TRIDHA
Journal of Clinical Cases & Reports
Volume 2022, Issue S7, 2 pages
https://doi.org/10.46619/joccr.2022.5-S7.1039

CASE SERIES

Rituximab Targeting Very Early Systemic Sclerosis (SSc)

Marwa Abo Elmaaty Besar, Adel Abd El Salem, Fatma Hamdy, and Noha Abd El Salem

Internal Medicine Department, Mansoura University, Egypt

Correspondence should be addressed to Marwa Abo Elmaaty Besar, Rheumatology and Immunology Unit, Internal Medicine Department, Faculty of Medicine, Mansoura University, Egypt

Received: 20 April 2022; Accepted: 6 June 2022; Published: 13 June 2022

ABSTRACT

We reported 3 cases.

First Case

A 19-years-old female, Raynaud phenomenon, puffiness of her finger and capillaroscpic finding of scleroderma. Complicated few months, reduced esophageal motility. Due to poor response on immunomodulator mycophenolate, started Rituximab for 3 doses with completely resolved of her skin and esophageal disease.

Second Case

A 24-years-old female presented with typical Raynaud phenomenon, digital tip ulcer proved by Nail fold capillaroscopy; early scleroderma, but complicated by restrictive lung disease, so started Rituximab as strong immunomodulator and safer than cyclophosphamide. Few months later, skin and lung completely resolved.

Third Case

A 27-years-old female presented puffiness of her hand and face with Raynaud phenomenon diagnosed early scleroderma, but her course was aggressive to involve her abdomen and back Modified Rodnan Skin Score (mRSS) was 3. Started Rituximab 3 dose that (mRSS) decreased to 1.

INTRODUCTION

Systemic sclerosis (SSc) is an orphan disease that is characterized by fibrosis of the skin and internal organs. EUSTAR 2011 [1] proposed the following criteria Raynaud Phenomenon (RP), puffy fingers, Marker of autoantibodies and typical capilloscopy finding for diagnosis of Very Early scleroderma.

Due to functional internal organ involvement is common in very early scleroderma, early diagnosis of scleroderma will allow the introduction of immunosuppressive medication that prevent collagen deposition and fibrosis.

Rituximab is a chimeric anti-CD20 monoclonal antibody with significant depletion of CD20+ B cell [2], result in complete depletion of B cells that prevent early fibrotic changes in skin and lung in early scleroderma.

CASE PRESENTATION

First Case

19 years old female presented with typical Raynaud phenomenon (pallor on exposure to cold that progressed to cyanosis) Figure (1) and puffiness of her finger.capillaroscopic finding (decreased number of capillaries, tortuous, enlarged, giant, disarranged, with hemorrhages) Figure (3) typical finding of scleroderma, ANA (Anti-nuclear antibody) positive, anticentromere, anti-SCL70 were negative, so diagnosed as Very early Scleroderma. Started supportive treatment (Vasodilator, Acetylsalicylic acid, Local ointment), partial response. Complicated few months later by dysphagia with repeated attack of regurgitation, barium swallow confirmed; reduced esophageal motility, started immunomodulator mycophenolate mofetil for 6 months, with poor response. started Rituximab infusion for 3 doses with completely resolved of her skin and esophageal disease.

Second Case

24 years old female presented during winter season with (coldness, pallor with mottling of her skin) typical Raynaud phenomenon complicated, with colder, with digital tip ulcer Figure 4). Nail fold capillaroscopy; (decreased number of capillaries, bushy, enlarged, giant, disarranged, with hemorrhage) diagnosed as early scleroderma. Treated with Iloprost (a synthetic prostacyclin analogue) with local ointment with favourable response.

Few months later, complicated by non-productive cough, dyspnea, HRCT (High resolution CT chest) show peripheral/sub-pleural. "Honeycomb" cystic alterations and bronchiectasis that become evident for traction fibrotic, PFT (Pulmonary function test show Decreased FVC and TLC, Reduced DLCO) typical pattern of restrictive lung disease. Due to progressive course strong immunomodulator has been advised, so started Rituximab as strong immunomodulator and safer than cyclophosphamide in young female. Few months later, dyspnea improved, with improved of PFT, but stationary course in HRCT chest, also her skin completely resolved.

Third Case

27 years old female presented puffiness of her hand and face, few months later, during winter season presented with pallor, mottling of her hand and feet, cyanosis typical of Raynaud phenomenon Figure (2) Nail fold capillaroscopy; (decreased number of capillaries, enlarged, giant, disarranged, tortuous capillaries with no hemorrhages) typical pattern of scleroderma, ANA (Anti-nuclear antibody) positive, anticentromere, anti-SCL70 were negative, diagnosed Very early Scleroderma, treated with (Vasodilator, Acetylsalicylic acid, Local ointment), with favorable response, (her hand and feet more warmer). Few months later, patient noticed hardness of skin of abdomen, lower limb and upper limb, Modified Rodnan Skin Score (mRSS) was 2, moderate thickening, due to progressive sever course, strong immunomodulator Started Rituximab infusion 3 dose, patient noticed her skin softer than before, warmer and assessment of (mRSS) 6 months later decreased to 1.

