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Often seen, rarely recognized: mast cell activation disease--a guide to diagnosis and therapeutic options

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Abstract

Mast cell (MC) disease has long been thought to be just the rare disease of mastocytosis (in various forms, principally cutaneous and systemic), with aberrant MC mediator release at symptomatic levels due to neoplastic MC proliferation. Recent discoveries now show a new view is in order, with mastocytosis capping a metaphorical iceberg now called "MC activation disease" (MCAD, i.e. disease principally manifesting inappropriate MC activation), with the bulk of the iceberg being the recently recognized "MC activation syndrome" (MCAS), featuring inappropriate MC activation to symptomatic levels with little to no inappropriate MC proliferation. Given increasing appreciation of a great menagerie of mutations in MC regulatory elements in mastocytosis and MCAS, the great heterogeneity of MCAD's clinical presentation is unsurprising. Most MCAD patients present with decades of chronic multisystem polymorbidity generally of an inflammatory ± allergic theme. Preliminary epidemiologic investigation suggests MCAD, while often misrecognized, may be substantially prevalent, making it increasingly important that practitioners of all stripes learn how to recognize its more common forms such as MCAS. We review the diagnostically challenging presentation of MCAD (with an emphasis on MCAS) and current thoughts regarding its biology, epidemiology, natural history, diagnostic evaluation, and treatment.

Keywords: Mast cell; mast cell activation disease; mast cell activation syndrome; mastocytosis.

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