



Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

journal homepage: [www.e-jmii.com](http://www.e-jmii.com)



## CASE REPORT

# Cytokine profiles in *Mycoplasma pneumoniae* infection-associated hemophagocytic lymphohistiocytosis



Motoko Yasutomi <sup>a,\*</sup>, Shintaro Okazaki <sup>a</sup>, Ikue Hata <sup>a</sup>,  
Akihiko Tanizawa <sup>a</sup>, Soichi Tamamura <sup>b</sup>, Mikiko Kawakita <sup>c</sup>,  
Yusei Ohshima <sup>a</sup>

<sup>a</sup> Department of Pediatrics, Faculty of Medical Sciences, University of Fukui, Fukui, Japan

<sup>b</sup> Department of Pediatrics, Fukui Social Insurance Hospital, Fukui, Japan

<sup>c</sup> Kawakita Pediatrics Clinic, Katsuyama, Fukui, Japan

Received 21 June 2014; received in revised form 13 November 2014; accepted 29 November 2014

Available online 11 December 2014

### KEYWORDS

CD8;  
cytokine;  
hemophagocytic  
lymphohistiocytosis;  
*Mycoplasma pneumoniae*

A 3-year-old boy with *Mycoplasma pneumoniae* infection associated with hemophagocytic lymphohistiocytosis (MP-HLH) presented with an elevated level of serum interleukin-12 (IL-12) and lower levels of interferon- $\gamma$  and IL-10 compared to patients with Epstein–Barr virus infection associated with HLH (EBV-HLH). Unlike the patients with EBV-HLH, CD8<sup>+</sup> CD5<sup>low</sup> HLA-DR<sup>++</sup> T cells were not detected in our pediatric patient. Thus, the pathophysiology of MP-HLH may differ from that of EBV-HLH.

Copyright © 2015, Taiwan Society of Microbiology. Published by Elsevier Taiwan LLC. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## Introduction

Hemophagocytic lymphohistiocytosis (HLH) is a hyper-inflammatory syndrome characterized by the uncontrolled activation and massive proliferation of macrophages and T

cells with hypercytokinemia.<sup>1</sup> Although HLH and *Mycoplasma pneumoniae* (MP) infection can be comorbid, the mechanism of the pathogenesis remains unclear. Here we report on the changes in peripheral blood T-cell subsets and serum cytokine profiles observed in a boy with MP infection associated with HLH (MP-HLH).

