Incidence of uveitis and uveitis related complications in children with juvenile idiopathic arthritis: results from the Childhood Arthritis Prospective Study

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Introduction
Juvenile idiopathic arthritis (JIA) is the most prevalent inflammatory rheumatic disease in children and young people (1, 2). Uveitis, or intraocular inflammation, is the most common extra-articular manifestation of JIA. If JIA-uveitis (JIA-U) is not diagnosed early and thus left untreated, major ocular complications such as cataracts, glaucoma, and blindness can occur (1, 2, 3).

Objectives
To describe the incidence and characteristics of JIA-U among a representative inception cohort of children and young people with JIA enrolled in the Childhood Arthritis Prospective Study (CAPS).

Methods
CAPS, a prospective inception cohort study, recruited children and young people aged <16 years with newly diagnosed inflammatory arthritis across seven UK rheumatology centres between January 2001 (4, 5) and July 2019. Analysis included descriptive statistics of all children recruited from the five centres at which ophthalmic data were available. Detailed ophthalmic data were extracted from clinical records by a paediatric ophthalmologist and comprised visual acuity, date of detection of uveitis, inflammation severity at onset, ophthalmic treatment use, and the presence of and date of detection of ocular structural complications.

Results
Ophthalmic information was available for 1169 (66%) CYP with JIA recruited to CAPS, of whom 158 (14%) were identified as having uveitis. Most patients with JIA-U (N=158) were female (72%), of white ethnicity (76%), had oligoarticular JIA (58%), and had a history of a positive ANA blood test result (69%). The median time from JIA diagnosis to JIA-U diagnosis was 0.9 years [IQR: 0, 2.5] and the median age at JIA-U diagnosis was 5.7yrs [IQR: 3.7, 8.8].

Of the 158 patients reporting uveitis, 94% had anterior uveitis, with 6% having anterior and intermediate uveitis at presentation or over the disease course. Disease presented bilaterally in 107 children (68%), and of the 51 with initially unilateral disease, seven progressed to having bilateral disease. At detection of uveitis, complications (cataract, glaucoma, macular oedema, posterior synechiae, band keratopathy and or visual impairment) were present in 23 children (15%), and 36% of the remaining patients (48/135) went on to develop complications [follow up range 2-10yrs, IQR 5, 10].

Conclusion
This is the first analysis on ophthalmic data collected by the CAPS study and provides an opportunity to examine the characteristics of JIA-U in JIA patients in greater detail. Although 36% of children with uveitis developed sight-threatening complications, most JIA patients with uveitis were diagnosed prior to the onset of complications or did not develop complications.

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