International Journal of Research in Medical Sciences
Singh AP et al. Int J Res Med Sci. 2023 Jan;11(1):361-363
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20223663

Case Report

Adult-onset Still's disease with secondary hemophagocytic lymphohistiocytosis: a case report

Abhishek Pratap Singh[1]*, Sapna Meena[2], Vijay Achari[1]

[1]Department of Internal Medicine, PMCH, Patna, Bihar, India
[2]Department of Skin and VD, SMS medical college, Jaipur, Rajasthan, India

Received: 29 November 2022
Accepted: 21 December 2022

***Correspondence:**
Dr. Abhishek Pratap Singh,
E-mail: abhishekpratapsingh85@gmail.com

ABSTRACT

Hemophagocytic lymphohistiocytosis (HLH) is an aggressive and life-threatening syndrome of excessive immune activation causing multi-organ dysfunction. HLH can be inherited genetically, but can also be secondary to infections, malignancy, immunosuppression, and autoimmune conditions. Adult-onset Still's disease (AOSD) is an autoimmune disorder characterized by fevers, arthritis, and an evanescent rash. It can rarely predispose patients to HLH. Herein, we report a case of a 20-year-old male patient who presented with fever, joint pain, and rash for 1 month. On evaluation, he was diagnosed as a case of AOSD complicated with secondary HLH. A 23-year-old male, with no significant past medical history and family history, presented to our emergency department with complaints of fever with rash for the last 1 month. He had intermittent high-grade fever with chills, which was associated with evanescent rash involving the trunk and proximal upper limbs. There was no history of joint pain, cough, sore throat, burning micturition, or weight loss. On examination, the patient was conscious and oriented with a temperature of 101 °F, pulse rate of 100/min, blood pressure of 120/84 mmHg, and SpO_2 of 98% on room air. Physical examination revealed salmon-colored maculopapular rash, cervical lymphadenopathy, and mild splenomegaly. The rest of the physical examination was unremarkable. Lab investigations revealed pancytopenia, transaminitis, elevated CRP with low ESR, highly elevated ferritin, elevated LDH, hypofibrinogenemia, and sterile blood and urine cultures. ANA by ELISA, rheumatoid factor, IGRA, dengue IgM, rapid malaria Ag, typhoid IgM, Leptospira IgM and scrub IgM were reported negative. The patient met the diagnostic criteria for AOSD and HLH, and a diagnosis of HLH secondary to AOSD was made. He was given pulse iv methylprednisolone for 5 days, His general condition improved over the week. Then he was switched to oral prednisolone 60 mg once daily. There were no more episodes of fever, and he was discharged after one week on a tapering dose of steroids. AOSD is a rare autoinflammatory condition which often presents as a diagnostic challenge. A high index of suspicion is important for the diagnosis of HLH, and prompt initiation of treatment is of utmost importance, as it is a rapidly progressive life-threatening condition.

Keywords: Autoinflammatory, stills disease, AOSD, HLH, MAS

INTRODUCTION

Hemophagocytic lymphohistiocytosis (HLH) is an aggressive and life-threatening syndrome of excessive immune activation causing multi-organ dysfunction. HLH can be inherited genetically, but can also be secondary to infections, neoplasm, immunosuppression, and autoimmune disorders.[1] Most often HLH presents with high-grade prolonged fever, hepatosplenomegaly, pancytopenia and elevated levels of liver enzymes and hyperferritinemia.[2] AOSD is an autoimmune disorder characterized by fevers, arthritis, and an evanescent rash.[5] AOSD clinically overlaps with HLH and hence poses a diagnostic challenge.[6] Herein, we report a case of a 20-year-old male patient who presented with fever, joint pain, and rash for 1 month. On evaluation, he was

diagnosed as a case of AOSD complicated with secondary HLH.

