The Incidence of Uveitis in the United Kingdom 2004-2021

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BACKGROUND & AIMS

- Uveitis accounts for an estimated 10% of visual disabilities in the Western world, and an estimated 35% of patients with uveitis experience blindness or visual impairment as a consequence of the condition (1, 2).
- Uveitis can affect individuals of all ages and may be associated with various underlying systemic diseases, such as inflammatory bowel disease, ankylosing spondylitis, and psoriasis (3, 4, 5).
- Uveitis is categorised into four different subtypes depending on the affected portion of the uveal tract. Anterior uveitis, the most common subtype, specifically targets the anterior segment, which includes the iris and ciliary body (6).
- Less common subtypes, namely intermediate uveitis, posterior uveitis, and panuveitis, involve the vitreous and peripheral retina, the retina and choroid, and the entire uveal tract, respectively.
- Due to its potential for severe complications such as cataracts and glaucoma, early diagnosis and appropriate management are crucial (7).
- This study reports the incidence rates of uveitis and its subtypes in the United Kingdom from 2004 to 2021, as generated by Livingstone®.

METHODS

- Livingstone® is an online platform providing advanced analysis of routine healthcare data.
- This study was conducted by Livingstone® using the Clinical Practice Research Datalink (CPRD) GOLD and Aurum databases.
- CPRD is a nationally representative, longitudinal database containing anonymised primary care records from over 2,000 primary care practices across the United Kingdom, covering more than 60 million patients (8).
- Only patients whose data was of research-acceptable quality were included in this study.
- Patients were selected by relevant medical codes and characterised by the four subtypes and those unspecified.
- Incidence was calculated as the number of uveitis events as the numerator and the aggregated observed person-time for all eligible patients in the database as the denominator.
- Patients were required to have a minimum of 90 days registration to be defined as an incident case.
- An acute uveitis episode was defined by a duration of 90 days (9).
- The following RDG approval was granted to Human Data Sciences: 22_002078.

RESULTS

- A total of 85,528 patients with incident uveitis were included in this study, spanning from 2004 to 2021. The cohort had a mean age at diagnosis of 52.6 years (SD: 19.7), with females making up 52.3% of the sample (Table 1).

Table 1: Baseline characteristics of patients with uveitis selected from the Clinical Practice Research Datalink from 2004 to 2021.

Characteristic	All patients
Total patients	85,528
Age (years)	
Mean (SD)	52.6 (19.7)
Median (IQR)	53.0 (38.0-68.0)
Gender	
Male	40,770 (47.7%)
Female	44,758 (52.3%)
Ethnicity	
Asian	6,310 (7.4%)
Black	5,483 (6.4%)
Mixed	1,140 (1.3%)
Other	737 (0.9%)
White	33,755 (39.5%)
Missing	38,103 (44.6%)
Smoking status	
Non-	33,310 (39.0%)
Ex-	30,650 (35.8%)
Current	15,875 (18.7%)
Missing	5,693 (6.7%)
Alcohol status	
Non-	6,810 (8.0%)
Ex-	3,776 (4.4%)
Current	53,086 (62.1%)
Missing	21,856 (25.6%)
Body Mass Index (BMI), kg/m^2	
Mean (SD)	28.2 (6.3)
Median (IQR)	27.4 (24.0-31.5)
Missing (%)	52,509 (61.4%)

This study is based in part on data from the Clinical Practice Research Datalink obtained under licence from the UK Medicines and Healthcare products Regulatory Agency. The data is provided by patients and collected by the NHS as part of their care and support. All authors are employed by Human Data Sciences. Human Data Sciences funded this study and developed the Livingstone® platform.

- Overall uveitis incidence rates per 10,000 person-years increased from 5.0 in 2004 to 6.4 in 2019, the last pre-COVID year. Rates then fell sharply to 5.0 in 2020, and although they marginally increased to 5.1 in 2021, they remained near 2004 levels (Figure 1).
- Anterior uveitis reported the highest incidence rate in 2019, peaking at 4.7 per 10,000 person-years. This was followed by unspecified uveitis at 3.5, posterior and panuveitis at 0.2, and intermediate at 0.1 (Figure 1).

