

Diagnostik monoklonaler Gammopathien: Analytische Fallstricke und Interferenzen

Christof Schild, Florence Egger, Jean-Marc Nuoffer

Referenzen

- 1 Thormann W, Lurie IS, McCord B, Marti U, Cenni B, Malik N. Advances of capillary electrophoresis in clinical and forensic analysis (1999-2000). *Electrophoresis*. 2001;22(19):4216-43.
- 2 Schild C, Egger F, Kaelin-Lang A, Nuoffer JM. Monoclonal gammopathy missed by capillary zone electrophoresis. *Clin Chem Lab Med*. 2011 Jul;49(7):1217-9.
- 3 Schild C, Wermuth B, Trapp-Chiappini D, Egger F, Nuoffer JM. Reliability of M protein quantification: comparison of two peak integration methods on Capillarys 2.
- 4 Lock RJ, Saleem R, Roberts EG, Wallage MJ, Pesce TJ, Rowbottom A, Cooper SJ, McEvoy ED, Taylor JL, Basu S. A multicentre study comparing two methods for serum free light chain analysis. *Ann Clin Biochem*. 2013;50(Pt 3):255-61.
- 5 Mollee P, Tate J, Pretorius CJ. Evaluation of the N Latex free light chain assay in the diagnosis and monitoring of AL amyloidosis. *Clin Chem Lab Med*. 2013;51(12):2303-10.
- 6 Hutchison CA, Cockwell P, Cook M. Diagnostic accuracy of monoclonal antibody based serum immunoglobulin free light chain immunoassays in myeloma cast nephropathy. *BMC Clin Pathol*. 2012;12:12.
- 7 Hoedemakers RM, Pruijt JF, Hol S, Teunissen E, Martens H, Stam P, Melsert R, Te Velthuis H. Clinical comparison of new monoclonal antibody-based nephelometric assays for free light chain kappa and lambda to polyclonal antibody-based assays and immunofixation electrophoresis. *Clin Chem Lab Med*. 2011;50(3):489-95.
- 8 Butch AW. Dilution protocols for detection of hook effects/prozone phenomenon. *Clin Chem*. 2000;46(10):1719-21.
- 9 Murng SH, Follows L, Whitfield P, Snowden JA, Swallow K, Green K, Sargur R, Egner W. Defining the impact of individual sample variability on routine immunoassay of serum free light chains (sFLC) in multiple myeloma. *Clin Exp Immunol*. 2013;171(2):201-9.
- 10 Vercammen MJ, Broodtaerts L, Meirlaen P, Bossuyt X. Overestimation of free light chain antigen excess rate. *Chimica Acta* 2015;444: 297–302.

