, children with iCAU and children with JIA who develop uveitis prior to the onset of arthritis are not typically subjected to routine screening for uveitis. We therefore hypothesized that children with iCAU are more likely to present with complications compared to children with JIA-U. To test this hypothesis, we conducted a

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retrospective cohort study in which we examined the medical records of children with iCAU and children with JIA-U and compared their clinical course, visual outcome, ocular complications, and treatment. Comparing these 2 patient groups can provide important insights into whether these 2 types of CAU can be treated using similar approaches. These findings can also be used to guide the treatment of pediatric CAU.

METHODS

• **STUDY POPULATION:** In this retrospective cohort study, the clinical data of pediatric patients with iCAU and a previously reported cohort of pediatric patients with JIA-U were obtained from a similar time period (from 1997 through 2020). Patients were included if they were diagnosed with uveitis before 16 years of age and had a minimum follow-up of 6 months. The initial diagnosis of uveitis was established by a trained uveitis specialist at the Department of Ophthalmology, University Medical Center Utrecht, in accordance with the Standardization of Uveitis Nomenclature (SUN) criteria.[19] All patients with uveitis were screened by a pediatric rheumatologist, and JIA was diagnosed in accordance with the criteria established by the International League of Associations for Rheumatology.[20,21] The patients who were diagnosed with JIA were also screened for development of uveitis in accordance with the guidelines established by the American Academy of Pediatrics.[22,23] iCAU was defined as a diagnosis of uveitis in a patient for whom JIA was not documented during the study period. All patients were seen by a pediatric rheumatologist, and patients whose CAU was caused by infection, neoplasm, or trauma were excluded. The JIA-U patients were selected from a previously reported dataset[24,25] (for patients who were diagnosed with uveitis prior to 2010) and a new dataset (with patients who were diagnosed with uveitis from 2010 through 2020) and were age-matched and matched to the date of uveitis diagnosis in the iCAU cohort. The maximum time interval of the date of uveitis diagnosis between 2 matched patients was 2 years. Matching to the date of uveitis diagnosis is performed because literature demonstrates better visual outcomes in the "biologic era"[13] compared to earlier studies.[10] The study adhered to the tenets of the Declaration of Helsinki and was approved by the Medical Ethics Research Committee of the University Medical Center Utrecht (protocol number: 19/178).

• **DATA COLLECTION:** Data extracted from the patients' electronic medical records included: patient demographics, uveitis characteristics, age at onset of JIA, laboratory results for antinuclear antibody (ANA) testing, ocular complications, best-corrected visual acuity (BCVA), and anti-inflammatory therapy. The following clinical data were also extracted: posterior synechiae, band keratopathy, cataract requiring surgery, secondary glaucoma, glaucoma surgery, cystoid macular edema (CME), and papillitis. Systemic treatment with corticosteroids, IMT, and/or biological agents was also documented. Patients who received methotrexate (MTX) received a starting dose of 10 to 15 mg/m^2 per week orally or subcutaneously. Patients who were additionally treated with adalimumab received a dose of 20 mg or 40 mg (for patients weighing $<$30 kg or $\geq$30 kg, respectively) administered as a subcutaneous injection every 2 weeks, and the MTX dose was kept at 10-15 mg/m^2 per week. Prior to 2010, a grade of $\geq$1+ anterior chamber (AC) cells was used to intensify treatment in order to gain inflammatory control.[19] From 2010 and onward, additional indicators were added, including adverse effects from topical corticosteroids at a dose of $>$2 drops and/or the presence of new inflammation-related complications.[8,9] Because of difficulties objectively measuring cataract formation, we used "cataract requiring surgery" to indicate the presence of cataract. Secondary glaucoma was defined using the international consensus established by the World Glaucoma Association and the Childhood Glaucoma Research Network.[26] CME was defined as the presence of macular thickening with cyst formation visible on fundoscopy, fluorescein angiography (prior to 2003), and/or macular optical coherence tomography (OCT). Papillitis was defined as blurring of the optic disc margins visible on fundoscopy and/or the presence of optic disc hyperfluorescence on fluorescein angiography scored in accordance with the Angiography Scoring for Uveitis Working Group.[27] Visual impairment was defined as BCVA between 20/50 and 20/200, and legal blindness was defined either as BCVA $\leq$20/200 or a visual field consisting of less than 10 degrees, in accordance with the definition established by the World Health Organization (WHO).[28]

• **STUDY OUTCOMES:** The primary outcome was the difference in the number of complications between the patients with iCAU and the patients with JIA-U at the diagnosis of uveitis and after 1 and 5 years of follow-up. The secondary outcomes were the differences in visual acuity and systemic treatment between the 2 groups.

