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(CASE REPORT)

GVHD in its sclerodermiform form revealing type 1 diabetes: A case report

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Abstract

Sclerodermiform syndrome is Common in diabetic, it encompasses a set of manifestations that preferentially affect the hands and back, but the association of type 1 diabetes with systemic sclerosis is a rare entity. We report the case of 18-year-old patient from a consanguineous marriage, with a history of acute myeloid leukemia which he was treated by an allograft in France associated with chemotherapy 9 session and immunosuppressants currently in complete remission, diabetic type 1 for 4 years, hypothyroidism under levothyrox 50ug / d. At the interrogation the patient reported the consequences of the graft were marked by stage I cutaneous GVHD confirmed by skin biopsy of which he received corticosteroid therapy at a dose of 10mg / day in addition to neoral or slightly atrophic hyperpigmented macules not sclerotic at the level of the back and the lateral surface of the left foot. The patient also had corticosteroid-induced complications, including diabetes and osteoporosis. On physical examination tendon retraction, elbows and finger, Amyotrophy of the hands, palpable thyroid not increased volume allowed for glycemic imbalance. At TSH biology = 6uui / ml, HBA1C = 8%, anti-GAD antibody negative to cervical ultrasound: thyroid hypotrophy with thyroid nodules classified EUTIRADS 2. The patient is referred for follow-up in dermatology.

The association of sweet diabetes and sclerodermiform lesions is frequently linked to the glycemic imbalance responsible for an accumulation of extracellar matrix and excessive glycation of collagen.

The search for signs of scleroderma should be evoked in front of a diabetic hand syndrome to Watch for and treat associated pathologies.

Keywords: GVHD; Sclerodermiform; Type 1 diabetes; Corticosteroid; Myeloid leukemia

1. Introduction

Type 1 diabetes mellitus is a type of diabetes mellitus usually characterized by insulin-dependence and preceded by an immune reaction to the islets of Langerhans [1]. Type 1 diabetes mellitus is associated with specific human leukocyte antigen (HLA) haplotypes, mostly involving DRB1*0405-DQB1*0401, and invariably shows rapid progression [2].Allogeneic hematopoietic stem cell transplantation (allo-HSCT) has been used widely as a curative treatment for hematological malignancies, with caution taken to avoid the development of graft versus host disease (GVHD). Graft-versus-host disease (GVHD) can occur after an allogeneic stem cell transplant, despite efforts to achieve the best possible match, genetic differences between donor and recipient that can lead to diabetes over time still persist. Although autoimmune disease-like conditions are seen frequently after allo-HSCT, HSCT-related type 1 diabetes mellitus has seldom been reported in the literature.

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2. Case presentation

Patient aged 18-year-old patient from a consanguineous marriage, with a history of acute myeloid leukemia which he was treated by an allograft in France associated with chemotherapy 9 session and immunosuppressants currently in complete remission, diabetic type 1 for 4 years, hypothyroidism under levothyrox 50ug / d. At the interrogation the patient reported the consequences of the graft were marked by stage I cutaneous GVHD confirmed by skin biopsy of which he received corticosteroid therapy at a dose of 10mg / day in addition to neoral or slightly atrophic hyperpigmented macules not sclerotic at the level of the back and the lateral surface of the left neck. The patient also had corticosteroid-induced complications, including diabetes and osteoporosis. On physical examination tendon retraction, elbows and finger, Amyotrophy of the hands, palpable thyroid not increased volume allowed for glycemic imbalance. At TSH biology = 6uui / ml, HBA1C = 8%, anti-GAD antibody negative to cervical ultrasound: thyroid hypotrophy with thyroid nodules classified EUTIRADS 2. The patient is referred for follow-up in dermatology.

