Introduction Patients with severe asthma are estimated to comprise 5–10% of the total asthma population but contribute disproportionately to the overall burden of disease. A growing body of evidence exists that implicates steroid exposure in morbidity and healthcare costs among this group.

Aim This study sought to quantify the additional healthcare costs associated with steroid exposure among patients with severe asthma.

Methods Data on patients severe asthma (GINA treatment step 5 with ≥ 4 prescriptions/year oral corticosteroids, $n = 808$), was obtained from the Optimum Patient Care Research Database (OPCRD) database along with age and gender matched mild/moderate asthma patients (GINA treatment step 2/3, $n = 3975$) and non-asthmatic controls (rhinitis only, $n = 1865$). Data included details of all scheduled and unscheduled healthcare consultations and details of prescribed medicines. Data on service use were extracted for the two most recent years for which observations were available. Healthcare contacts were monetised using unit costs extracted from the Personal Social Services Research Unit's reference costs and for drugs using Prescription Cost Analysis data. All costs were expressed in their 2013 equivalents. Sensitivity analyses related to identification of staff providing specific consultations or activity, and high/low estimates based on assumptions used were produced. Mean high/low healthcare costs over two years by group were estimated and compared as were costs estimated separately for healthcare contacts and prescribed medicines.

Results As shown in Table 1 mean per patient drug, healthcare activity and combined drug and activity costs were significantly higher for the severe asthma group relative to the mild/moderate group with asthma and the non-asthma controls in both high and low cost scenarios. The mean difference in combined cost between the severe and non-asthma controls groups was between £5,031 (low cost) and £5,545 (high cost) depending on the cost scenario and £4,098 (low cost) and £4,510 (high cost) compared to the mild asthma group.

Abstract P158 Table 1 Mean (SD) per patient healthcare costs over 2 years

	Severe asthma ($n = 808$)	Mild/moderate asthma ($n = 3975$)	Non-asthma controls (rhinitis only) ($n = 1994$)
Prescribed medicines (Mean)	£3447	£972	£514
(SD)	£5606	£1619	£1178
Activity- Low cost (Mean)	£4229	£2606	£2131
(SD)	£4296	£3267	£2807
Total – Low cost (Mean)	£7676	£3578	£2645
(SD)	£7490	£3899	£3254
Activity – High cost (Mean)	£5085	£3051	£2474
(SD)	£5364	£4225	£3529
Total – High cost (Mean)	£8533	£4023	£2988
(SD)	£8206	£4791	£3924

Conclusions Patients with severe asthma matched by age and gender have significantly greater direct healthcare costs compared to patients with mild/moderate asthma and non-asthmatic subjects.

P159 THE USE OF OMALIZUMAB IN SEVERE ASTHMA IS ASSOCIATED WITH A DECLINE IN BLOOD EOSINOPHILS

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10.1136/thoraxjnl-2015-207770.296

Introduction/aim Omalizumab (Xolair) is a recombinant humanised monoclonal antibody licensed for the treatment of severe allergic asthma patients with IgE mediated disease. The mechanism of action of omalizumab is to bind to IgE preventing interaction with FCER1 (high affinity receptors) upon the surface of mast cells and basophils, thereby reducing the activation of the inflammatory cascade and associated clinical symptoms. Although blood eosinophilia is a useful measure of airway inflammation, the correlation between blood eosinophils and omalizumab treatment has not been described outside clinical trial. Therefore, our aims were to identify whether the introduction of omalizumab is associated with a change in the blood eosinophil count within our cohort of patients with severe asthma.

Methods We collected measurements of blood eosinophils in patients maintained on omalizumab for periods 12 months pre and post, and (where available) 24 months pre and post initiation of therapy. We also investigated any correlation between blood eosinophils pre and post treatment versus clinical parameters including total IgE and omalizumab dose.

Results Complete data sets including 12-month blood eosinophil data were available for 49 of our current cohort of 92 patients on treatment. The mean blood eosinophil count dropped from 0.33×10^9 cells/l (IQR 0.37) $\times 10^9$ cells/l pre-treatment to 0.22×10^9 cells/l (IQR 0.30) post treatment ($p = <0.001$).

Additionally, we widened the window to 24 months pre and post initiation of treatment, if blood eosinophil data was not available at 12 months. Data for 59 patients demonstrated similar significant reduction in mean blood eosinophil, 0.34×10^9 cells/l (IQR 0.34) pre-treatment to 0.23×10^9 cells/l (IQR 0.29) ($p = 0.003$).

No association was seen between the changes in mean blood eosinophil counts post treatment versus total monthly omalizumab dose and baseline total IgE.

Conclusion Our data demonstrates a significant reduction in blood eosinophils in patients who are receiving omalizumab treatment when comparing blood eosinophils at 12 and 24 months pre and post treatment. Future work should investigate whether this is a direct result of omalizumab therapy, due to confounding by other treatment, or a marker of improved asthma control.

P160 BONE PROTECTION IN ORAL CORTICOSTEROID DEPENDANT ASTHMATICS

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10.1136/thoraxjnl-2015-207770.297

Introduction Asthmatics dependant on oral corticosteroids are at risk of bone loss and significant increase in fracture risk at the hip and spine. Current guidelines recommend assessment of bone mineral density and the need for bone protection in any patient exposed to glucocorticoids for over three months. We