National audit on the management of bullous pemphigoid

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A national audit by the British Association of Dermatologists (BAD) based on audit standards derived from BAD clinical guidelines on the management of bullous pemphigoid (2012). The audit was undertaken through collaboration between the British Medical Dermatology Society executive, the Health Informatics sub-committee of the British Association of Dermatologists and the 2012 guideline authors.

Background and Introduction

Clinical audit support is one of the BAD's key objectives, providing data on quality standards in British dermatology. Clinical audits are important in their role to ascertain and improve the quality of care for patients.

In 2012 the BAD published guidelines on the management of bullous pemphigoid (BP) along with audit standards to aid implementation of the guidelines.

Aims and Purpose

The aim of this national audit is to evaluate current clinical practice amongst dermatologists in the UK in relation to the management of BP. This will provide information regarding compliance with audit standards and highlight any regional variation in practice.

Methodology

The BP clinical guidelines are accompanied by a clinical audit tool to support implementation. This identifies four clear audit points for assessment including, record of comorbidity, osteoporosis risk with corticosteroids, patient satisfaction and monitoring tests when on systemic medications. These standards were incorporated into an excel spreadsheet for distribution. No patient-identifiable data was requested.

The invitation to participate was circulated to the BAD membership via email with weekly reminders over an 11-week period. Members were requested to enter data for five consecutive adults with BP, per centre, who had been under hospital supervision (in part or completely) for at least 12 months. Guidance for completing the proforma was featured on the BAD website.

Results

A total of 123 responders provided data for 524 cases from 120 hospitals across 15 regions when classing non-NHS centres as a separate entity (Figure 1 and 2). No cases were excluded from the overall dataset.

This heat map of the UK shows the spread of responses providing data for the audit. The total number was 524 cases from 120 centres. Value represents intensity of activity reported by colour indicated and is a continuous scale, not a key. Of note, ten cases were from non-NHS centres. Although some of these patients may have been treated on the NHS, the centres submitting data were non-NHS and distributed across the UK, hence these were excluded from the heat map.