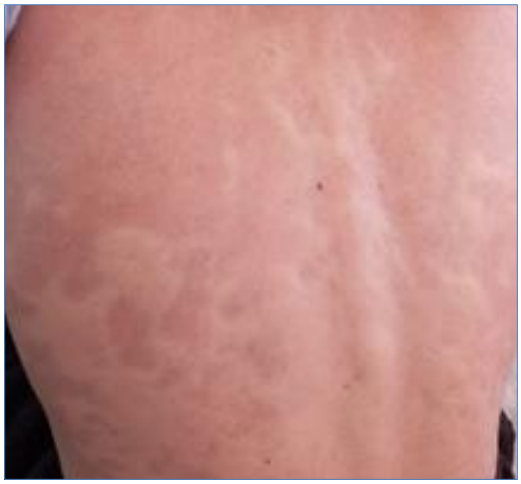

Figure Clerodermiform in skin

3. Discussion

Certain features of the HLA system confer a genetic susceptibility to type 1 diabetes, there may be that the donor has a gene from the HLA system associated with a strong genetic predisposition to Type 1 diabetes. This is a high-risk HLA allele for type 1 diabetes, while it was absent in the recipient [3] .Allo-HSCT-related immune responses, such as GVHD, have become a serious complication, causing major concern. In contrast, allo-HSCT has been held with little caution regarding the development of type 1 diabetes mellitus. Only few cases of type 1 diabetes mellitus development after bone marrow transplantation [4,5] have been reported, and none of them describes type 1 diabetes mellitus development following CBT. [6]

Pre-engraftment syndrome (PES) is an immune response that occurs before engraftment, similar to the onset of type 1 diabetes. T-lymphocytes in the umbilical cord blood are mostly naïve and therefore differ from those in adult peripheral blood. Moreover, T-lymphocytes in the umbilical cord blood change to memory cells approximately 14 days after transplantation and replace the host lymphocytes [7] it is also possible that umbilical cord blood lymphocytes with a type 1 diabetes mellitus-susceptibility haplotype were subjected to antigen presentation to allow expansion and memory formation until day 5; following this, they may have induced an immune response to the recipient's islets of Langerhans.

Bone marrow transplantation leads to significant changes in the immune profile of the host, with an increase in inflammatory molecules (cytokines), which can alter the function of pancreatic beta cells for a time. Total body irradiation during the contionation protocol is also a risk factor for impaired pancreatic beta cell function, as is graft-versus-host disease, which generates inflammatory mediators and cytokines capable of damaging host tissue.

4. Conclusion

The occurrence of diabetes after allogeneic hematopoietic stem cell transplantation may have a multifactorial origin. Assessment of fasting blood glucose or HBA1C should be part of screening for possible diabetes in long-term survivors

of hematopoietic cell transplantation. As anti-GAD antibodies are known to be a predictive marker of type 1 diabetes mellitus [8] we believe that measuring anti-GAD antibody levels before HSCT will be beneficial in predicting type 1 diabetes mellitus onset after transplantation.

Compliance with ethical standards

Acknowledgments

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Disclosure of conflict of interest

The authors declare no conflict of interests.

Statement of ethical approval

The present research work does not contain any studies performed on animals/humans subjects by any of the authors'.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Eisenbarth GS. Type 1 diabetes mellitus. A chronic autoimmune disease. N Engl J Med1986; 314: 1360– 1368.

[2] Kawabata Y, Ikegami H, Kawaguchi Y, et al. Asian-specific HLA haplotypes reveal heterogeneity of the contribution of HLA-DR and -DQ haplotypes to susceptibility to type 1 diabetes. Diabetes2002; 51: 545– 551

[3] MatsumotoK, MatsuyamaT, Sumiyoshi R, et al. Type 1 diabetes mellitus after cord blood transplantation from an unrelated donor with a disease –sensitive haplotype

[4] Wedrychowicz A,CiechanowskaM, Stelmach M,Stelmach M,Starzyk J,Diabetes mellitus after allogeneic hematopoietic stem cell transplantation

[5] 3 Tor O, Frag RK. Atypical diabetes mellitus associated with bone marrow transplantation.

[6] Mellouli F, Ksouri H, Torjmen L, et al. Transmission of type 1 diabetes by bone marrow transplantation: a case report. Pediatr Transplant2008; 13: 119– 122.

[7] Gutman JA, Turtle CJ, Manley TJ, et al. Single-unit dominance after double-unit umbilical cord blood transplantation coincides with a specific CD8+ T-cell response against the nonengrafted unit. Blood2010; 115: 757– 765.

[8] Seissler J, Hatziagelaki E, Scherbaums WA. Modern concepts for the prediction of type 1 diabetes. Exp Clin Endocrinol Diabetes2001; 109: S304– S316.