

Laboratory investigations for patients with suspected multiple myeloma: Local audit

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Introduction

NICE guidance (NG35) recommends testing serum protein electrophoresis (SPE) and serum-free light chains (SFLC) for people with suspected myeloma¹.

Our local guideline recommends SPE + SLFC or SPE + urinary Bence Jones Protein (BJP).

SPE alone has a lower diagnostic sensitivity for myeloma – 87.6% vs SPE+BJP 98.7% vs SPE + SFLC 100%².

Our aim was to see if these guidelines are reflective of real life practice.

Methods

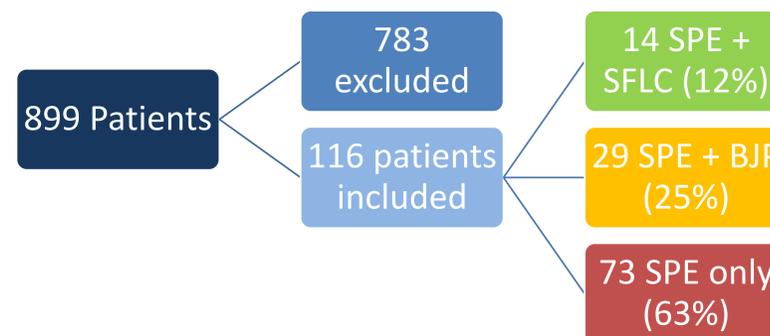
We reviewed 1 week of SPE requests (899 patients) in our hospital in January 2020. We screened the clinical details to remove requests not for myeloma screen. Inclusion clinical details: myeloma screen, back pain, raised calcium, osteoporosis, fracture, CKD, anaemia. Exclusions: known paraprotein, blank clinical details, requests from haematology clinicians.

Of the 116 patients included, we reviewed their details to see if SFLC/BJP also requested.

Results

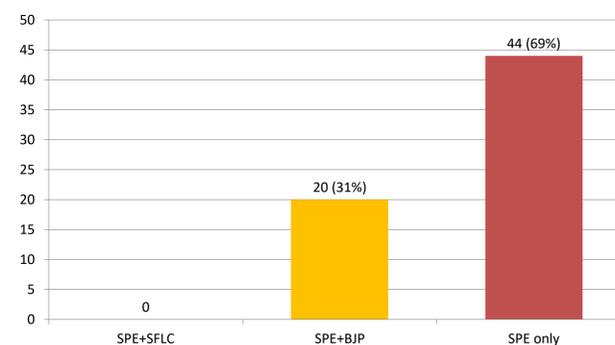
Overall

73/116 (63%) patients had SPE only. 14/116 (12%) had SPE + SFLC and 29/116 (25%) had SPE+BJP.



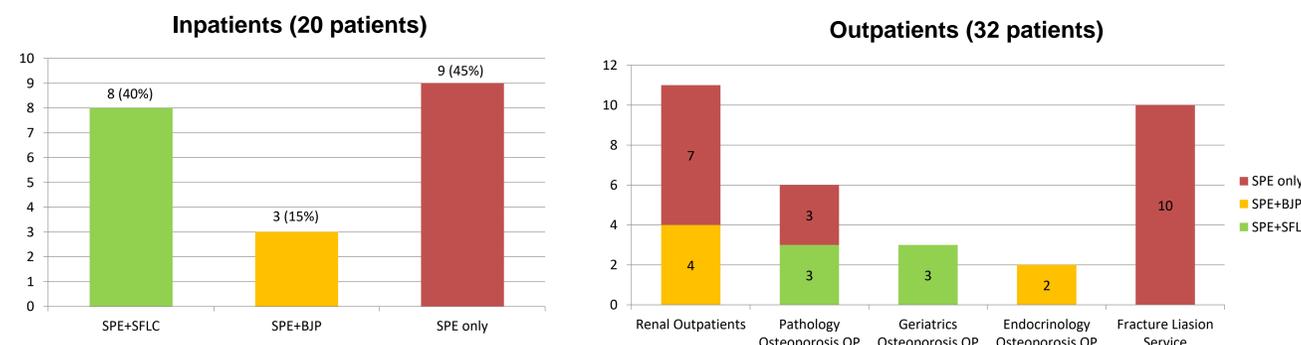
Primary Care

In primary care (64 patients) there were no SFLC requests, 20 patients (31%) had SPE+BJP and 44 (69%) has SPE only.



Secondary Care

In secondary care 29/52 patients (55%) had SPE only, and the use of BJP/SFLC varied between specialties. 10 (100%) of requests from fracture liaison service had SPE only.



Discussion and Conclusion

For myeloma screening 63% of patients are having SPE only. This has a lower diagnostic sensitivity than the NICE guidance of using SPE + SFLC or our local guidelines of SPE + SLFC/BJP. This is likely to result in delayed diagnosis and missed cases of myeloma.

It is known that matched urine compliance in myeloma screening is poor³. Whilst with SFLC the same sample can be used for SPE, it is a relatively costly test.

Suggested strategies to improve local practice include education, reflex testing, and automatic comments on SPE results.

Shortly after this audit our department stopped BJP analysis due to concerns over urine samples in the COVID-19 pandemic and clinicians were encouraged to request SFLC as an alternative. Whilst it hasn't been formally re-audited, anecdotally the number of SFLC requests have increased, particularly from primary care.

References

- 1 National Institute for Health and Care Excellence. Myeloma: diagnosis and management, NG35. (NICE, 2016)
- 2 Katzmann JA, Kyle RA, Benson J, Larson DR, Snyder MR, Lust JA, Rajkumar SV, Dispenzieri A. Screening panels for detection of monoclonal gammopathies. Clin Chem. 2009 Aug;55(8):1517-22. doi: 10.1373/clinchem.2009.126664.
- 3 Holding S, Spradbery D, Hoole R, Wilmot R, Shields ML, Levoguer AM, Doré PC. Use of serum free light chain analysis and urine protein electrophoresis for detection of monoclonal gammopathies. Clin Chem Lab Med. 2011 Jan;49(1):83-8. doi: 10.1515/CCLM.2011.010.