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Calorimetric manifestation of IgA monoclonal immunoglobulins in multiple myeloma sera

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Highlights

- IgA myeloma exerts specific calorimetric features at high paraprotein concentration
- paraprotein electrophoretic mobility relates to altered intermolecular interactions
- formation of IgA oligomers and/or albumin-IgA complexes is suggested

Abstract

Multiple myeloma (MM) with secretion of monoclonal immunoglobulin A (IgA) is among the common myeloma types. The diagnosis of IgA MM is based on a panel of clinical and paraclinical markers, the primary one being the IgA paraprotein level. One of the drawbacks of IgA MM diagnostics and monitoring, especially at low IgA levels, is the migration of monoclonal IgA in the β-globulins region of the serum protein electrophoresis profile where it overlaps with "healthy" β-globulin proteins and is thus not clearly resolved.

The present study explores the manifestation of IgA monoclonal immunoglobulins in the thermograms of multiple myeloma sera. We show that the electrophoretic mobility of IgA paraproteins is related to altered intermolecular interactions, plausibly the formation of IgA oligomers and/or albumin-IgA complexes. We demonstrate that high IgA levels exhibit specific calorimetric features that discriminate IgA MM from other MM subtypes.