• **STATISTICAL ANALYSIS:** Descriptive statistics are used to report baseline characteristics and treatment, and were analyzed per patient. Except where indicated otherwise, data are represented as the median and interquartile range (IQR). The Pearson χ^2 or Fisher exact test was used for the univariate analysis of categorical variables to test for differences between the 2 groups. The Wilcoxon rank-sum test was used for medians. Snellen BCVA was converted to the logarithm of minimal angle of resolution (logMAR) for statistical analysis and converted back to Snellen BCVA for data presentation. Statistical analysis of ocular complications and BCVA were performed "by eye", including only affected eyes with 5-year follow-up data, with correction

TABLE 1. General Patient Characteristics of Study Cohorts

Patient Characteristic	Type of CAU		
	iCAU	JIA-U	*P* Value
Total no. of patients	48	48	
Total no. of eyes	83	73	
Bilateral disease, n (%)	35 (73)	25 (52)	.058[a]
Male sex, n (%)	14 (29)	15 (31)	1[a]
ANA-seropositive, n (%)	30 (63)	37 (77)	.171[a]
Age, y, at uveitis diagnosis, median (IQR)	7.8 (5.9-11.1)	7.8 (5.8-9.5)	.818[b]
Follow-up time, y, median (IQR)	5.0 (2.5-8.4)	6.1 (3.5-9.0)	.524[b]

ANA = antinuclear antibodies; CAU = chronic anterior uveitis; iCAU, idiopathic CAU; IQR = interquartile range; JIA-U = juvenile idiopathic arthritis–associated uveitis.

[a]Pearson χ^2 test.

[b]Wilcoxon rank-sum test.

for paired eyes. A generalized estimating equation (GEE) was used to adjust for the correlation between 2 eyes in patients with bilateral disease (paired eyes).[29] Cox proportional hazard regression was applied in multivariate analyses, including all affected eyes with a correction of standard error with clustering using a robust method.[30] Differences with a *P* value of less than .05 were considered significant. All tests were 2-tailed, and all statistical analyses were performed using RStudio software version 4.0.3 (RStudio Inc, Boston, Massachusetts, USA).

RESULTS

• **GENERAL CHARACTERISTICS:** A total of 48 patients with iCAU (with 83 affected eyes) and 48 age-matched patients with JIA-U (with 73 affected eyes) were included in our analysis. As shown in Table 1, the 2 groups did not differ significantly with respect to general patient characteristics.

• **OCULAR COMPLICATIONS:** The number and percentage of ocular complications reported at the diagnosis of uveitis and after 1 and 5 years of follow-up are summarized in Table 2. At diagnosis, the patients in the iCAU group had a generally more complicated presentation compared to the JIA-U group, with significant differences in posterior synechiae (45% vs 14%, respectively; $P < .001$) and band keratopathy (19% vs 7%, respectively; $P < .05$). At 5 years and after adjusting for the correlation of paired eyes, the patients in the iCAU group had a higher prevalence of posterior synechiae (68% vs 31%; $P = .002$) and a higher prevalence of cataract requiring surgery (51% vs 20%; $P = .01$); we found no other differences between the 2 groups with respect to complications at the 5-year follow-up.

• **COX REGRESSION ANALYSIS:** Our analysis revealed that iCAU is an independent risk factor for the need for cataract surgery (adjusted hazard ratio [aHR] = 2.90; 95% CI = 1.36-6.17; $P = .006$) and for the development of posterior synechiae (aHR = 3.63; 95% CI = 2.03-6.50; $P < .001$), even after we adjusted for sex, ANA seropositivity, type of anterior uveitis (iCAU or JIA-U), and paired eyes (Supplemental Table S1). After adjusting for the other factors, we also found that an older age at diagnosis of uveitis was associated with a lower risk of cataract surgery (aHR = 0.82; 95% CI = 0.70-0.96; $P = .013$), glaucoma surgery (aHR = 0.77; 95% CI = 0.64-0.93; $P = .006$), and posterior synechiae (aHR = 0.88; 95% CI = 0.81-0.97; $P = .006$).

