

SERUM PROTEIN ELECTROPHORESIS (SPEP) PLUS SERUM FREE LIGHT CHAIN (sFLC) TESTING: A SENSITIVE PANEL FOR DIAGNOSIS OF MONOCLONAL GAMMOPATHY (MG)

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sFLC assays for free kappa (K) and free lambda (L) light chains are highly sensitive for detecting light chain nephropathies. The serum panel, SPEP + sFLC, is a new approach to the diagnosis of MG; however, specificity may be reduced in patients (pts) with renal impairment (RI) and mildly increased sFLC ratios. A newly reported reference range for the K/L ratio in the setting of RI (*CJASN*. 2008;3: 1684-90) was used to assess the diagnostic performance of this panel.

sFLC testing was performed on 281 consecutive samples received for SPEP + urinePEP (UPEP) during a 3-mo period. sFLC were interpreted as MG if free K and/or free L were increased and the K/L ratio was abnormal (normal K/L ratio: 0.26–1.65 for non-RI; 0.37–3.1 for RI defined as creatinine \geq 1.2 mg/dL).

Overall, 78 MG were detected. Sensitivity for detection of MG with SPEP, UPEP, sFLC, and panels are shown (table). Three pts (no RI) had faint UPEP bands but normal sFLC, no m-spikes on SPEP, and no other signs of MG; 3 pts (no RI) had abnormal sFLC ratios (2.02, 2.11, and 2.32), no m-spike on SPEP or UPEP, and no other signs of MG. Ten pts with RI had K/L ratios of 1.66–3.1 and no m-spikes on SPEP or UPEP, thus improving specificity in RI from 83% to 100% when the new renal reference range for the K/L ratio was used.

Pts (total number)	SPEP	UPEP	sFLC	SPEP + UPEP	SPEP + sFLC
	Sensitivity (number MG detected)				
RI (n=91)	91% (30)	45% (15)	55% (18)	94% (31)	100% (33)
No RI (n=190)	98% (44)	29% (13)	31% (14)	100% (45)	100% (45)
Total (N=281)	95% (74)	36% (28)	41% (32)	97% (76)	100% (78)

The panel of SPEP + sFLC improved overall sensitivity for the detection of MG compared with SPEP + UPEP. For pts with RI, the new renal reference range for the K/L ratio improved specificity.