



Oocyte cryopreservation in a patient with premature ovarian failure due to autoimmune polyendocrine syndrome type 2

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CATEGORIES: AUTOIMMUNE ENDOCRINE DISEASE

Background

Autoimmune polyendocrine syndrome type 2 (APS 2) is a complex disorder characterised by the obligatory occurrence of Addison disease in combination with thyroid autoimmune disorder and/or type 1 diabetes.

APS 2 is the most common autoimmune polyendocrine syndrome, prevalence is about 4-5 per 100.000 inhabitants. It is primarily manifest in adult age (20-60 years) and female are three times more frequently affected than males.

APS 2 frequently clusters in families, in fact several generations are often affected by one or more component diseases, suggesting autosomal-dominant inheritance with incomplete penetrance.

Premature ovarian failure (POF) is defined as sustained amenorrhea before the age of 40 years, FSH levels higher than 40 UI/L and hypoestrogenism associated with infertility, it may be due to autoimmune lymphocytic oophoritis and, when accompanied by other autoimmune diseases, may be part of APSs.

	Finnish series 1990 68 patients	Iran Jude series 1992 23 patients	Italian series 1998 41 patients	Norwegian series 2001 20 patients	Our French series 19 patients
ENDOCRINOPATHIES					
Hypoparathyroidism	79%	96%	93%	85%	63%
Adrenal insufficiency	72%	22%	73%	80%	79%
Hypogonadism	60% F 14% H	3 F 3 H	60% F 0 H	51% F 0 H	71% F 0 H
Type 1 diabetes	12%	4%	2,5%	0	5%
Hypothyroidism	3%	3%	10%	10%	5%
Hypophysitis	ND	ND	7%	0	5%
OTHER AUTOIMMUNE DISORDERS					
Pernicious anemia					
Malabsorption	13%	9%	15%	0	21%
Hepatitis	18%	ND	15%	10%	26%
Alopecia	12%	ND	20%	5%	11%
Vitiligo	29%	13%	37%	40%	53%
	13%	ND	12%	25%	21%
MUCO-CUTANEOUS CANDIDIASIS	100%	17%	83%	85%	89%

Prevalence of autoimmune diseases in APS II patients of previous case series. Wémeau JL et al. 2013

Case Presentation

We present a case of APS 2 with POF that successfully underwent to oocyte cryopreservation.

She presents a positive family history for autoimmune disease, in fact her father was diagnosed with type 1 diabetes at the age of 45 and her mother was affected by hypothyroidism due to Hashimoto's thyroiditis.

The patient has been followed up since the age of 5 years when she had been diagnosed for celiac disease. Duodenal biopsy showed complete villous atrophy. Since then she had strictly performed gluten free diet.

She showed thyroid ultrasound suggestive for thyroiditis since the age of twelve and presented persistent anti-thyroid antibodies two years later, but never needed for L-tiroxine replacement.

HLA aploptype was: DRB1 03, 04; DRB3, DRB4, DQA1 05,03, DQB1 02,08.

She had menarche at 14 years old with normal cycles for 4 years, followed by oligomenorrhea for 5-6 months and then secondary amenorrhea at the age of 21 years. Biochemical investigations showed hypergonadotropic hypogonadism and adrenal insufficiency with positivity of ovarian and adrenal autoantibodies.

	LH mcU/ml	FSH mcU/ml	Estradiol pg/ml	Progesterone ng/ml	ACTH pg/ml	Cortisol ng/ml
Basal	55.5	20.9	<12	1.38	>1250	14
30' after GnRH stimulation	>200	27.3	-	-	-	-
60' after GnRH stimulation	188.3	39	-	-	-	-

Transvaginal ultrasonography did not show any relevant findings in the pelvic organs.

The patient underwent ovarian hyperstimulation with recombinant FSH (Follitropin alpha) along with GnRH antagonist. Oocyte retrieval was performed after 57 days of stimulation. 13 oocytes were retrieved and cryopreserved with vitrification.

Conclusion

To our knowledge this is the first of POF due to APS 2 that underwent successfully to oocyte cryopreservation. APS 2 is a rare disorder that could involve many endocrine organs, in order to preserve fertility, it is important to screen periodically these patients to identify precociously women at high risk.

References

- Cutolo M. Autoimmune polyendocrine syndromes. Autoimmunity Reviews 2014, 13:85-89
- Wémeau JL, Proust-Lemoine E, Ryndak A, Vanhove L. Thyroid autoimmunity and polyglandular endocrine syndromes. Hormones 2013, 12(1): 39-45
- Kahaly GJ. Polyglandular Autoimmune Syndrome Type II. Presse Med 2012, 41: e663-670
- Betterle C, Lazzarotto F, Presotto F. Autoimmune polyglandular syndrome type 2: the tip of an iceberg? Clin Exp Immunol 2004, 137:225-233
- Kauffman RP, Castracane VD. Premature ovarian failure associated with autoimmune polyglandular syndrome: pathophysiological mechanisms and future fertility. Journal of Women's Health 2003, 12: 513-520