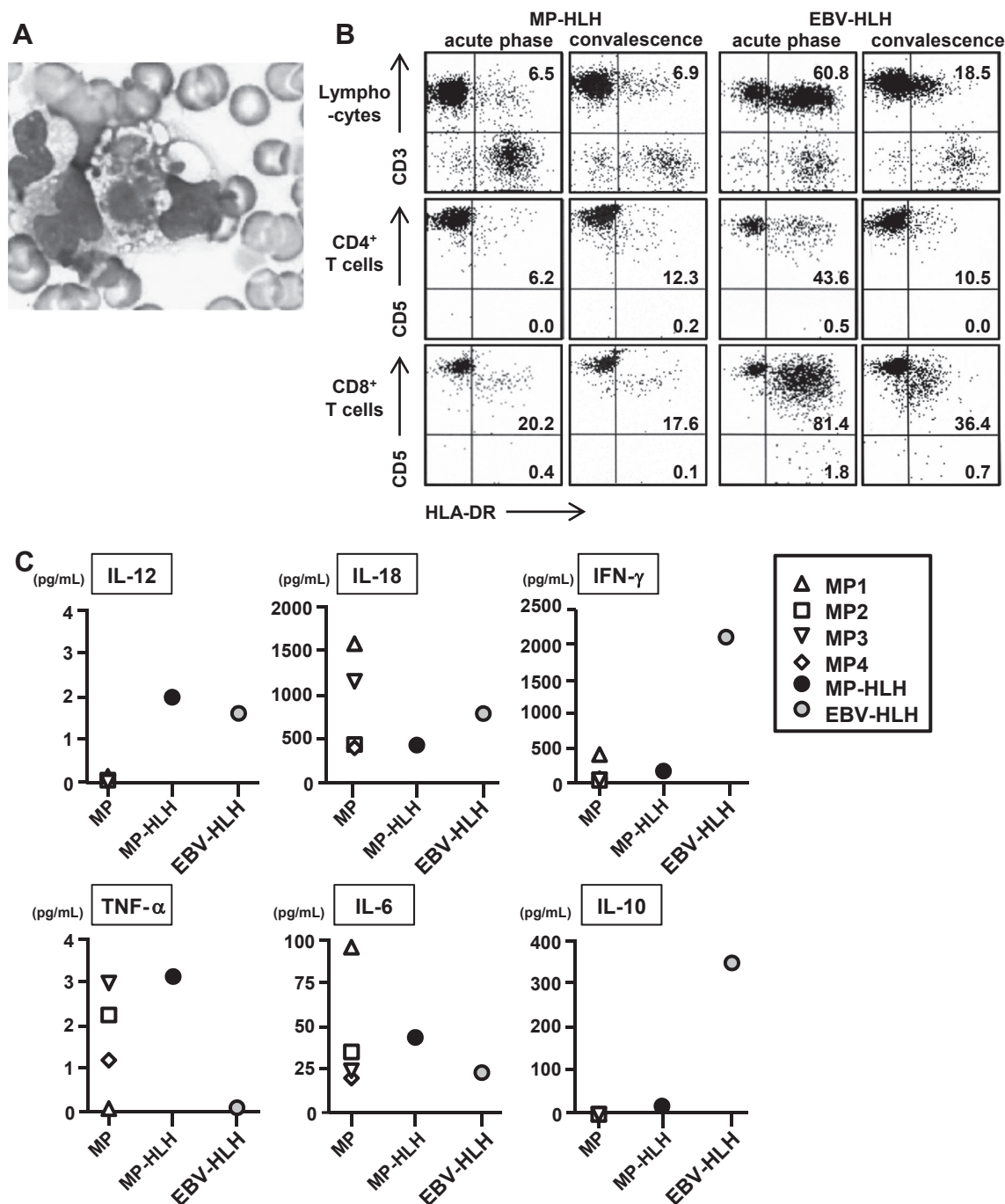
## Case report

A 3-year-old boy was admitted to a hospital with persisting fever and coughs for 4 days. He had been healthy before

\* Corresponding author. Department of Pediatrics, Faculty of Medical Sciences, University of Fukui, 23-3 Shimoaizuki, Matsuoka, Eiheiji, Yoshida, Fukui 910-1193, Japan.  
E-mail address: [yasutomi@u-fukui.ac.jp](mailto:yasutomi@u-fukui.ac.jp) (M. Yasutomi).

the onset of fever. A chest radiograph revealed massive infiltration in the right upper lung lobe, suggesting pneumonia. He was initially treated with clarithromycin and ampicillin/sulbactam, which were replaced with meropenem and minocycline, due to the possibility of penicillin-resistant *Streptococcus pneumoniae* and macrolide-resistant *M. pneumoniae* as causative agents.

Because of a persistent high-grade fever and elevated serum levels of lactate dehydrogenase (LDH) and ferritin, the boy was referred to our hospital 4 days later. On admission, his laboratory findings were as follows: white blood cell count, 4800/ $\mu$ L (neutrophils, 57.6%); hemoglobin, 11.9 g/dL; platelets, 116,000/ $\mu$ L; serum C-reactive protein, 59.4 mg/L (normal <3.2 mg/L); aspartate



**Figure 1.** (A) Bone marrow smear revealed hemophagocytosis by macrophage. (B) Flow cytometric analysis of CD5 expression on CD8<sup>+</sup> T cells. CD5 downregulation was detected in Epstein–Barr virus-associated hemophagocytic lymphohistiocytosis (EBV-HLH) but not in *Mycoplasma pneumoniae*-associated HLH (MP-HLH). Values represent the percentage of the respective surface molecules expressing T cells. (C) Serum cytokine levels in MP-HLH, EBV-HLH, and severe MP patients before corticosteroid administration. Serum interleukin-2 (IL-2), IL-4, and IL-17 were not detected. IFN- $\gamma$  = interferon- $\gamma$ ; TNF- $\alpha$  = tumor necrosis factor- $\alpha$ .

Download English Version:

<https://daneshyari.com/en/article/5669090>

Download Persian Version:

<https://daneshyari.com/article/5669090>

[Daneshyari.com](https://daneshyari.com)