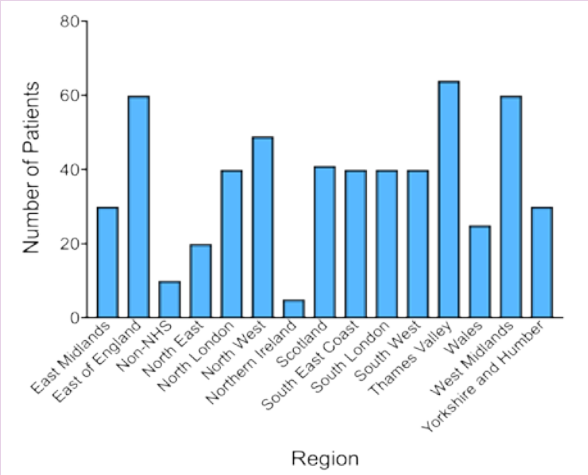

Figure 1: *Graph to show the distribution of patients across regions in the UK*

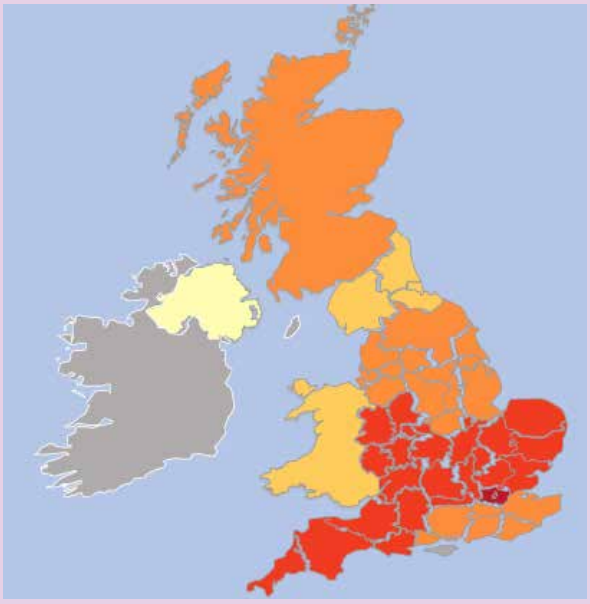

Figure 2*: Heat map of U.K. responses by region.*

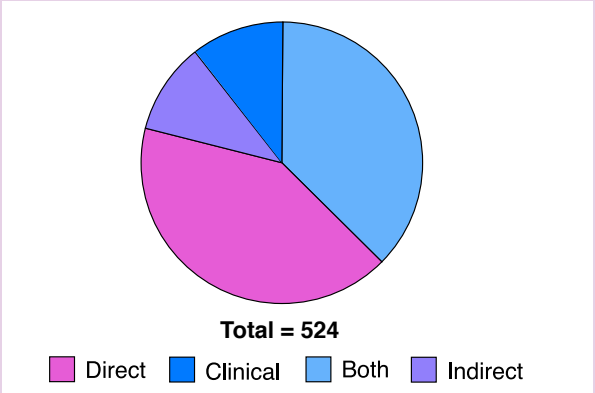

Figure 3: *Pie chart demonstrating the percentage of BP patients diagnosed clinically and those diagnosed with IMF*

Patient population

Of the 524 cases included in the audit, 196 (37.4%) had a diagnosis of BP confirmed on both direct and indirect immunofluorescence (IMF), whereas 218 (41.6%) had direct IMF confirmation and 54 (10.3%) had indirect confirmation. A total of 56 diagnoses (10.7%) were made on clinical assessment alone (Figure 3).

Baseline severity data was available for 346 cases (66.0%) at the outset and 394 (75%) at follow up where blister scores were provided. Of the 346 cases with available data, 225 (65.0%) had a recorded baseline severity of very mild with (<3 blisters), 77 (22.3%) had mild disease (3-9 blisters), 31 (9.0%) had moderate disease (10-30 blisters) and 19 (5.5%) had severe disease (>30 blisters). At follow-ups, a total of 327 cases (83%) had <3 blisters at second follow-up, with 42 (10.6%) having 3-9 blisters, 19 (4.8%) having 10-30 blisters and 6 (1.5%) having severe disease with >30 blisters. (Figure 4).

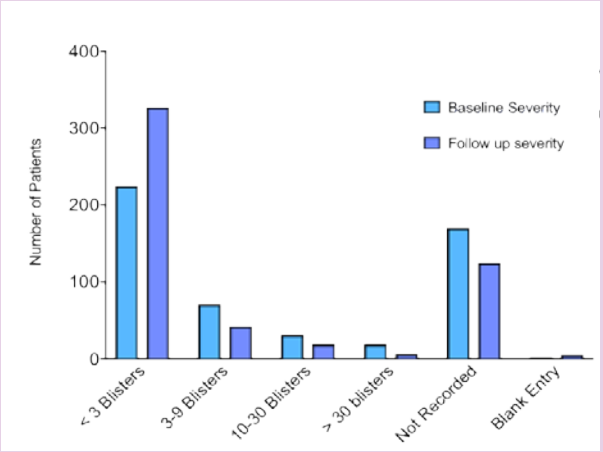

Figure 4: *Graph to show baseline severity of patient population compared to severity at second follow up*

BAD audit standards

a. Clear documentation must be recorded of the relevant and important co-morbidities of diabetes and hypertension.

History of diabetes was recorded in 283 (54.1%) cases, and history of presence or absence of hypertension was documented in 321 (61.5%) cases. Record of blood pressure was documented in 231 (44.2%) cases, and HbA1c, as indication of diabetic status, in 267 (51%).

There was generally moderate compliance across all four data points within this audit standard (Figure 5) with wide variation in practice across all regions (Figures 6 and 7).

b. Patients intended for oral corticosteroid treatment should have assessment for osteoporosis risk and documentation of its management.

Of the 524 cases, 448 (85.5%) were commenced on oral corticosteroids at some point during treatment, either as initial therapy or at follow-up appointments. Data regarding osteoporosis risk was available for 172 (38.4%) with 338 (75.6%) receiving bone protection, implying some form of risk assessment in an additional fraction (Figures 8 and 9).

c. There should be evidence of the patients' satisfaction with the outcome of the treatment on control of their symptoms.

The audit standards published by the BAD recommend documenting formal or informal evidence of patient satisfaction regarding the control of their symptoms; 310 out of 523 cases (59.3%) had documentation of patient satisfaction (Figure 10).

d. Patients treated with systemic medication for BP must have clear documentation of pre-treatment tests (e.g. FBC LFT, glucose, U&E, blood pressure) and appropriate tests during follow up.

Pre-treatment tests included full blood count (FBC), urea and electrolytes (U&E), liver function tests (LFT) and thiopurine methyltransferase (TPMT) for those treated with azathioprine. Monitoring included FBC and LFT; diabetic and blood pressure monitoring were covered in a separate standard.