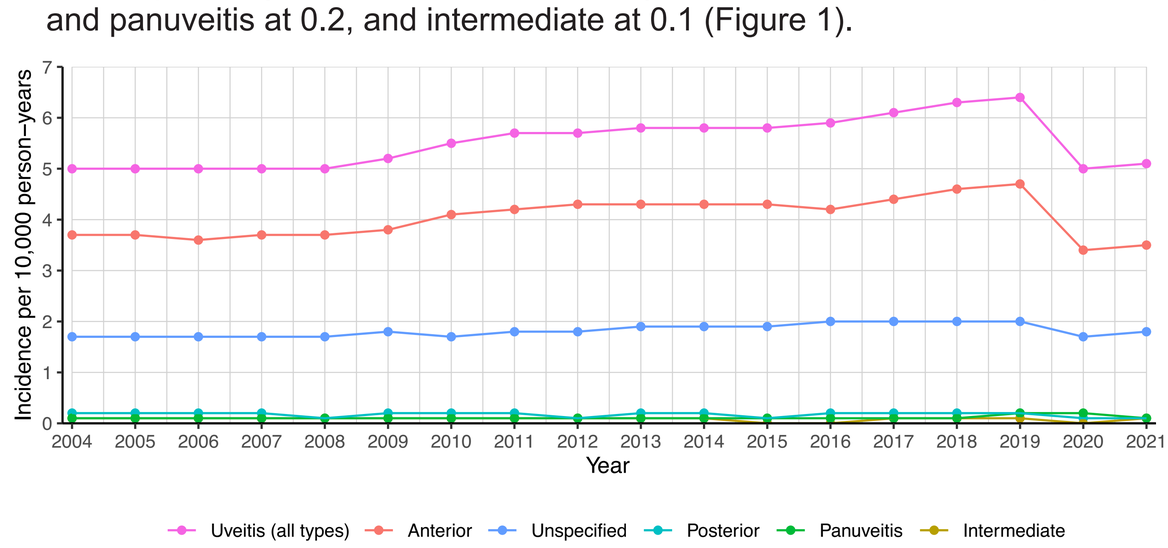

Figure 1: Incidence rates for uveitis and its subtypes from 2004 to 2021 in the Clinical Practice Research Datalink.

- Uveitis incidence rates were notably higher in older age groups, ranging from 0.18 for ages 0-4 to a peak of 11.41 for ages 75-84. The rate for those aged 85 and above was 7.79 (Figure 2).

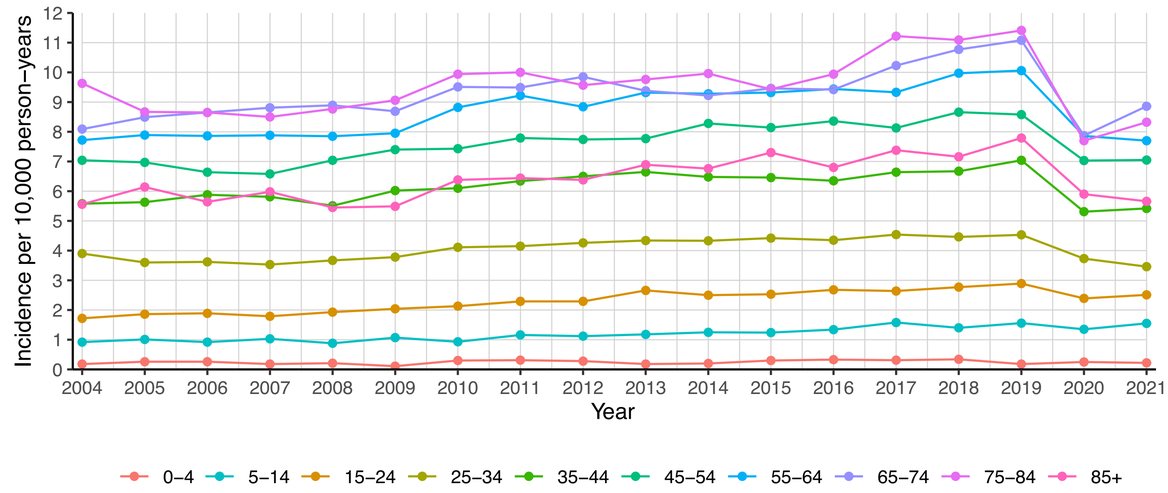

Figure 2: Incidence rates for uveitis (all types) by age group from 2004 to 2021 in the Clinical Practice Research Datalink.

- The most common comorbidities among patients with incident uveitis were hypertension (11.45%), diabetes mellitus (8.95%), cough (8.29%), other eye disorders (7.95%), and cataracts (7.82%) (Table 2).

Table 2: The most common morbidities at index date in patients with first incident uveitis.

ICD-10	Description	Patients (%)
I10	Essential (primary) hypertension	9,792 (11.5)
E14.9	Unspecified diabetes mellitus – without complications	7,657 (9.0)
R05	Cough	7,086 (8.3)
H57.8	Other specified disorders of eye and adnexa	6,803 (8.0)
H26.9	Cataract, unspecified	6,690 (7.8)

CONCLUSION

- There was an increase in the incidence of uveitis over the period 2004 to 2019, particularly anterior, unspecified, and panuveitis. This increase may reflect a growing uveitis burden, improved diagnosis, or improved data recording.
- A notable drop in diagnoses during the COVID-19 pandemic raises concern as underdiagnosis and undertreatment could potentially lead to more severe complications, such as cataracts and glaucoma.
- Livingstone® rapidly generates insights from real-world data to expedite decision making.

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