Metformine adjuvant therapy in differentiated thyroid carcinoma patients with or without diabetes mellitus: a controlled cohort study.

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OBJECTIVES

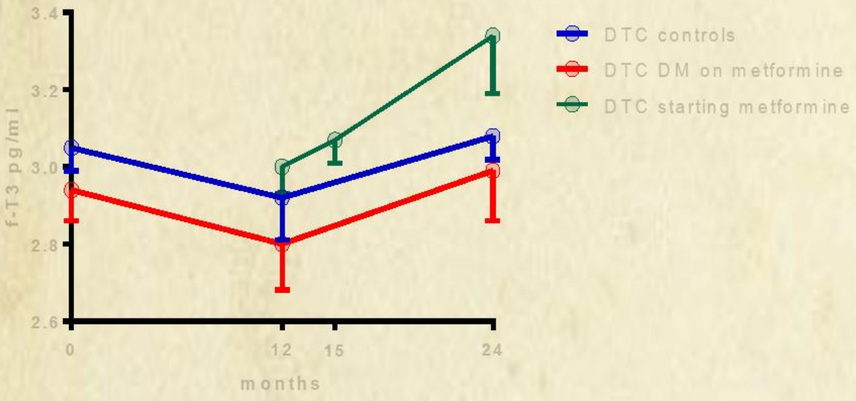
The DTC is the most common endocrine neoplasia and its evolution after total Tx , RAI and therapy with L-T4 is generally favorable. In vitro metformin shows an anti-proliferative effect and, in vivo, seems to reduce TSH levels in type 2 diabetes mellitus (T2DM) and DTC's aggressiveness in DTC subjects with T2DM. Studies in vivo, however, are limited. The aim of this study was to evaluate the adjuvant role of metformin in the DTC diabetic and non-diabetic.

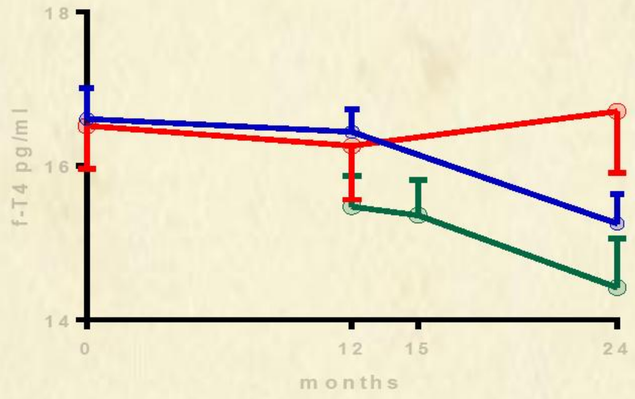
	Gr 1 DTC DM on metformin	**Gr 2** DTC starting met	**Gr 3** DTC controls	**P**
Number of patients	30	83	84	
RAI (%)	53	81	69	0,01
L-T4 µg/week (median±SEM)	858,8 ± 31,9	790,1 ± 22,5	851,7 ± 25,4	0,1
Statin (%)	43	17	26	0,02
BMI Kg/m^2 (median±SEM)	30.9 ± 1.0	25.8 ± 0.5	28.0 ± 0.5	<0.0001

RESULTS

The RAI therapy was carried out with lower percentage in Gr 1 than in the other two groups but Gr 1 showed, however, a greater number of subjects without normalization of thyroglobulin.

	Gr 1 DTC DM on metformin	**Gr 2** DTC starting met	**Gr 3** DTC controls	**P**
TSH (mlU/l) (median±SEM)	1.56 ± 0,67	0,70 ± 0,15	0,75 ± 0,11	0,02
f-T4 (pg/ml) (median±SEM)	16,2 ± 0,6	16,5 ± 0,4	15,5 ± 0,4	0,33
f-T3 (pg/ml) (median±SEM)	2,3 ± 0,1	3,0 ± 0,1	3,0 ± 0,1	0,40
Tg (% detectable)	17	5	10	0,13
HbA1c (%) (median±SEM)	7,0 ± 0,2	5,6 ± 0,1	5,5 ± 0,1	0,0001
LDL-c (mg/dl) (median±SEM)	119,4 ± 8,7	125,9 ± 3,4	127,7 ± 4,3	0,2

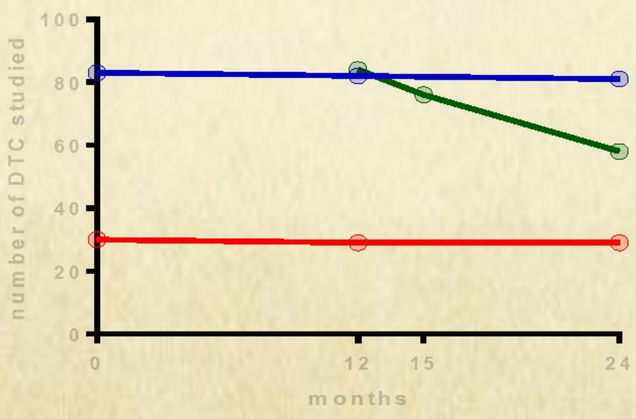




Metformin adjuvant therapy resulted in a increase of f-T3 levels in Gr 3 (P=0.02) improving the utilization of the peripheral hormone; f-T4 and TSH had unsignificantly changed.

In absence of significant changes in the percentage and dosages of statin therapy, in only Gr 3, after the start of metformin, an improvement of the lipid profile was noticed (T12 vs T15 P<0.01, T12 vs T24 P<0.001).

Starting metformin, in Gr 3, caused drop-out for the poor compliance and collateral effects. The most frequently reported adverse events were diarrhea and epigastric pain.



CONCLUSIONS

Our data confirm the favorable evolution of the DTC and the high number of DTC with obesity and metabolic disorders. In our T2DM with DTC we have conflicting data: a reduction in the use of RAI therapy but a higher number of subjects with detectable thyreoglobulin. Starting metformin in DTC patients without T2DM is difficult, but its effects seem favorable on the lipidic status. Our data don't seem to indicate that the drug has an adjuvant action on TSH level. A longer observation time and a wider coverage are necessary to have conclusive results.