Systemic medications can be considered in three categories: systemic steroids; disease-modifying drugs such as methotrexate, mycophenolate mofetil, azathioprine and dapsone; alternative systemic treatments such as anti-inflammatory antibiotics, antihistamines and nicotinamide. The audit standards do not specify which systemic medications should be monitored and therefore all medications mentioned above, whether prescribed alone or in combination, have been classed as systemic treatment for the purpose of this audit.

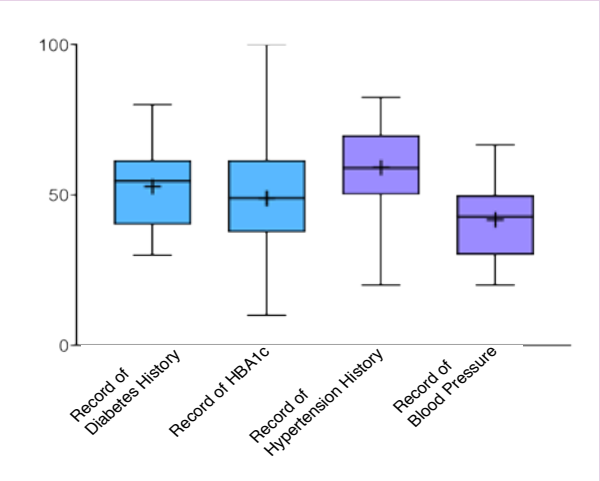

Figure 5: *Boxplots to show the distributional mean percentage of 'yes' responses across all regions for the four published standards regarding comorbidities across all regions. The national mean for each data point is denoted by a '+'. The median values are denoted by horizontal lines within each box plot.*

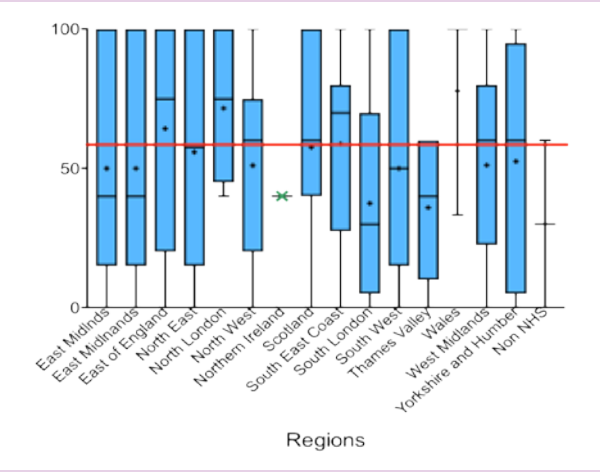

Figure 6: *Boxplots to show the distributional mean percentage of 'yes' responses to having recorded diabetes history for each patient, per hospital, in each region. The national mean (54.1%) is denoted by the red line and the mean for each region is denoted by '+'. The upper and lower quartiles are denoted by whiskers. The median is denoted by the horizontal straight line within each boxplot. Outliers are denoted by a green 'X'. Higher median values indicate better alignment with the audit standard. Longer box and whisker plots indicate greater variation within regions. Of note, due to the low response rate from Northern Ireland the result is classed as an outlier.*

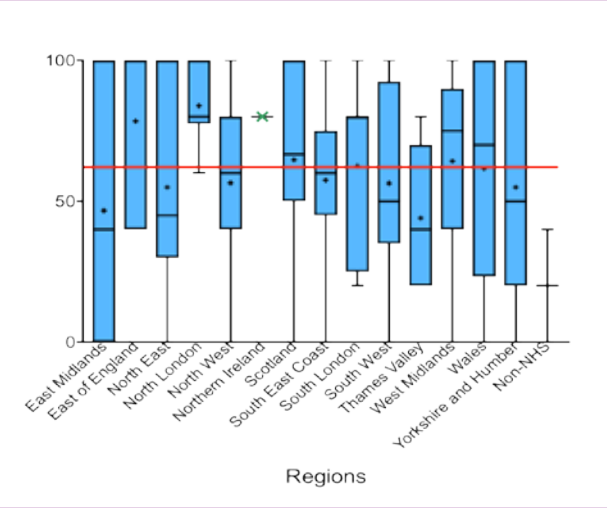

Figure 7: *Boxplots to show the distributional mean percentage of 'yes' responses to having recorded hypertension history for each patient, per hospital, in each region. The national mean (61.5%) is denoted by the red line*