• **VISUAL OUTCOME:** At the diagnosis of uveitis, BCVA was poorer in the iCAU group compared to the JIA-U group (20/25 vs 20/20, respectively; $P < .001$ after correcting for paired eyes). We also compared the percentage of eyes that were either legally blind or visually impaired as defined by the WHO[28] and found no significant difference between groups both at baseline and after 5 years (Table 3). Two of the children in the iCAU group and 1 child in the JIA-U group were treated for amblyopia during the follow-up period, and visual acuity improved slightly (from 20/125 to 20/50) for 2 of these children; however, both of these children developed ocular complications that compromised their vision, and therefore treatment for amblyopia was terminated.

• **TREATMENT:** Treatment with systemic corticosteroids, IMT, and/or biological agents is summarized for the 2 groups in Table 4. At the time of their uveitis diagnosis, 19% of the children with JIA-U were already being treated with MTX for arthritis; 3 of these 9 children were also being treated with adalimumab. At 5 years, fewer patients in the iCAU group were being treated with MTX compared to the JIA-U

TABLE 2. Cumulative Prevalence of Ocular Complications at Diagnosis of Uveitis and After 1 and 5 Years of Follow-up

		Type of CAU		
	Complication	iCAU	JIA-U	*P* Value
At	No. of eyes	83	73	
Diagnosis	No complications	44 (53)	57 (78)	.001[a]
	Posterior synechiae, n (%)	37 (45)	10 (14)	<.001[a]
	Band keratopathy, n (%)	16 (19)	5 (7)	.432[a]
	Cataract surgery, n (%)	0	0	NA
	Secondary glaucoma, n (%)	1 (1)	1 (1)	.927[b]
	Glaucoma surgery, n (%)	0	1 (1)	.468[b]
	CME, n (%)	3 (4)	4 (5)	.940[b]
	Papillitis, n (%)	7 (8)	6 (8)	.829[a]
After	No. of eyes	79	71	
1	No complications	39 (49)	39 (55)	.605[a]
y	Posterior synechiae, n (%)	42 (53)	14 (20)	<.001[a]
of	Band keratopathy, n (%)	18 (23)	7 (10)	.393[a]
Follow-	Cataract surgery, n (%)	11 (14)	5 (7)	.046[a]
up	Secondary glaucoma, n (%)	4 (5)	1 (1)	.573[b]
	Glaucoma surgery, n (%)	1 (1)	3 (4)	.680[b]
	CME, n (%)	6 (8)	7 (10)	.979[b]
	Papillitis, n (%)	8 (10)	9 (13)	.751[a]
After	No. of eyes	41	51	
5	No complications	14 (34)	20 (39)	.525[a]
y	Posterior synechiae, n (%)	28 (68)	16 (31)	.002[a]
of	Band keratopathy, n (%)	14 (34)	11 (22)	.236[a]
Follow-	Cataract surgery, n (%)	21 (51)	10 (20)	.012[a]
up	Secondary glaucoma, n (%)	12 (29)	10 (20)	.494[a]
	Glaucoma surgery, n (%)	13 (32)	12 (24)	.731[a]
	CME, n (%)	8 (20)	8 (16)	.982[a]
	Papillitis, n (%)	10 (24)	12 (20)	.951[a]

CAU = chronic anterior uveitis; CME = cystoid macular edema; iCAU, idiopathic CAU; JIA-U = juvenile idiopathic arthritis–associated uveitis; NA = not applicable.

[a] Pearson χ^2 test with Yates continuity correction.

[b] Fisher exact test.Analysis performed "by eye" and adjusted for correlation of paired eyes.

TABLE 3. Snellen BCVA and Categorized Visual Outcomes

		Type of CAU		
	Visual Outcome	iCAU	JIA-U	*P* Value
At	No. of eyes	49	43	
Diagnosis	BCVA, median (range)	20/25 (20/14-20/6600)	20/20 (20/14-20/1000)	<.001[a]
	≤20/200, n (%)	5 (10)	2 (5)	.646[b]
	20/100-20/50, n (%)	3 (6)	2 (5)	
	≥20/40, n (%)	41 (84)	39 (61)	
After	No. of eyes	35	45	
5	BCVA, median (range)	20/20 (20/14-20/100)	20/20 (20/14-20/66)	.052[a]
y	≤20/200, n (%)	0	0	.314[b]
of	20/100-20/50, n (%)	3 (9)	1 (2)	
Follow-	≥20/40, n (%)	32 (91)	44 (98)	

BCVA = best-corrected visual acuity; CAU = chronic anterior uveitis; iCAU = idiopathic CAU; JIA-U = juvenile idiopathic arthritis–associated uveitis.

