examination and those with drug exposure >5 yrs were prioritised. An MDT pathway was established to manage anyone with signs of HCQ toxicity.

**Results:** 2,132 patients were prescribed HCQ in our county with population of 669,000. 997 patients fell under our unit’s remit. 136 patients (92% women) have been screened with mean age of 58 yrs (24-84y), 65 (48%) have RA and remaining with connective tissue diseases. Median disease duration is 10 yr (0.75-30 yrs) and median drug exposure is 10 yr (0.4-27yr). Three doses of HCQ are prescribed: 200mg daily (53%), 300mg daily (13%) and 400mg daily (34%). Ten (73%) patients were found to have abnormal results. Three were consistent with HCQ toxicity pattern and one with likely toxicity. Two of them had already developed severe sight loss. HCQ was discontinued in all these cases. Six had other incidental anomalies requiring further input.

**Conclusion:** Hydroxychloroquine is used increasingly in the treatment of autoimmune diseases with emerging role in oncology. It has a favourable safety and tolerability profile with survival benefit demonstrated in SLE. In the UK, it’s adoption has been particularly high owing to the requirement of trialling two DMARDs prior to being eligible for biologic therapy in RA and PsA. In the absence of modern retinal imaging techniques, HCQ toxicity was perhaps underestimated and hence older guidelines did not emphasise strict monitoring practice. Our preliminary data, in line with published evidence, represents a greater public health problem than previously estimated. It is clear that implementing the new guidelines not only recognises hitherto undiagnosed drug toxicity but also identifies incidental significant eye pathology which puts pressure on healthcare resources and needs robust service planning. Rheumatologists need to be aware of the potential impact requiring informed discussion with patients and perhaps a fundamental shift in prescribing behaviour to avoid this rapidly developing health concern.

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**Background:** Systemic Lupus Erythematosus (SLE) is a chronic multorgan disease with an unpredictable disease course, which requires monitoring for disease activity, treatment efficacy and comorbidity. Data on the healthcare utilization and cost of SLE, especially from Australia are scarce.

**Objectives:** To determine the healthcare utilisation and estimated costs of inpatient admissions (IP), emergency (ED) and outpatient (OPD) hospital visits and investigations for SLE patients in Western Australia (WA).

**Methods:** This is a longitudinal cohort study of SLE patients seen at a metropolitan public hospital, with ≥6 months of follow-up (n=179, 95% female; baseline age 36.2 ± 15.2 years). Electronic medical records provided data on OPD, ED and IP visits, and investigations conducted at public hospitals from January 2000 - December 2019. Direct healthcare costs were estimated from public hospital expenditure aggregates in FY2018/19.

**Results:** During a median observation period of 11.0 years (IQR 7.4, 13.5), SLE patients required 13,320 OPD visits for a median of 5.3 (IQR 3.0, 9.3) appointments per annum. The majority of OPD visits were with Rheumatology (n=1,986, 14.9%), Immunology (n=1,527, 11.5%), and allied health services (n=1,952, 14.7%), followed by Ophthalmology (n=1,385, 10.4%), maternal & fetal health (n=873, 6.6%) and Renal medicine (n=844, 6.3%). In total 143 patients (79.3%) attended ED on average of 3 times (IQR 2, 7; ED visit rate 44.0 (95%CI 41.0, 47.0) per 100 person years. Overall, 125 patients (69.8%) were hospitalised at average 3 times (IQR 2, 6), with a mean LOS of 5 days (IQR 3, 12) for an IP rate of 378 per 100 patient years (95%CI 34.8, 40.5). Only 12.8% of patients did not attend ED or IP in the public health care system. A total of 367,087 laboratory investigations were performed (median nr. of tests per patient 205 (±290) per year) across fields of haematology/biochemistry (89%), immunology (5%), microbiology (4.5%) and histopathology (<1%). Minimum estimates for direct health care cost during the study period were 25.4 million AUD (IP 11m, OPD 6.3m, ED 0.9m and investigations 9.1m) for a crude annual cost of 14,088 AUD per patient.

**Conclusion:** SLE patients have extensive healthcare utilization across a range of outpatient and inpatient services. The main direct costs for this multidisciplinary health care provision are for disease monitoring and in-hospital treatment. Based on these conservative cost estimates to which medicare cost need to be added, total costs for SLE care in WA are projected to be significantly higher than reported from Europe.
Methods:

The objective of this study was to evaluate the budget impact of introducing subcutaneous infliximab (IFX-SC) from the UK payer perspective. The budget impact analysis (BIA) was conducted to assess the financial impact of the adoption of IFX-SC. The BIA calculates the costs of treatment (drug acquisition cost and administration) for patients with rheumatoid arthritis (RA) who receive infliximab SC vs a scenario with infliximab SC to estimate the budget impact over the 5-year period, equating to 30,839 additional patients to be treated with infliximab SC in the treatment for 5 years. In the 'World With' scenario, patients receiving infliximab IV switched to SC administration at 30% in Year 1, 45% in Year 2, and remained 60% from Year 3 to 5. The drug cost of infliximab SC is assumed to be the same as that of comparator treatments. Administration cost significantly. This research describes the economic impact of introducing infliximab SC from the UK payer perspective.