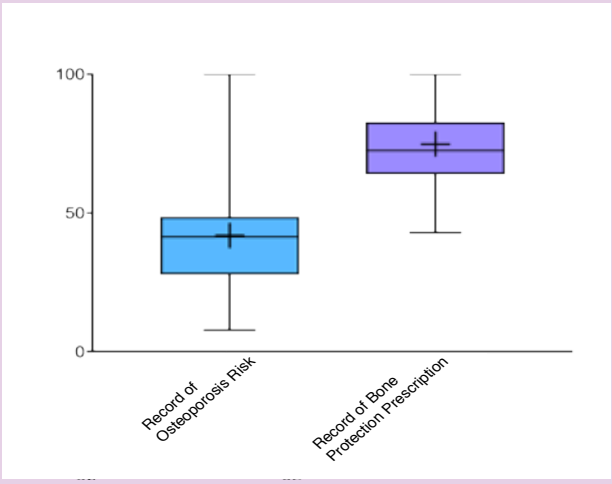

Figure 8: *Boxplots to show the distributional mean percentage for 'yes' responses for each of the two standards described above, across all regions. The national mean for each data point is denoted by a '+'. The median values are denoted by horizontal lines within each box plot.*

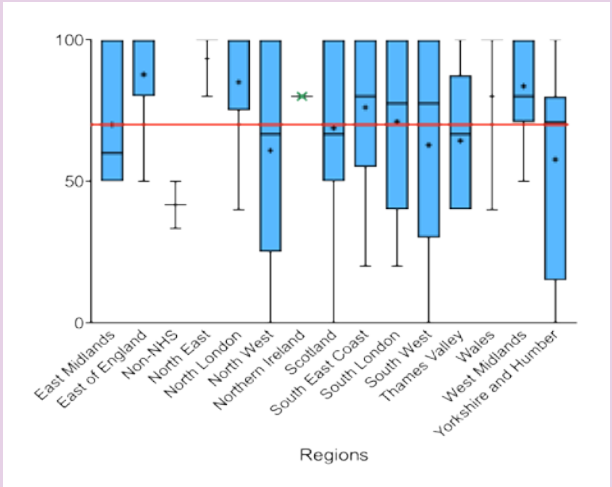

Figure 9: *Boxplots to show the distributional mean percentage of 'yes' responses to having recorded prescription of bone protection for each patient, per hospital, in each region. The national mean (75.6%) is denoted by the red line. Although still some variation in practice within regions, only 4 regions had hospitals reporting compliance ranging from 0%-100% compliance*

A total of 502 patients (95.8%) were commenced on some form of systemic treatment, of which 364 (72.5%) were treated with two or more systemic therapies during the 12-month assessment period, 97 (19.3%) were treated with corticosteroids alone, 3 (0.6%) were treated with a disease-modifying agent alone and 44 (8.8%) were treated with an anti-inflammatory antibiotic or alternative systemic treatment alone. Patients were either commenced on systemic medication at first presentation or during subsequent follow-up appointments. Of these, data regarding baseline FBC, U&E and LFT was available for 485 cases (96.6%) with 424 (87.4%) having all three baseline blood tests recorded.

Monitoring FBC and LFT were recorded in 335 out of 480 cases (69.8%). This data does not take into consideration patients who may have been commenced on systemic treatments but subsequently stopped, which may explain the difference in compliance with baseline tests compared to monitoring tests.

The audit standards also recommend baseline TPMT levels in those commenced on azathioprine. Data was available for 480 cases (95.6%), of which 208 (43.3%) had TPMT levels recorded, with wide variation in practice both across and within regions (Figure 15). However, of those commenced on systemic medications, 62 (12.4%) were documented to have been prescribed azathioprine. When considering this cohort, 57 (91.9%) had a baseline TPMT level recorded, with little variation across all regions (figure 16).

Discussion

Regions with low response rates should be interpreted with caution, in particular, Wales, Northern Ireland and non-NHS organisations had the lowest response rates.

The response rate for this audit was 8.0%, calculated based on number of centres responding due to the request for five cases of adults with BP per centre rather than cases submitted per clinician as requested in other BAD audits.

The sample size of 524 was sufficient for the purpose of evaluating national compliance with audit standards, but was perhaps low for the purpose of evaluating regional variation in practice.

This is the first audit of its kind and illustrates that documentation of comorbidities and history of hypertension and diabetes is low with corresponding low measures of blood pressure and HbA1c. Documentation of patient satisfaction was moderate, with no standardised format for this being available other than DLQI. Whilst documentation of risk factors for osteoporosis was low, the provision of bone protection where relevant was high.

