



HAL
open science

Reduction of serum free light chains predict renal recovery

Colin A. Hutchison

► **To cite this version:**

Colin A. Hutchison. Reduction of serum free light chains predict renal recovery. *Annals of Hematology*, 2009, 89 (6), pp.627-628. 10.1007/s00277-009-0836-1 . hal-00486564

HAL Id: hal-00486564

<https://hal.science/hal-00486564>

Submitted on 26 May 2010

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Editorial Manager(tm) for Annals of Hematology
Manuscript Draft

Manuscript Number: AOHE-D-09-00363

Title: Reduction of serum free light chains predict renal recovery

Article Type: Letter to the Editor

Keywords: Multiple myeloma; renal failure; free light chains

Corresponding Author: Dr Colin Andrew Hutchison, MBChB, PhD

Corresponding Author's Institution: University of Birmingham

First Author: Colin Andrew Hutchison, MBChB, PhD

Order of Authors: Colin Andrew Hutchison, MBChB, PhD

Abstract: Monoclonal free light chains are the principal cause of severe renal failure in patients with multiple myeloma. Increasing evidence suggests that targeting early reductions in serum concentrations of free light chains is associated with improved clinical outcomes. Further work is required to determine whether direct removal of free light chains from the serum provides any additional benefit to effective chemotherapy alone.

Reduction of serum free light chains predict renal recovery

Author: Colin A Hutchison

Address: Renal Institute of Birmingham
Department of Nephrology
University Hospital Birmingham
Birmingham
B152TH

Email: c.a.hutchison@bham.ac.uk

Phone: +44-7723917870

Fax: +121-4306482

Key words:

Multiple myeloma; renal failure; free light chains

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

Reduction of serum free light chains predict renal recovery

Dear editor, in a recent issue of *Annals of Hematology* Matsue *et al* [1] report the outcomes of a population of patients with severe renal failure secondary to multiple myeloma. Of particular note, the authors highlight that where serum free light chains (FLC) were measured (five patients) an early reduction in their concentrations was associated with renal recovery. This data is supported by two larger case series which report 40 and 20 patients with severe renal failure and myeloma [2,3]. These series independently demonstrated renal recovery to be associated with an early reduction in serum FLCs of greater than 50%.

How this reduction in serum FLCs is achieved, and whether direct removal of FLCs from the serum has a role, remain to be determined. Undoubtedly effective chemotherapy is essential, without which direct removal can have little impact on circulating FLC levels [4]. Historically, plasma exchange has been used to aid this reduction [5], more recently however a novel method for FLC removal, high cut-off haemodialysis, has been demonstrated to have an increased capacity [4]. The potential benefit of FLC removal in this setting, relates to the extended serum half lives of FLCs in renal failure, which result serum concentrations remaining high even when chemotherapy has been effective. This is likely to translate to the time to renal recovery. In line with other series which used novel chemotherapy agents in this setting [6,7], Matsue *et al* [1] report a high rate of independence of dialysis. However, the median time to independence of dialysis, 2 months, is uncharacteristically long for an acute kidney injury. Potentially if serum FLCs were reduced more rapidly, using direct removal to overcome the prolonged serum half-lives, the duration of dialysis dependence would be shorter. This hypothesis is currently being evaluated by the European Trial of Free Light Chain Removal by Extended Haemodialysis in Cast Nephropathy (EuLITE) [8], a multi-centre randomised controlled trial based in the United Kingdom and Germany.

Currently we can conclude that recent use of novel chemotherapy regimes in patients with renal failure secondary to multiple myeloma has resulted in improved outcomes for this population. Further work is now required to determine whether therapeutic strategies for directly removing FLCs from the serum can provide an additional benefit.

References:

1. Matsue K, Fujiwara H, Iwama K, Kimura S, Yamakura M, Takeuchi M (2009). Reversal of dialysis-dependent renal failure in patients with advanced multiple myeloma: single institutional experience over 8 years. *Ann Hematol* Epub August.
2. Leung N, Gertz MA, Zeldenrust SR, *et al* (2008). Improvement of cast nephropathy with plasma exchange depends on the diagnosis and on reduction of serum free light chains. *Kidney Int* 73(11):1282-8.
3. Hutchison CA, Bradwell AR, Cook M, *et al* (2009). Treatment of acute renal failure secondary to multiple myeloma with chemotherapy and extended high cut-off hemodialysis. *Clin J Am Soc Nephrol* 4(4):745-54.
4. Clark WF, Stewart AK, Rock GA, *et al* (2005). Plasma exchange when myeloma presents as acute renal failure: a randomized, controlled trial. *Ann Intern Med* 143(11):777-84.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

5. Hutchison CA, Cockwell P, Reid S, *et al* (2007). Efficient removal of immunoglobulin free light chains by hemodialysis for multiple myeloma: in vitro and in vivo studies. *J Am Soc Nephrol* 18(3):886-95.
6. Kastiris E, Anagnostopoulos A, Roussou M, *et al* (2007). Reversibility of renal failure in newly diagnosed multiple myeloma patients treated with high dose dexamethasone-containing regimens and the impact of novel agents. *Haematologica* 92(4):546-9.
7. Ludwig H, Drach J, Graf H, Lang A, Meran JG (2007). Reversal of acute renal failure by bortezomib-based chemotherapy in patients with multiple myeloma. *Haematologica* 92(10):1411-4.
8. Hutchison CA, Cook M, Heyne N, Weisel K, Billingham L, Bradwell A, Cockwell P (2008). European trial of free light chain removal by extended haemodialysis in cast nephropathy (EuLITE): A randomised control trial. *Trials* 9:55.