Corresponding Author	Thanai Pongdee
List all other authors	Dayne Voelker, Sergio E. Chiarella, Joseph H. Butterfield
Email-Address	pongdee.thanai@mayo.edu
Institute/Department	Mayo Clinic/Section of Allergy and Immunology
Address of Institute	200 First Street SW, Rochester, Minnesota 55905, USA
Title of Presentation	Elevation of urine mast cell mediator metabolites during mast cell activation events
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Abstract of Presentation	Title: Elevation of urine mast cell mediator metabolites during mast cell activation events Thanai Pongdee MD (1,2), Dayne Voelker MD (1,3), Sergio E. Chiarella MD (1), Joseph H. Butterfield, MD (1) 1 Section of Allergy and Immunology, Department of Medicine, Mayo Clinic, Rochester, Minnesota 2 Division of Hematology, Mayo Clinic, Rochester, Minnesota 3 Division of Allergy and Immunology, Mayo Clinic Health System, Austin, Minnesota Background: The minimal increase in an acute serum tryptase level to strongly support the presence of mast cell activation is greater than plus 20% baseline tryptase level + 2 ng/mL. However, criteria for a significant increase in urinary mediator metabolites for histamine, prostaglandin D2, or leukotriene E4 is not well defined. Methods: We conducted a retrospective review of patients evaluated at Mayo Clinic from 2018-2025 who underwent measurement of serum tryptase and urine for N-methylhistamine, 2,3-dinor-11b-prostaglandin F2 alpha and leukotriene E4. Patients with the requisite increase in serum tryptase during a mast cell activation event who also had acute/baseline measurements of urinary mediator metabolite(s) were identified. Ratios of acute/baseline levels for each urinary mediator metabolite that accompanied tryptase increases of 20% plus 2 ng/mL were determined. Results: We identified 6,678 unique patients who underwent measurement of serum tryptase and all 3 urinary mediator metabolites during the study period. From these,

	352 patients had an acute tryptase increase greater than 20% baseline plus 2 ng/mL. Of these, 90 patients (56 female, 34 male) also had measurement of urinary mediator metabolites that accompanied the acute/baseline tryptase measurement. For these 90 patients, the average acute/baseline ratio (SD) for tryptase was 5.25 (20.8). The average acute/baseline ratios of urinary mediator metabolites were: N-methylhistamine = 1.94 (1.58), 2,3-dinor-11b-prostaglandin F2 alpha = 7.49 (22.85), and leukotriene E4 = 6.67 (14.89). Conclusions: Measurements of urinary mediator metabolites may be used in addition to an increase in serum tryptase to document mast cell activation.