Other measures of care including baseline blood tests (FBC U&E and LFT) including TPMT where relevant, demonstrated high compliance. Follow up blood tests were less frequently undertaken, but it was not possible to determine if this was due to cessation of systemic treatments or a clinical omission. Future audits should structure the audit question differently to ensure that this question can be answered.

Conclusion

Overall, compliance with elements of documentation was moderate or low, whereas standards pertaining to direct care were high.

We would be interested to hear from members with regards to their experience with access to immunofluorescence service.

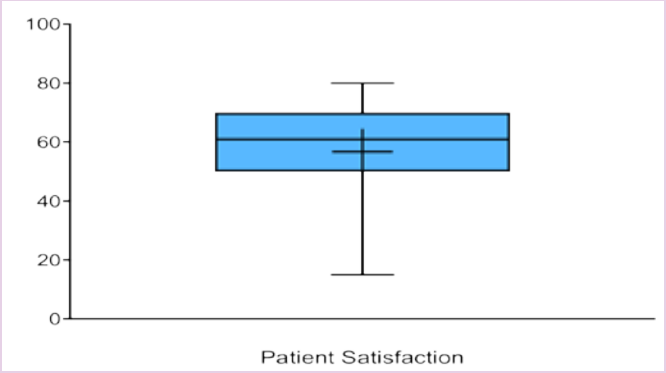

Figure 10: *Boxplot to show the distributional mean percentage of 'yes' responses to having recorded patient satisfaction across all regions. The national mean for each data point is denoted by a '+'. There is generally poor compliance with record of patient satisfaction with wide variation between regions*

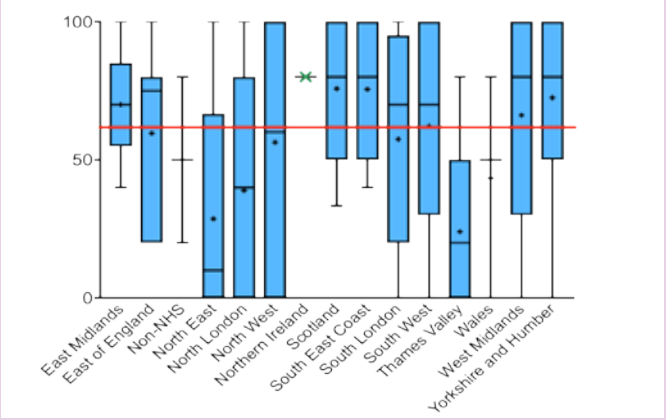

Figure 11: *Boxplots to show the distributional mean percentage of 'yes' responses to having recorded patient satisfaction, for each patient, per hospital, in each region. The national mean (59.3%) is denoted by the red line.*

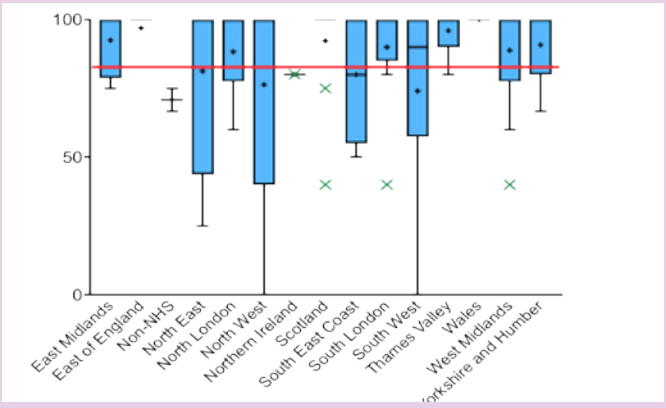

Figure 12: *Boxplots to show the distributional mean percentage of 'yes' responses to having baseline blood tests (FBC, U&E and LFT) recorded, for each patient commenced on systemic treatment, per hospital, in each region. The national mean (87.4%) is denoted by the red line and the mean for each region is denoted by the '+'.*

Action points

1. A re-audit is recommended after 5 years (2023).
2. Standardised dataset for patient presenting with clinical diagnosis of bullous pemphigoid to be outlined
3. Technical aspects of audit standards to be changed to ensure standards reflect relevant data and care for the different points in patient pathway.
4. Consider inclusion of topical treatment and categorisation of these in future audits.
5. Offer recommendation of standard measure of patient satisfaction to aid compliance with this standard.