Objectives:

The objectives of this study were to:

1. Estimate the budget impact of introducing IFX-SC from the UK payer perspective.
2. Assess the financial impact of the adoption of IFX-SC for patients with RA as compared to IV Infliximab.
3. Compare the outcomes of patients treated with IFX-SC vs IV Infliximab in terms of cost and administration.
4. Analyze the sensitivity of the model to changes in key parameters.

Results:

Compared to the "World Without" infliximab SC, the introduction of subcutaneous infliximab resulted in cost savings of £39.6 million in UK over a 5-year period, equating to 4,466 additional patients to be treated with infliximab SC in base case scenario. Sensitivity analysis includes dose-escalation up to 5mg/kg to reflect the real-world setting. In that scenario, the saving increases to £279.6 million over a 5-year period, equating to 30,839 additional patients to be treated with infliximab SC.

Conclusion:

Utilization of subcutaneous infliximab may lead to substantial cost savings for UK payers. Self-injection will significantly reduce the burden on healthcare delivery allowing resources to be spent elsewhere. Sensitivity analysis concluded that treatment with increased IV dosage will result in higher savings from switching patients to subcutaneous infliximab.

References:


Disclosure of Interests:

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THE NHS SCOTLAND THERAPEUTIC DRUG MONITORING SERVICE FOR BIOLOGIC MEDICINES: PRELIMINARY ANALYSIS OF UTILISATION AND CLINICAL RESULTS AT YEAR 1

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Background: Anti-tumour necrosis factor alpha (anti-TNFa) drugs infliximab (IFX) and adalimumab (ADL) are effective treatments for several rheumatic diseases. Therapeutic drug level and anti-drug antibody monitoring (TDM) has emerged as a useful tool for optimising drug effectiveness, by identifying individuals who may benefit from dose or treatment frequency adjustment, or have secondary drug failure due to immunogenicity.

Objectives: Ensuring safe and effective use of biologic medicines has been identified as a key priority for NHS Scotland. Inequity and inconsistency of access to TDM across the nation was recognised as a barrier to delivering best practice and so a nationally commissioned TDM service was proposed in January 2018 to support clinical practice, providing universal access to TDM for services treating inflammatory diseases across Scotland. Data collection and analysis of results regarding usage and clinical impact of the service were identified as key outcome measures to assess service success and sustainability.

Methods: A service webpage was developed to provide guidance on testing strategies and interpretation of TDM results (1). An automated search of clinical data and test results recorded within the clinical biochemistry electronic results management system was conducted to identify all TDM tests performed between 01/01/2018 and 31/12/2018. Descriptive analysis outcomes included the number of samples received, processed, overall testing population, service utilisation by Health Board, number and results of TDM tests performed per patient. TDM results were interpreted according to published guidance on the service webpage and comparison was made with previously published data (2).

Results: 3609 specimens were received for testing, from 13 of the 14 Scottish Health Boards. 3561 drug level (DL) tests were performed; 1786IFX, 1775 ADL. 2717 total antidrug anti-body (TABT) tests and 681 free antidrug anti-body tests (FABT) were performed according to service protocol. 2791 individuals had one or more TDM tests during the 12-month period, of whom 541 were tested twice or more (range 2-5).

Table 1. IFX & ADL DL, TABT and FABT results by category as defined in service guidance (AU/ml = Arbitrary Units/ml)

<table>
<thead>
<tr>
<th>Drug level by category</th>
<th>Supratherapeutic DL &gt; 8 mcg/ml</th>
<th>Therapeutic DL 3-8 mcg/ml</th>
<th>Sub-therapeutic DL &lt; 3 mcg/ml</th>
<th>TDM by category</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFLIXIMAB</td>
<td>Supratherapeutic DL &gt; 8 mcg/ml</td>
<td>Therapeutic DL 3-8 mcg/ml</td>
<td>Sub-therapeutic DL &lt; 3 mcg/ml</td>
<td>TDM by category</td>
</tr>
<tr>
<td>546 (36.6%)</td>
<td>738 (41.3%)</td>
<td>502 (28.1%)</td>
<td>791 (54.2%)</td>
<td>Negative (&lt;10 AU/ml)</td>
</tr>
<tr>
<td>708 (39.9%)</td>
<td>636 (35.8%)</td>
<td>431 (24.3%)</td>
<td>905 (57.9%)</td>
<td>Negative (&lt;10 AU/ml)</td>
</tr>
<tr>
<td>Supratherapeutic DL &gt; 10 mcg/ml</td>
<td>Therapeutic DL 5-10 mcg/ml</td>
<td>Sub-therapeutic DL &lt; 5 mcg/ml</td>
<td>Negative (&lt;10 AU/ml)</td>
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