Maintenance of Certification clinical management series

Series editor: James T. Li, MD, PhD

Evaluation of a patient with hyper-IgM syndrome

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INSTRUCTIONS

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1. Review the target audience, learning objectives and author disclosures.
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Date of Original Release: June 2012. Credit may be obtained for these courses until May 31, 2014.

Target Audience: Physicians and researchers within the field of allergic disease.

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List of Design Committee Members: Burcin Uygungil, MD, MPH, Francisco Bonilla, MD, PhD, and Howard Lederman, MD, PhD (authors), James T. Li, MD, PhD (series editor)

Activity Objectives

1. To understand similarities and differences between the various forms of hyper-IgM syndrome.
2. To use the differential diagnosis of increased IgM levels to recognize disorders that require timely management.
3. To distinguish between those hyper-IgM syndromes that present with and without lymphoid hypertrophy.

Recognition of Commercial Support: This CME activity has not received external commercial support.

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Key words: *Ataxia-telangiectasia, hyper-IgM, lymphoid hypertrophy, opportunistic infection, CD40 ligand deficiency, CD40 deficiency, activation-induced cytidine deaminase, uracyl DNA glycosylase, ectodermal dysplasia*

CLINICAL VIGNETTE

A 2-year-old boy presented to the emergency department for evaluation of fever, fussiness, poor appetite, and refusal to walk. His history was notable for recurrent fevers and infections, primarily otitis media, and sinusitis. He developed normally in the first year of life but did not walk until 18 months of age. Family history was remarkable for a 5-year-old sister with the same symptoms and his mother who had a prior miscarriage.

Physical examination demonstrated a boy with weight and height less than the fifth percentile. He had shotty anterior cervical and bilateral inguinal lymphadenopathy. His neurologic examination revealed slightly increased tone, 4 beats of clonus bilaterally, and a slightly unsteady gait.

The white blood cell count was 5090/μL with neutropenia (absolute neutrophil count, 500 cells/μL) and lymphopenia (absolute lymphocyte count, 2500 cells/μL). Further immunologic workup revealed a low IgG level (78 mg/dL; normal, 400-1300 mg/dL), a normal IgA level (99 mg/dL; normal, 30-120 mg/dL), and an increased IgM level (2660 mg/dL; normal, 20-230 mg/dL). Isohemagluttinins were negative. Lymphocyte subpopulations were as follows: $CD3^+$ cells, 77%; $CD4^+$ cells, 56%; $CD8^+$ cells, 17%; and $CD16^+$ cells, 18%. Minimal T-cell responses to mitogens (patient: unstimulated, 3,200 counts/min; PHA, 8,480 counts/min; and concanavalin A, 6,740 counts/min; control: unstimulated, 2,540 counts/min; PHA, 88,230 counts/min; concanavalin A, 41,359 counts/min; and pokeweed mitogen, 49,114 counts/min) and soluble antigens (patient: unstimulated, 1,414 counts/min; tetanus, 2,930 counts/min; and diphtheria, 2,770 counts/min; control:

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unstimulated, 5,777 counts/min; tetanus, 11,250 counts/min; and diphtheria, 16,594 counts/min). Blood cultures grew *Pneumococcus* species, and he was treated with intravenous ceftriaxone.

The full version of this article, including a review of relevant issues to be considered, can be found online at www.jacionline.org. If you wish to receive CME or MOC credit for the article, please see the instructions above.

I. Leonard Bernstein, MD

In Lasting Tribute. . .I. Leonard Bernstein, MD

Long-standing member and former president (1982-1983) of the AAAAI, I. Leonard Bernstein, MD, FAAAAI, passed away on March 26, 2012. Dr Bernstein made a number of contributions to the allergy/immunology specialty during his career, including his role as a founding member of the AAAAI/ACAAI Joint Task Force on Practice Parameters. He gained national and international acclaim for his clinical expertise and research in the field of environmental allergens, occupational immunologic lung disease, hypersensitivity aspects of reproduction and novel pharmacologic approaches to the treatment of asthma.

A clinical professor of medicine and environmental health sciences, Dr Bernstein was a 1949 University of Cincinnati (UC) College of Medicine alum and completed his postgraduate training in internal medicine at the Cincinnati General and Jewish hospitals. After serving 2 years in the US Air Force as an aeromedical examiner, he pursued fellowship training in pulmonary diseases at Bellevue Hospital in New York and allergy at Northwestern University. He returned to Cincinnati and established UC's Allergy and Immunology Fellowship Training Program, which has trained 60 fellows since 1958. In addition, his sons David Bernstein, MD, and Jonathan Bernstein, MD, both received their medical degrees from UC and both currently serve as faculty in the department of internal medicine's division of allergy, immunology and rheumatology.