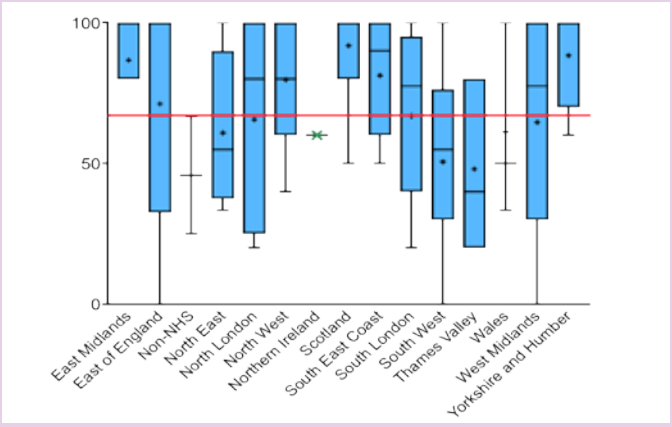

Figure 13: *Boxplots to show the distributional mean percentage of 'yes' responses to having follow-up blood tests (FBC and LFT) recorded, for each patient, per hospital, in each region. The national mean (69.8%) is denoted by the red line and the mean for each region is denoted by '+'.*

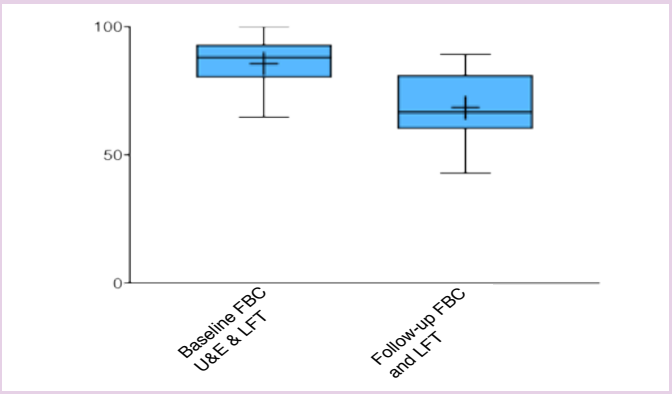

Figure 14: *Boxplots to show the distributional mean percentage of 'yes' responses for having completed baseline and follow-up blood tests for patients commenced on systemic steroids, across all regions. The national mean for each data point is denoted by a '+'.*

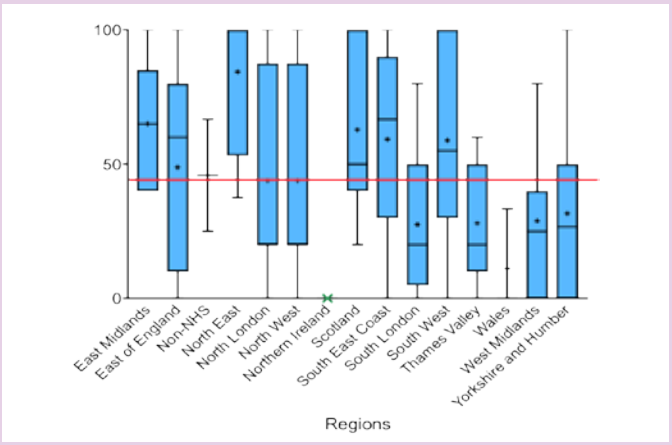

Figure 15: *Boxplots to show the distributional mean percentage of 'yes' responses to having baseline TPMT recorded, for each patient on systemic medications, per hospital, in each region. The national mean (43.3%) is denoted by the red line.*

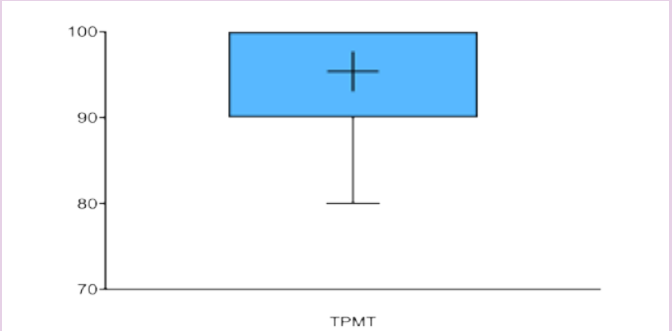

Figure 16: *boxplot to show the distributional mean percentage of 'yes' responses for checking TPMT levels for patients commenced on Azathioprine, across all regions. The national mean for each data point is denoted by a '+'.*