CASE REPORT

A 23-year-old male, with no significant past medical history and family history, presented to our emergency department with complaints of fever with rash for the last 1 month. He had intermittent high-grade fever with chills, which was associated with an evanescent rash involving the trunk and proximal upper limbs. There was no history of joint pain, cough, sore throat, burning micturition, or weight loss. On examination, the patient was conscious and oriented with a temperature of 101 °F, pulse rate of 100/min, blood pressure of 120/84 mmHg, and SpO_2 of 98% on room air. Physical examination revealed salmon-coloured maculopapular rash, cervical lymphadenopathy, and mild splenomegaly. The rest of the physical examination was unremarkable.

On lab investigation CRP was high (18 mg/L) with low ESR(24 mm/hour), highly elevated ferritin (>16500 ng/mL), elevated LDH (>700), hypofibrinogenemia (0.57 g/L), and sterile blood and urine cultures. ANA by ELISA, rheumatoid factor, IGRA, dengue IgM, rapid malaria Ag, typhoid IgM, leptospira IgM and scrub IgM were reported negative. HIV, HBs antigen, anti-hepatitis C virus antibody, COVID-19 reverse transcription-polymerase chain reaction and IgG antibodies, brucella immunoglobulin M (IgM), and RK 39 antigen were also found to be negative. Abdominal sonography revealed 12.55 CM spleen (Borderline splenomegaly). Chest X-ray and 2D echocardiography were normal. Reactive lymphadenopathy on biopsy of the cervical lymph node.

The patient met the diagnostic criteria for AOSD and HLH, and a diagnosis of HLH secondary to AOSD was made. He was given pulse iv methylprednisolone for 5 days, His general condition improved over the week. Then he was switched to oral prednisolone 60 mg once daily. There were no more episodes of fever, and he was discharged after one week on a tapering dose of steroids.

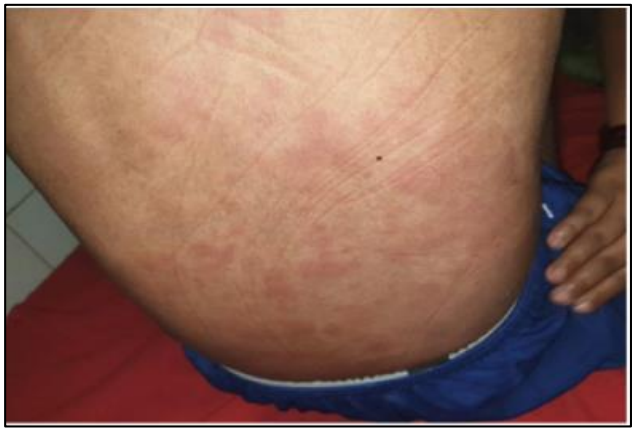

Figure 1: Evanescent maculopapular nonpruritic salmon pink rash.

Table 1: Routine lab investigation.

Date	Day 1	Day 4	Day 10
WBC (cm/m^3)	1900	1800	3600
Hb (gm%)	9.8	9.6	9.3
PLT (Lacs)	1.32	1.44	1.98
ALT/AST (IU/L)	227/440	164/309	188/118

