

Supplementary Material

Resource utilization among glaucoma patients in the UK treated with beta blocker and non-beta blocker adjunctive therapy: A retrospective cohort analysis

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Inclusion/Exclusion criteria:

1. Include patients with Read codes for glaucoma diagnoses were identified using the term “glau” and codes starting with F45* to ensure all possible codes were identified.
 - Codes that referred to procedures as opposed to diagnoses were then excluded, that is, codes that do not start with a capital letter (A-Z) were excluded.
 - Diagnoses codes relating to perinatal and congenital conditions were also excluded, that is, codes that start with P (Congenital anomalies) or Q (Perinatal conditions) were excluded. In addition to code: F451400 Glaucoma of childhood was also excluded.
2. Exclude patients who do not have acceptable data, that is, have not met the quality standards set by CPRD. [Most patients should meet this standard. This is included here for robustness.]
3. Exclude patients with a death date preceding their glaucoma diagnosis date.
4. Exclude patients registered in a practice that is not up to standard (UTS) at any point during the study period. [This helps ensure that the patient data used in the analysis is accurate.]
5. Exclude patients with a temporary practice registration status and have gaps in registration. [This criterion ensures that each patient is in the study once- patients included multiple times could bias results. No gaps in registration helps ensure all events are captured.]
6. Exclude patients less than 18 years old at the time of glaucoma diagnosis or if the patient has invalid age data.
7. Exclude patients with a diagnosis relating to pediatric, congenital, childhood glaucoma or glaucoma following childbirth at any time.
8. Exclude patients with less than 3 years of data availability from their glaucoma diagnosis date.
9. Exclude patients with less than 3 years of glaucoma medication use (defined as at least one prescription in each year of follow-up).
10. Exclude patients not eligible for HES linkage. [This permits the examination of hospital visits.]
11. Exclude patients without at least 1 prostaglandin prescription during the first year of follow-up. Prostaglandin is usually one of the first courses of treatment for glaucoma patients. This requirement helps to increase comparability between the treatment groups.

12. Exclude patients with any topical BB use in the first year of follow-up (following the *glaucoma diagnosis date*).

Cost Data

In the UK the costs of services and products are funded by the UK National Health Service (NHS) is funded by a direct taxation system. The unit cost of hospital and medical care are not captured individually for patients in the NHS. CPRD has identified several mechanisms to derive the direct cost of many goods and services in the NHS.

- The main source of cost data for services provided in the community is the 'Unit Costs of Health & Social Care, prepared by the Personal Social Services Research Unit (PSSRU). The volumes present unit costs for a range of activities undertaken in the community and more recently for some hospital activities. Volumes are published on an annual basis [1, 4]. However, such information has only become available in more recent years [3].
- The main source of cost data for services provided in secondary is the NHS Reference cost schedule, prepared by the Department of Health. Reference costs are based on costed Healthcare Resource Groups (HRGs). In their most basic form HRGs are groups of ICD-10 diagnoses and OPCS procedures that have similar resource implications. [2]

Comorbidities and conditions

Charlson Comorbidity Index (CCI) [5] : The Charlson comorbidity index is used to predict mortality by classifying or weighting comorbidities. Health researchers have used it extensively to measure burden of disease and case mix. Each condition corresponds to a weight (depending on the risk of dying associated with that specific comorbidity) and the sum of those weights constitutes the Charlson Comorbidity Index. Khan et al. (2010) translated the CCI for Read-coded data.

- Charlson Comorbidity Index Score (1 year pre-index).
- Any Charlson comorbidity: A variable to denote if the patient has any Charlson comorbidity, that is, where 0 corresponds to a CCI score of 0 and 1 corresponds to a CCI score of 1 or more.
- Charlson Comorbidity Index Category: 0, 1, 2 to 3 and 4+ (1 year pre-index).
- Charlson Comorbidity condition: An identifier for each CCI condition, for ex- ample, Myocardial infarction, is created to identify patients with each condition (1 year pre-index).

