Temporal trends in childhood uveitis related admissions from 2008 to 2019

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Introduction

- Uveitis that presents in childhood is a collective term for a collection of rare clinical entities which account for approximately 5-10% of all uveitis cases
- Although childhood-onset uveitis may be rarely seen, up to 60% of patients experience complications and up to 23% of patients are rendered legally blind due to uveitis that presents in childhood
- Admissions for uveitis related procedures are a good proxy measure for disease severity
- NHS England Hospital Episodes Statistics (HES) is a database that provides information on admissions, outpatient appointments and accident and emergency attendances in NHS hospitals across the 151 primary care trusts in England
- Analysis of the disease burden would also allow for clinical research to be directed towards understanding and managing the most prevalent types of childhood-onset uveitis and ensure better service planning and provision

Aims and Objectives

- Despite the potential burden of lifelong visual disability on the child, family and healthcare system, there has been no study assessing the temporal trends of admissions due to uveitis in this specific age group
- By observing the trends in paediatric uveitis over time and understanding its burden on the NHS, we can identify the most prevalent subtypes of uveitis and the most susceptible age-groups within the paediatric population
- Aim of this study is to investigate the temporal trends in the incidence of paediatric admissions for uveitis-related procedures in NHS England from 2008 to 2019

Materials and Methods

- HES data is available free of charge for any member of the public to access and we accessed the data between April 2008 and March 2019
- We analysed admissions for uveitis and juvenile arthritis-related procedures that required consultant input with a primary diagnosis of uveitis
- In order to specifically look at data on childhood-onset uveitis, we examined the patients in the 0-14 age group from 2008 to 2019 and the 0-16 age group from 2013 to 2019
- The Office for National Statistics (ONS) was used to obtain population data for children aged 16 and below in England and the population-adjusted frequencies by age group and type of uveitis were calculated
- Aggregated data was extracted onto Microsoft Excel and we used descriptive statistics to compare diagnostic incidence of the different types of uveitis across the age groups over the studied period

Results

- From April 2008 to March 2019, there were 25,122 admissions with a primary diagnosis of uveitis and children aged 14 and below accounted for 20% **(Table 1)**
- Since data on children aged 16 and below only became available from 2013-2014, admissions for with a primary diagnosis of uveitis in this age group accounted for 22% of cases from April 2013 to March 2019

Year	Total number of admissions	Children aged 14 and below		Children aged 16 and below	
		Number of admissions	Percentage of admissions, %	Number of admissions	Percentage of admissions, %
2008/09	1870	240	12.8	-	-
2009/10	1802	301	16.7	-	-
2010/11	1969	296	15	-	-
2011/12	1991	384	19.3	-	-
2012/13	2070	411	19.9	-	-
2013/14	2226	447	20.1	611	27.4
2014/15	2595	565	21.8	655	25.2
2015/16	2714	580	21.4	636	23.4
2016/17	2647	474	17.9	581	21.9
2017/18	2579	418	16.2	485	18.8
2018/19	2659	396	14.9	466	17.5

Table 1. Annual number and proportion of admissions with a uveitis-related condition as the primary admitting diagnosis in the paediatric age group

- From 2008-2009 to 2010-2011, there was no significant change in incidence amongst children aged 14 and below but subsequently the incidence rose **(Figure 2a)**
- In children aged 16 and below, there was no significant difference in the incidence of uveitis-related admissions from April 2013 to March 2015 but subsequently followed a downward trend **(Figure 2b)**

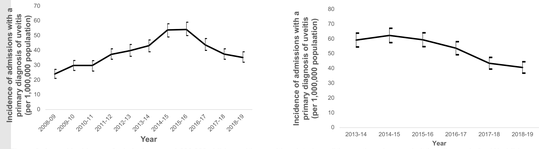


Figure 2. Annual incidence of admissions per 1,000,000 children with a uveitis-related condition as the primary admitting diagnosis for (A) children aged 0 to 14 and (B) children aged under 16, between April 2013 and March 2019 (with 95%CI).

- From March 2016, there was a steady decrease in the number of episodes seen across all age groups and this was particularly seen in children aged from 5 to 9 years old (**Figure 3**)

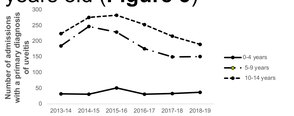


Figure 3. Annual number of admissions with a uveitis-related condition as the primary admitting diagnosis for children aged 0 to 14, stratified by age group, between April 2013 and March 2019

Conclusion

- The apparent rise in incidence from 2011 to 2015 may be due to the establishment of NHS Digital in 2012, leading to previously reported improvements in coding and completeness of all HES data
- The subsequent fall in incidence coincides with the 2015 NHS England commissioning and funding of adalimumab for paediatric uveitis
- Our findings suggest that the increased use of immunosuppression has resulted in improved outcomes for childhood onset uveitis in England