DISCUSSION

AOSD is an inflammatory disorder which is characterised by fevers, rash and arthritis. It was first described in children as "Still's disease" which is an eponymous term for systemic juvenile idiopathic arthritis.[4] Now the term "AOSD" is used for this condition when it is diagnosed after sixteen years of age.[5] The aetiology of AOSD is unclear but both genetic factors and multiple infectious agents have been suggested as an important trigger. A study estimated the yearly incidence of AOSD to be 0.16 cases per 100,000 people, with an equal distribution between males and females.[6] AOSD manifest with high-grade quotidian fever (≥39°C), transient rash (nonpruritic, salmon-coloured, and maculopapular) involving the trunk and extremities, and arthralgia, commonly involving the large joints.[7] Laboratory reports include high leukocyte count, deranged LFT, elevated ESR, and very high serum ferritin levels.[8] The disease is a diagnosis of exclusion and is diagnosed after ruling out other autoimmune, infective conditions, malignancies, and connective tissue diseases.[6] ASOD is diagnosed using Yamaguchi criteria and HLH/MAS is the most serious complication of AOSD, overlapping clinical laboratory features of HLH with it poses a diagnostic challenge and is associated with higher mortality.[7,9] Secondary HLH is precipitated by autoimmune disorders, infections or neoplasms. HLH envelops inappropriate activation of T cells and macrophages, which produces pro-inflammatory cytokines, progressing to cytokine storm and finally resulting in multiple organ dysfunction.[1,11] Secondary HLH is managed by treating the underlying cause which triggers it. The management of AOSD includes drugs like non-steroidal anti-inflammatory drugs (NSAIDs), steroids, anti-rheumatic agents including methotrexate, azathioprine, cyclosporine and other anti-inflammatory drugs for controlling the symptoms.[12] AOSD complicated by HLH confers a poor prognosis in majority of cases but in our case report patient improved on follow-up.

CONCLUSION

AOSD is a rare auto-inflammatory condition which often presents as a diagnostic challenge. A high index of suspicion is important for the diagnosis of HLH, and prompt initiation of treatment is of utmost importance, as it is a rapidly progressive life-threatening condition.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Thomas M, Robert A, Kuruvilla N, Uthamanand C: An unusual presentation of systemic lupus erythematosus as hemophagocytic lymphohistiocytosis in a male. Cureus. 2019;11:e5427.
2. Alexandra H. Filipovich: Hemophagocytic lymphohistiocytosis (HLH) and related disorders. Hematology Am Soc Hematol Educ Program. 2009;(1):127-31
3. Yamaguchi M, Ohta A, Tsunematsu T, Kasukawa R, Mizushima Y, Kashiwagi H et al. Preliminary criteria for classification of adult Still's disease. J Rheumatol. 1992;19:424-30.
4. Still GF. On a Form of Chronic Joint Disease in Children. Med Chir Trans. 1897;80:47-60.9.
5. Bywaters EG. Still's disease in the adult. Ann Rheum Dis. 1971;30(2):121.
6. Magadur-Joly G, Billaud E, Barrier JH, Pennec YL, Masson C, Renou P. Prost A: Epidemiology of adult Still's disease: estimate of the incidence by a retrospective study in west France. Ann Rheum Dis. 1995;54(7):587.
7. Agha-Abbaslou M, Bensaci A M, Dike O. Adult-onset Still's disease: still a serious health problem (a case report and literature review). Am J Case Rep. 2017;18:119-24.
8. Ruscitti P, Ciccia F, Cipriani P, Guggino G, Di Benedetto P, Rizzo A et al. The CD68(+)/ H-ferritin (+) cells colonize the lymph nodes of the patients with adult-onset Still's disease and are associated with increased extracellular level of H-ferritin in the same tissue: Correlation with disease severity and implication for pathogenesis. Clin Exp Immunol. 2016;183:397-404.
9. Bae CB, Jung JY, Kim HA, Suh CH. Reactive hemophagocytic syndrome in adult-onset Still disease: Clinical features, predictive factors, and prognosis in 21 patients. Medicine (Baltimore). 2015;94:e451.
10. Wang R, Li T, Ye S, Tan W, Zhao C, Li Y et al. Macrophage activation syndrome associated with adult-onset still's disease: A multicenter retrospective analysis. Clin Rheumatol. 2020;39:2379-86.
11. La Rosée P, Horne A, Hines M. Recommendations for the management of hemophagocytic lymphohistiocytosis in adults. Blood. 2019;133:2465-77.
12. Kim HA, Sung JM, Suh CH. Therapeutic responses and prognosis in adult-onset Still's disease. Rheumatol Int. 2012;32:1291-8.

Cite this article as: Singh AP, Meena S, Achari V. Adult-onset still's disease with secondary hemophagocytic lymphohistiocytosis: a case report. Int J Res Med Sci 2023;11:361-3.