- Cardiovascular conditions in the 1 year pre-index and 1 year post-index period
 - Conduction disorders (1 year pre-index): Identifies patient with conduction disorders listed in the study codes at any time during the 1 year pre-index period.
 - Conduction disorders (1 year post-index): Identifies patient with conduction disorders listed in the study codes at any time during the 1 year post-index period.
 - Cardiac dysrhythmias (1 year pre-index): Identifies patient with cardiac dysrhythmias listed in the study codes at any time during the 1 year pre-index period.
 - Cardiac dysrhythmias (1 year post-index): Identifies patient with cardiac dysrhythmias listed in the study codes at any time during the 1 year post-index period.
 - Heart failure (1 year pre-index): Identifies patient with heart failure listed in the study codes at any time during the 1 year pre-index period.
 - Heart failure (1 year post-index): Identifies patient with heart failure listed in the study codes at any time during the 1 year post-index period.
 - Other ill-defined heart disease (1 year pre-index): Identifies patient with other ill-defined heart disease listed in the study codes at any time during the 1 year pre-index period.
 - Other ill-defined heart disease (1 year post-index): Identifies patient with other ill-defined heart disease listed in the study codes at any time during the 1 year post-index period.
 - Other cardiovascular disease (1 year pre-index): Identifies patient with other cardiovascular disease listed in the study codes at any time during the 1 year pre-index period.
 - Other cardiovascular disease (1 year post-index): Identifies patient with other cardiovascular disease listed in the study codes at any time during the 1 year post-index period.
 - Cardiovascular conditions 1 year pre-index: Identifies patient with any of the following conditions at any time during the 1 year pre-index period. Conduction disorders, Cardiac dysrhythmias, Heart failure, Other ill-defined heart disease and Other cardiovascular disease.
 - Cardiovascular conditions 1 year post-index: Identifies patient with any of the cardiovascular conditions listed in the study codes at any time during the 1 year post-index period. Conduction disorders, Cardiac dysrhythmias, Heart failure, Other ill-defined heart disease and Other cardiovascular disease.
- Respiratory conditions in the 1 year pre-index and in the 1 year post-index period
 - Chronic bronchitis (1 year pre-index): Identifies patient with chronic bronchitis at any time during the 1 year pre-index period.

- Chronic bronchitis (1 year post-index): Identifies patient with chronic bronchitis at any time during the 1 year post-index period.
- Emphysema (1 year pre-index): Identifies patient with emphysema at any time during the 1 year pre-index period.
- Emphysema (1 year post-index): Identifies patient with emphysema at any time during the 1 year post-index period.
- COPD (1 year pre-index): Identifies patient with COPD at any time during the 1 year pre-index period.
- COPD (1 year post-index): Identifies patient with COPD at any time during the 1 year post-index period.
- Asthma (1 year pre-index): Identifies patient with Asthma at any time during the 1 year pre-index period.
- Asthma (1 year post-index): Identifies patient with Asthma at any time during the 1 year post-index period.
- Chronic airway obstruction (NEC) (1 year pre-index): Identifies patient with chronic airway obstruction (NEC) at any time during the 1 year pre-index period.
- Chronic airway obstruction (NEC) (1 year post-index): Identifies patient with chronic airway obstruction (NEC) at any time during the 1 year post-index period.
- Other chronic lower airway disorders (1 year pre-index): Identifies patient with other chronic lower airway disorders at any time during the 1 year pre-index period.
- Other chronic lower airway disorders (1 year post-index): Identifies patient with other chronic lower airway disorders at any time during the 1 year post-index period.
- Respiratory conditions 1 year pre-index: Identifies patient with any of the following specified respiratory conditions at any time during the 1 year pre-index period: Chronic bronchitis, Emphysema, COPD, Asthma, Chronic airway obstruction not elsewhere classified (NEC) and Other chronic lower airway disorders.
- Respiratory conditions 1 year post-index: Identifies patient with any of the following specified respiratory conditions at any time during the 1 year post-index period: Chronic bronchitis, Emphysema, COPD, Asthma, Chronic airway obstruction not elsewhere classified (NEC) and Other chronic lower airway disorders.

References

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