

Nutritional status and respiratory function in patients affected by cystic fibrosis and glucose metabolism derangements after 4 years of insulin therapy with Glargine.

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BACKGROUND

The glucose metabolism derangements (GMD) can have an important impact on nutritional status and respiratory function in patients with cystic fibrosis (CF).

OBJECTIVES

The aim of our study is to evaluate the effects of four years of glargine therapy in patients affected by CF and GMD.

METHODS

All CF patients attended to the Center of Cystic Fibrosis of our Department were screened by oral glucose tolerance test. All CF subjects showing the following GMD were enrolled into a protocol of treatment with insulin glargine:

- Cystic Fibrosis Related Diabetes (CFRD), patients with glycemia at T0' ≥ 126 mg/dL and/or T120' ≥ 200 mg/dL;
- Impaired Glucose Tolerance (IGT), patients with glycemia at T120' ≥ 140 mg/dL;
- Abnormal Glucose Tolerance (AGT), patients with glycemia at T30' and/or T60' and/or T90' ≥ 140 mg/dL.

The starting dose was 0.2 UI / kg / day.

RESULTS

Eighteen patients with GMD (6 CFRD, 6 IGT, 6 AGT), mean age 10.7 ± 2.4 years at the beginning of the study, completed 4 years of treatment with glargine (average dose: 0.22 IU/kg/day, range: 0.11-0.24).

Body mass index (BMI), BMI z-score, Forced expiratory volume in the first second (FEV1%) and number of respiratory exacerbations/year were assessed longitudinally by 2 years before the beginning of therapy to 4 following years.

	-2 years	-1 year	0	+1 year	+2 years	+3 years	+4 years	p
BMI (kg/m²)	16,3 \pm 2.5	16,5 \pm 2,4	17,1 \pm 2.5	18, \pm 2,7	18,7 \pm 2,6	19,1 \pm 2,5	19,4 \pm 2.5	<0.05
BMI z-score	-0,3 \pm 1.1	-0,3 \pm 0,9	-0,2 \pm 0.8	-0,1 \pm 0,9	0,07 \pm 0,8	-0,1 \pm 0,7	-0,2 \pm 0.7	n.s.
FEV1%	95,3 \pm 13.4	93,1 \pm 17,8	91,6 \pm 19.2	94,7 \pm 19,0	91,9 \pm 18,3	91,1 \pm 21,6	94,3 \pm 15.3	n.s.
Exacerbations/year	2 \pm 1.4	1,9 \pm 1,5	1,5 \pm 1	1,3 \pm 1,1	1,5 \pm 1,2	1,3 \pm 1,3	1,1 \pm 1.2	<0.05

CONCLUSION

Glargine treatment seems to reduce the number of pulmonary exacerbations in patients affected by CF and GMD; moreover it seems to retard the decay of nutritional parameters and of respiratory function.

