

The evolving use of serum free light chain assays in haematology

Guy Pratt

British Journal of Haematology 2008, 141 (4), 413-422

Overview

This comprehensive review by Dr Guy Pratt discusses the important role of serum free light chain (FLC) assays.

Key Points

The review covers many topical issues for serum FLC assays, these include:

• Analytical issues

The author compares serum FLC assays with urine Bence-Jones estimation and explains that the concentration of light chains in the urine are dependent on renal function and are inadequate for defining complete responses. The review also highlights the problems of obtaining urine samples. The author states; *"Unless this can be addressed then any arguments about the utility of urine Bence-Jones as opposed to serum FLC assays in screening are academic."*

• Role of serum FLC is important in the diagnosis and monitoring of non-secretory myeloma

"...using the serum FLC assay it appears that less than 25% are truly non-secretory, with 75% producing low levels of monoclonal FLC and it is probably an opportune time to label these patients differently, perhaps as crypto-secretory myeloma."

• Serum FLC levels at diagnosis can be used as an independent risk factor for progression for monoclonal gammopathy of undetermined significance (MGUS), smouldering multiple myeloma (SMM) and solitary plasmacytoma of the bone.

The emerging role of serum FLC concentrations at diagnosis and their prognostic value in MM patients is also highlighted.

• Use of serum FLC in other haematological malignancies

The author discusses the utility of the serum FLC assay in other lymphoid malignancies, such as Waldenström's macroglobulinaemia (WM), chronic lymphocytic leukaemia (CLL) and mantle cell lymphoma.

• Removal of FLC in newly diagnosed MM may lead to renal recovery

Conclusion

The review states that the serum FLC assay has been an advance in the diagnosis and monitoring of LCMM, AL amyloidosis, NSMM and oligo-secretory myeloma.

"Serum free light chains have been incorporated into the new response criteria for both multiple myeloma and AL amyloidosis."

"Serum free light chains can give an earlier assessment of tumour response than intact immunoglobulin. Appropriate clinical studies are required to determine whether it is possible to gain clinical benefit from the earlier detection of treatment responses...."

"Using FLC to identify quickly patients with resistance to current regimens is likely to become increasingly incorporated into the current management of myeloma patients."

"As a screening test, serum FLC could replace urine analysis for Bence Jones proteins in clinical practice. In the UK, a urine sample is received in the laboratory from less than 50% of patients investigated for plasma cell dyscrasias making serum FLC a considerably safer screening test than urinalysis."



DTP273

Binding Site Ltd
P.O. Box 11712, Birmingham, B14 4ZB, UK.
Tel: +44 (0)121 436 1000 Fax: +44 (0)121 430 7061
info@bindingsite.co.uk
www.freelite.co.uk

Binding Site
THE BINDING SITE