- 11 Murata K, Clark RJ, Lockington KS, Tostrud LJ, Greipp PR, Katzmann JA. Sharply increased serum free light-chain concentrations after treatment for multiple myeloma. *Clin Chem*. 2010;56(1):16-18.
- 12 Jenner E, Levoguer A, Evans J, Harding S. Serum free light chain immunoassays: a guide to antigen excess detection. *Clin Chim Acta*. 2012;413(9-10):949.
- 13 Dispenzieri A, Kyle R, Merlini G, Miguel JS, Ludwig H, Hajek R, Palumbo A, Jagannath S, Blade J, Lonial S, Dimopoulos M, Comenzo R, Einsele H, Barlogie B, Anderson K, Gertz M, Harousseau JL, Attal M, Tosi P, Sonneveld P, Boccadoro M, Morgan G, Richardson P, Sezer O, Mateos MV, Cavo M, Joshua D, Turesson I, Chen W, Shimizu K, Powles R, Rajkumar SV, Durie BG; International Myeloma Working Group. International Myeloma Working Group guidelines for serum-free light chain analysis in multiple myeloma and related disorders. *Leukemia*. 2009;23(2):215-24.
- 14 Tate JR, Mollee P, Dimeski G, Carter AC, Gill D. Analytical performance of serum free light-chain assay during monitoring of patients with monoclonal light-chain diseases. *Clin Chim Acta*. 2007;376(1-2):30-6.
- 15 Mollee P, Tate J, Pretorius CJ. Evaluation of the N Latex free light chain assay in the diagnosis and monitoring of AL amyloidosis. *Clin Chem Lab Med*. 2013;51(12):2303-10.
- 16 Maisin D, Lepoutre T, Gruson D, Wallemacq P. Quantification of serum free light chain kappa and lambda by the SPAPLUS analyser. *Clin Biochem*. 2013;46(7-8):622-6.
- 17 Katzmann JA, Snyder MR, Rajkumar SV, Kyle RA, Therneau TM, Benson JT, Dispenzieri A. Long-term biological variation of serum protein electrophoresis M-spike, urine M-spike, and monoclonal serum free light chain quantification: implications for monitoring monoclonal gammopathies. *Clin Chem*. 2011;57(12):1687-92.
- 18 King RI, Florkowski CM. How paraproteins can affect laboratory assays: spurious results and biological effects. *Pathology*. 2010;42(5):397-401.
- 19 Smogorzewska A, Flood JG, Long WH, Dighe AS. Paraprotein interference in automated chemistry analyzers. *Clin Chem*. 2004;50(9):1691-3.
- 20 Aeberhard N, Schild C, Rodondi N, Roten-Joss C, Tänzler K. Phosphate disorders: hyperphosphatemia or pseudohyperphosphatemia?. *Praxis (Bern 1994)*. 2014;103(20):1203-6.
- 21 Stratta P, Canavese C, Quaglia M, Lazzarich E, Morellini V, Brustia M, Bardone B, Bellomo G. A patient with unexplained hyperphosphataemia. *Nephrol Dial Transplant*. 2006;21(9):2664-6.
- 22 Chan KM, Ladenson JH. Sample viscosity can be a source of analytical error when discrete sampler-dilutors are used. *Clin Chem*. 1981;27(11):1896-8.

- 23 Jaynes P, Witte D, Simpson C, et al. Interference by some monoclonal IgMs in discrete serum creatinine analysis. 34th National Meeting of the American Association for Clinical Chemistry, Anaheim, California. Clin Chem 1982;28:1532–702.
- 24 Schwab JD, Strack MA, Hughes LD, Shaker JL. Pseudohypercalcemia in an elderly patient with multiple myeloma: report of a case and review of literature. Endocr Pract. 1995;1(6):390-2.
- 25 Smith BJ, Doukas M, Hess C, Savory J, Wills MR. Frequency of calcium binding by monoclonal immunoglobulins in multiple myeloma. Ann Clin Lab Sci. 1984;14(4):261-4.
- 26 Gidenne S, Vigezzi JF, Delacour H, Damiano J, Clerc Y. Direct determination or estimated value of plasma ionized calcium : indications and limits. Ann Biol Clin (Paris). 2003;61(4):393-9.
- 27 Fortgens P, Pillay TS. Pseudohyponatremia revisited: a modern-day pitfall. Arch Pathol Lab Med. 2011;135(4):516-9.
- 28 Rosenthal R , Koelz A, Vogelbach P. Pseudohyponatriämie. Schweiz Med Wochenschr 2000;130:161.
- 29 Renz, H (Hrsg.). Praktische Labordiagnostik. 2. Auflage. Berlin: de Gruyter, 2014, S. 304.
- 30 Yamada K, Yagihashi A, Ishii S, Tanemura K, Kida T, Watanabe N, Niitsu Y. Interference with nephelometric assay of C-reactive protein and antistreptolysin-O by monoclonal IgM-kappa from a myeloma patient. Clin Chem. 1997;43(12):2435-7.
- 31 Bakker AJ, Mücke M. Gammopathy interference in clinical chemistry assays: mechanisms, detection and prevention. Clin Chem Lab Med 2007;45(9):1240–1243.
- 32 Halsall DJ, Mangi M, Soos M, et al. Clinical case seminar: Hypoglycemia due to an insulin binding antibody in a patient with an IgA-kappa myeloma. J Clin Endocrinol Metab 2007; 92: 2013–6.