

Letter to the Editor

Association of Takayasu's Disease and Autoimmune Gestational Diabetes Mellitus

To the Editor;

Takayasu's arteritis (TA) is an immune-mediated disease involving large arteries [1], where associations with other autoimmune conditions including Type 1 diabetes mellitus (DM) have been described [1, 2]. We report a patient with TA, gestational diabetes mellitus (GDM) and positive islet cell (ICA), anti-thyroid and gastric parietal cell antibodies.

A 29-year-old non-obese pregnant woman was seen because of GDM. Seven years before she was diagnosed as TA involving left carotid, superior mesenteric and both renal arteries. Constitutional symptoms responded to prednisolone that was tapered to 14.5 mg/48 h. At 24 weeks of her first pregnancy, a 100 g oral glucose tolerance test (OGTT) was diagnostic of GDM (fasting 72 mg/dL, 1 h 197 mg/dL, 2 h 176 mg/dL, 3 h 123 mg/dL). Autoantibodies against islet cell (5 JDF units), gastric parietal cell (1/40) and thyroid microsomes (1/40) were positive. Isocaloric diet was initiated and from 33 weeks onwards insulin therapy was required to maintain euglycemia. A rupture of membranes supervened at 35 weeks and a healthy male fetus was delivered by cesarean section. Four months after delivery, ICA were positive (5 JDF units) and a 75 g OGTT was normal. After 2 years of uneventful course, she became pregnant again, and remained under 16 mg prednisolone/48 h. At 26 weeks, she was diagnosed as GDM, ICA were positive (5 JDF units) and insulin therapy was required from week 30. Again, membranes ruptured at 35 weeks and a healthy female fetus was delivered by cesarean section. Ten months after her second pregnancy, OGTT was normal and TSH remained normal despite increasing levels of antithyroid antibodies. HLA typing disclosed the following haplotypes: A28, A26; B35, B14; CW4; DRB1*1101, DRB3, DQB1*0301; DRB1*0701,

DRB4, DQB1*0201.

Immune-mediated mechanisms operate in the pathogenesis of TA where associations with other autoimmune diseases including Type 1 DM have been described. In the patient reported, different organ-specific autoantibodies were found in serum (against islet cell, gastric parietal cell and thyroid antigens). Although at low titer, ICA remained positive during a long period including both pregnancies in which the patient presented with GDM. We suggest that autoimmune islet β -cell dysfunction underlies the pathogenesis of GDM in this woman, although glucocorticoid therapy could have contributed. Abnormal glucose tolerance during pregnancy would be the result of high insulin demands in a subject with subclinical β -cell dysfunction. It has already been shown that a subgroup of women with GDM carrying ICA are at high risk for type 1 DM [3] and have a functional β -cell derangement similar to that of first-degree relatives of patients with type 1 DM [4]. The presence of a susceptibility allele for Type 1 DM (DQB1*0201) further supports the notion of autoimmune diabetes in this patient.

Like other autoimmune diseases, TA is associated with certain HLA alleles, especially in the HLA-B and HLA-D regions [1]. The B52 allele (linked to the disease in Asian but not in Caucasian subjects [1]), is not present in this patient who nevertheless carries the HLA-DRB1*0701 gene, which has been recently described in association with TA [5].

References

1. Shelhamer JH, Volkman DJ, Parrillo JE, Lawley TJ, Johnston MR, Fauci AS (1985) Takayasu's arteritis and its therapy. *Ann Intern Med* 103: 121–126.
2. Valentini F, di Folca A (1989) La malattia di Takayasu. Rassegna della letteratura. Studio di un caso familiare di arterite di Takayasu e possibile associazione con il diabete mellito di tipo 1. *Minerva Medica* 80: 1351–1358.
3. Mauricio D, Morales J, Corcoy R, Puig-Domingo M, Pou JM, de Leiva A (1996) Immunology of gestational diabetes: heterogeneity of islet cell antibodies. *Diabetes Reviews* 4: 36–48.
4. Mauricio D, Corcoy R, Codina M, Morales J, Balsells M, de Leiva A (1995) Islet-cell antibodies and beta-cell function in gestational diabetic women: comparison to first-degree relatives of Type I (insulin-dependent)

diabetic subjects. *Diabetic Med* 11: 1009–1014.

5. Park MH, Park YB (1992) HLA typing of Takayasu arteritis in Korea. *Heart Vessels Suppl* 7: 81–84.

Dídac MAURICIO, Rosa CORCOY, Josefa MORALES, A. VIDALLER,
Joan M. ADELANTADO, Apolonia GARCÍA-PATTERSON, Oscar de la
CALLE, Alberto de LEIVA.*

*Hospital de Sant Pau, Universitat Autònoma de Barcelona,
Barcelona, Spain*

**C.S.U. Bellvitge, Universitat de Barcelona, Barcelona, Spain*