[a] Wilcoxon rank-sum test.

[b] Fisher exact test.Analysis performed "by eye" and adjusted for correlation of paired eyes.

TABLE 4. Treatment With Systemic Corticosteroids, Immunomodulatory Therapy, and/or Biological Agents at Diagnosis and After 5 Years of Follow-up

		Type of CAU		
	Treatment	iCAU	JIA-U	*P* Value
At	No. of patients	48	48	
Diagnosis	Systemic corticosteroids, n (%)	0	0	NA
	Methotrexate, n (%)	0	9 (19)	.003[b]
	Anti–TNF-α therapy			
	Adalimumab, n (%)	0	3 (6)	.242[b]
	Infliximab, n (%)	0	0	NA
After	No. of patients	25	31	
5	Systemic corticosteroids, n (%)	5 (20)	11 (35)	.245[b]
y	Methotrexate, n (%)	19 (76)	30 (97)	.037[b]
of	Anti–TNF-α therapy			
Follow-	Adalimumab, n (%)	7 (24)	13 (42)	.423[a]
up	Infliximab, n (%)	0	2 (6)	.497[b]

TNF-α = tumor necrosis factor–alpha, CAU = chronic anterior uveitis, iCAU, idiopathic CAU, JIA = juvenile idiopathic arthritis–associated uveitis; NA = not applicable.

[a]Pearson's χ^2 test with Yates' continuity correction.

[b]Fisher exact test.

group (76% vs 97%, respectively; $P = .037$); no other significant differences were found between the 2 groups with respect to treatment at 5 years. We also found no significant difference between the 2 groups with respect to the interval between diagnosis and the start of MTX, with a median interval in the iCAU and JIA-U groups of 7.8 and 1.5 months, respectively ($P = .181$). Similarly, we found no significant difference with respect to the interval between diagnosis and the start of IMT (3.0 vs 2.9 years for the iCAU and JIA-U groups, respectively; $P = .161$).

• **CLINICAL COURSE OF PEDIATRIC ICAU BASED ON PATIENT AGE:** Finally, we compared clinical outcome between the younger children with iCAU (diagnosed at ≤8 years of age) and the relatively older children with iCAU (diagnosed at ≥9 years of age); the prevalence of ocular complications is summarized in Supplemental Table S2. We found that at the time of diagnosis, visual acuity was significantly worse in the younger group compared to the older group (median BCVA was 20/32 vs 20/20, respectively; $P < .001$), but improved at 5 years and was the same in both age groups (20/20 vs 20/20, respectively; $P = .982$); in contrast, we found no significant difference between age groups with respect to the percentage of eyes that were either legally blind or visually impaired (Supplemental Table S3). Finally, Cox regression analysis showed that even after adjusting for possible confounders, being in the younger age group at the onset of uveitis was associated with a higher risk of posterior synechiae (aHR = 2.56; $P = .007$), secondary glaucoma (aHR = 16.3; $P = .020$), or cataract requiring surgery (aHR = 4.79; $P = .004$).

DISCUSSION

In this retrospective cohort study, we found that children with iCAU have a more complicated disease course compared to children with JIA-U; specifically, they have a higher prevalence of posterior synechiae and are more likely to require cataract surgery both at the diagnosis of uveitis and during follow-up. These findings are consistent with several previous studies.[1,10,11,13] In addition, a recent cross-sectional study found that ANA-positive pediatric patients with idiopathic anterior uveitis typically present with more complications compared to patients with JIA-U at the onset of uveitis.[6] In additional analyses, we also compared the iCAU ANA-positive subgroup with the JIA-U ANA-positive subgroup and found results similar to those of the total group analyses. However, we found no significant differences between the iCAU ANA-negative subgroup and the JIA-U ANA-negative subgroup (data not shown), although we cannot exclude the possibility that this may be due to insufficient power, as relatively fewer patients were ANA negative in both groups.

Interestingly, we found that being younger (≤8 years of age) at diagnosis was an additional risk factor for ocular complications in the iCAU group. Younger age at the onset of uveitis was also a prognostic factor associated with more

severe uveitis in patients with JIA. In contrast, male sex is not a conclusive risk factor for visual prognosis,[1,18,24,25,31] nor was it identified as a risk factor in our iCAU cohort.