Figure (1) Raynaud Phenomenon of both hand

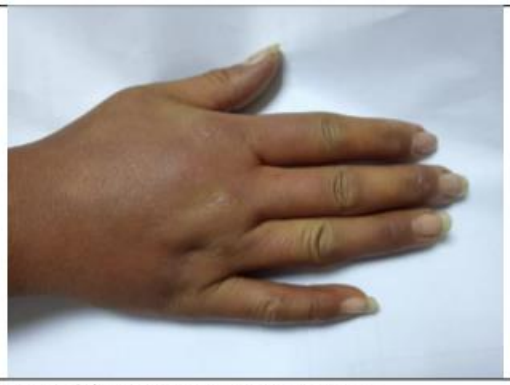

Figure (1) edematous, pallor right hand.

Figure (2) oedematous and telangiectasia of face

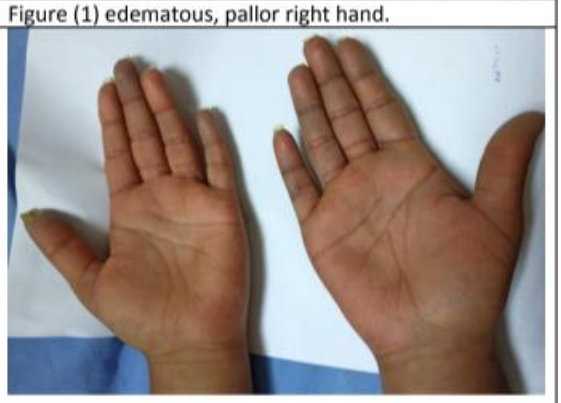

Figure (2) Raynaud phenomenon in both hands.

DISCUSSION

Systemic sclerosis (SSc) is a clinically complex and challenging disease, the most frequent complication of which is interstitial lung disease, which leads to a worse prognosis. B cells have been noted to present in skin and lung biopsies from SSc patients, Lafyatis et al [3], concluded that perivascular B cell infiltrate are a pathological feature of SSc skin.

We reported 3 case, first one very early scleroderma progressed to esophageal involvement within few months, second one complicated with Interstitial lung disease and third one with aggressive skin involvement. All three-case had aggressive course that need strong immunomodulator either cyclophosphamide, mycophenolate mofetil or Rituximab, cyclophosphamide was inferior due to young age and gonadal toxicity and due to failure of mycophenolate mofetil in second case, Rituximab may have superiority in skin, or lung involvement and associated with a good safety profile.

Rituximab is a chimeric anti-CD20 monoclonal antibody with significant depletion of CD20+ B cell, result in complete depletion of B cells and plasmablasts in peripheral blood which lasts up to 24-36 weeks posttreatment [2] so this drug may be a promising therapeutic option in improving skin and lung in SSc.

Daoussis et al [4] proved that following RTX administration, the favorable effects on skin fibrosis could occur via interruption of antibody-mediated stimulation of these receptors. Bosello et al. [5], and added that not only for

a therapeutic effect of B-cell depletion on skin thickening and lung fibrosis in SSc, but also for an accompanying suppression of the cells, cytokines and antibodies that are the pathological hallmarks of this disease. Daoussis et al. [6] concluded that RTX may be of benefit in those CTD- ILD patients with aggressive lung disease that was not responsive to conventional immunosuppression.

CONCLUSION

Early diagnosis of scleroderma before development of fibrosis of internal organ will allow the introduction of immunosuppressive medication, Rituximab is a promising drug that can prevent collagen and matrix deposition, this approach will change the hitherto grim prognosis of SSc for the better.

REFERENCES

1. Jordan S, Distler JHW, Maurer B et al. (2014) Effects and safety of rituximab in systemic sclerosis: an analysis from the European Scleroderma Trial and Research (EUSTAR) group. Annals of the Rheumatic Disease 74(6): 1188-1194
2. Verstappen GM, Kroese FG, Meiners PM et al. (2017) B-cell depletion therapy normalizes circulating follicular Th cells in primary Sj€ogren syndrome. The Journal of Rheumatology 44(1): 49-58.
3. Lafyatis R, Kissin E, York M et al. (2009) B cell depletion with rituximab in patients with diffuse cutaneous systemic sclerosis. Arthritis Rheumatism 60(2): 578-583.
4. Daoussis D, Tsamandas AC, Liossis S-NC et al. (2012) B-cell depletion therapy in patients with diffuse systemic sclerosis associates with a significant decrease in PDGFR expression and activation in spindle-like cells in the skin. Arthritis Research and Therapy 14(3): R145.
5. Bosello S, De Santis M, Lama G et al. (2010) B cell depletion in diffuse progressive systemic sclerosis: safety, skin score modification and IL-6 modulation in an up to thirty-six months follow-up open-label trial. Arthritis Research and Therapy 12(2): R54.
6. Daoussis D, Liossis S-NC, Tsamandas AC et al. (2012) Effect of long-term treatment with rituximab on pulmonary function and skin fibrosis in patients with diffuse systemic sclerosis. Clinical and Experimental Rheumatology 30(2 Suppl 71): S17-S22.