Our finding that children with iCAU are more likely to need cataract surgery compared to children with JIA-U is to be expected, given that the presence of posterior synechiae and band keratopathy at the onset of uveitis are known risk factors for cataract development,[18,32,33] and these risk factors were more common among the iCAU cohort compared to the JIA-U cohort. Cataract surgery in an eye with uveitis is a challenging procedure with potential risks to vision, particularly in young patients[34]; however, when performed in accordance with current guidelines—including extreme care during the procedure and the use of perioperative anti-inflammatory prophylaxis—the outcome is usually good and has improved significantly in recent decades.[35-38]

Glaucoma is the most common cause of blindness among children with JIA-U.[11] Moreover, secondary glaucoma is extremely difficult to manage—particularly in young children—with a high risk of severe, irreversible visually impairment.[39,40] In our study, we found that secondary glaucoma was equally common in the 2 patient groups, occurring in 20% to 29% of patients at 5 years. Therefore, clinicians should monitor the occurrence of glaucoma in children with CAU—regardless of the underlying etiology—in order to minimize vision loss.

The higher prevalence of ocular complications at the diagnosis of uveitis in the iCAU group compared to the JIA-U group is likely related to the absence of screening in iCAU and the asymptomatic nature of this form of uveitis. Children diagnosed with JIA undergo regular ophthalmologic screening based on guidelines established by the American Academy of Pediatrics[22,23]; in contrast, children with iCAU do not have the possibility for screening prior to the onset of symptoms associated with ocular complications. Interestingly, up to 10% of children with JIA develop uveitis prior to arthritis[41]; we found that this subgroup of patients with JIA-U had baseline conditions similar to those of the patients with iCAU, as well as similar outcome with respect to ocular complications, visual acuity, and systemic treatment (data not shown).

Despite the differences in vision-threatening ocular complications between the 2 groups, long-term vision remained good and did not differ significantly between groups. At the diagnosis of uveitis, we found that visual acuity was significantly worse among the children with iCAU. However, even in this group, median visual acuity at diagnosis was defined as "good" based on the WHO definition[28]; thus, the statistically significant difference in visual acuity between groups may not necessarily be clinically significant, particularly given that we found no difference between groups with respect to the percentage of visual impaired or legally blind eyes. Measuring visual acuity can be challenging in young children, as their limited ability to cooperate and concentrate can influence the results.[42,43] These factors likely contributed to the differences in baseline visual acuity that we found between the younger and older age groups in the iCAU cohort. In our study, BCVA was measured in young children by specialized orthoptists, which may have led to more accurate BCVA values.

Previous studies found that the presence of ocular complications at the onset of uveitis is associated with poor visual outcome.[10,11] Nevertheless, a previous retrospective cohort study found that the differences in visual outcome between JIA-U and idiopathic noninfectious uveitis were not statistically significant.[13] These results are also consistent with the previously finding of no difference in visual acuity between groups after 2 years of follow-up.[6]

Nearly 20% of the children with JIA-U developed uveitis while undergoing treatment with MTX for their arthritis. MTX is the drug of choice in this population because of its efficacy and safety profile.[8,9] Indeed, during the follow-up period, approximately three-fourths of the patients with iCAU and nearly all of the patients with JIA-U received MTX. However, up to 40% of patients may also require a biological agent to control the inflammation, with adalimumab as the drug of choice.[8,9] During follow-up, we found no significant difference in treatment (other than the difference in MTX), which is consistent with recent studies and published guidelines.[6,8,9]

A strength of our study is that all data were collected in a single tertiary care center for pediatric uveitis in the Netherlands, with relatively long follow-up data and uniform management practices, thus resulting in a relatively large sample size. On the other hand, our study had several limitations that warrant discussion. First, the study was retrospective. Second, we were unable to analyze the collected data regarding topical corticosteroids because of missing values such as the dose and duration. Third, the changing denominator makes it difficult to compare the groups at 1 and 5 years. However, we attempted to minimize these effects by performing Cox regression analyses.

In conclusion, our results indicate that vision-threatening ocular complications are relatively more common among children with iCAU compared to children with JIA-U. This difference is particularly evident at diagnosis and is more pronounced among children who are younger at the onset of uveitis. Despite these differences, however, long-term vision was similar between the children with iCAU and the children with JIA-U, and generally remained good with intensive immunomodulatory therapy. Together, these findings underscore the importance of early detection and adequate treatment in order to minimize the risk of ocular complications in children with chronic anterior uveitis, regardless of the underlying cause.

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