

# Efficacy of two different L-thyroxine formulations in dyspeptic patients with subclinical hypothyroidism

"Thyroid (non-cancer) EP-976"



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## INTRODUCTION AND OBJECTIVES

Levo-thyroxine (LT4) formulations are available on tablets (TAB) or liquid solution (SOL). LT4 TAB absorption could be affected by several gastric diseases as Helicobacter Pylori (HP) infection or chronic atrophic gastritis (CAG)<sup>1-2</sup>, instead no data are available on absorption of the LT4 SOL in these conditions. The aim of the study was to compare the efficacy of TAB or SOL LT4 formulations in patients with dyspeptic syndrome (DS) and subclinical hypothyroidism (SH) due to chronic autoimmune thyroiditis

## METHODS

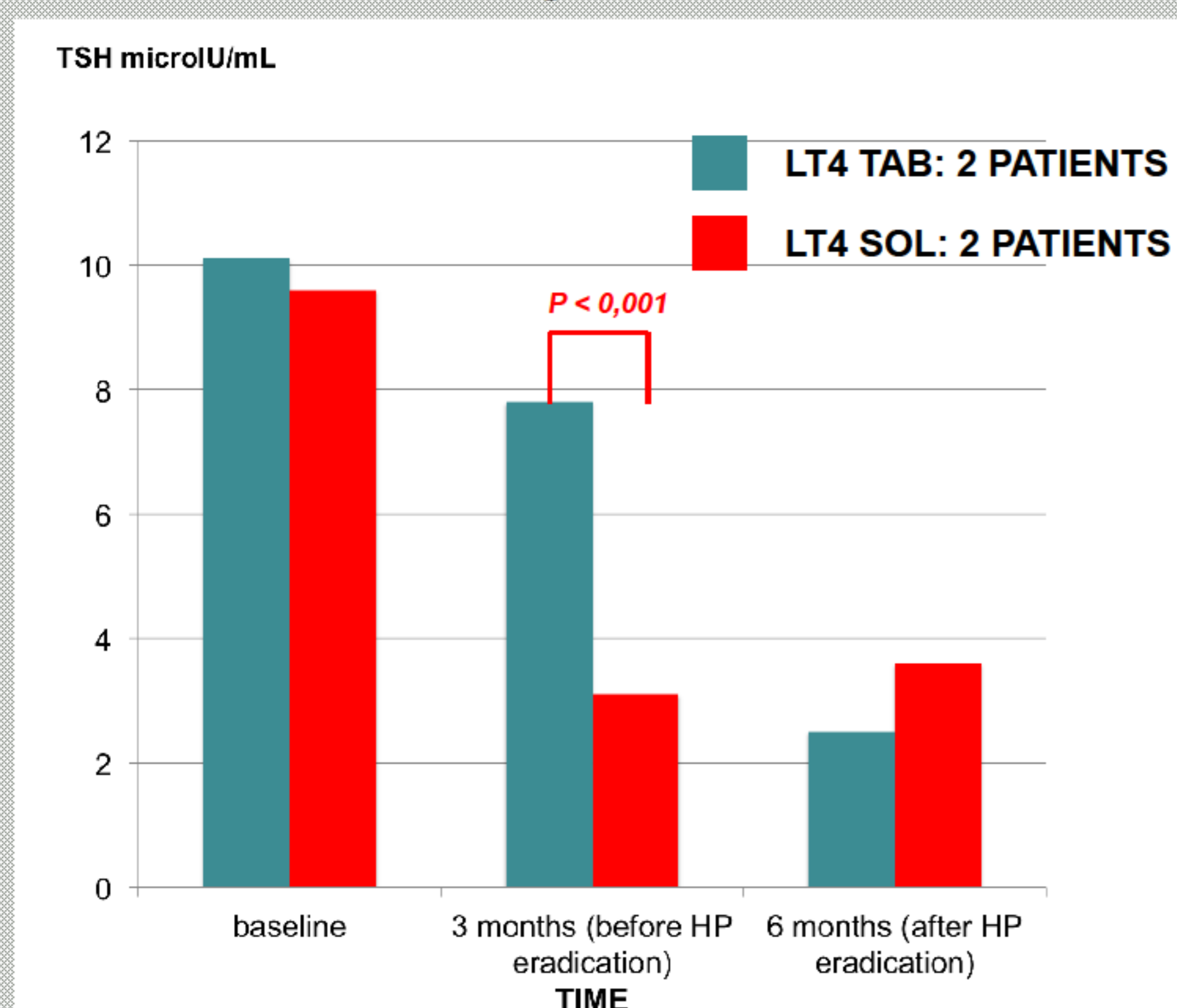
20 naïve patients (15 females, 5 males, 27 to 55 yrs), with DS and SH were included. All were firstly investigated by esophageal gastric duodenal endoscopy and urea-breath test and divided in: group A n=4 patients had HP infection; group B: n=4 with CAG; group C: n=6 with simple gastritis and n=6 with no organic alterations. LT4 treatment was randomized between TAB or SOL; it was started and administered at a fixed dose of 1.5 µg/kg/day in all patients. TSH and fT4 were assessed before and 3 and 6 months after treatment. On group A HP eradication was performed at the 3th month.

## RESULTS

In all groups, no difference in basal TSH levels were shown within patients assigned to different treatments (Group A:  $TSH_{tab}=10,1\pm 1,8$ ,  $TSH_{sol}=9,6\pm 2,2$ ; Group B:  $TSH_{tab}=7,1\pm 1,2$ ,  $TSH_{sol}=6,9\pm 2,1$ ; Group C:  $TSH_{tab}=7,9\pm 1,7$ ,  $TSH_{sol}=8,1\pm 2,1$ ). At T3, TSH values on group A (before eradication of HP) significantly decreased on patients treated with SOL, while on group B and C, equally decreased without difference within two formulations (Group A:  $TSH_{tab}=7,8\pm 2,6$  vs  $TSH_{sol}=3,1\pm 1,8$ ,  $p<0,001$ ; Group B:  $TSH_{tab}=2,4\pm 1$ ,  $TSH_{sol}=2,6\pm 1,2$ ; Group C:  $TSH_{tab}=1,7\pm 1,4$ ,  $TSH_{sol}=2,5\pm 1,6$ ). At T6, TSH levels on group A (after eradication of HP) were in the normal range with no significant changes within two formulations; on Group B and C, TSH levels were normal without significant difference within two formulations (Group A:  $TSH_{tab}=2,5\pm 2,6$  vs  $TSH_{sol}=3,6\pm 1,8$ ,  $p=ns$ ; Group B:  $TSH_{tab}=3,5\pm 2,2$  vs  $TSH_{sol}=2,1\pm 1,8$ ,  $p=0,093$ ; Group C:  $TSH_{tab}=1,9\pm 2,1$ ,  $TSH_{sol}=2,0\pm 1,7$ ). In each groups, no differences were shown on fT4 values within two formulations.

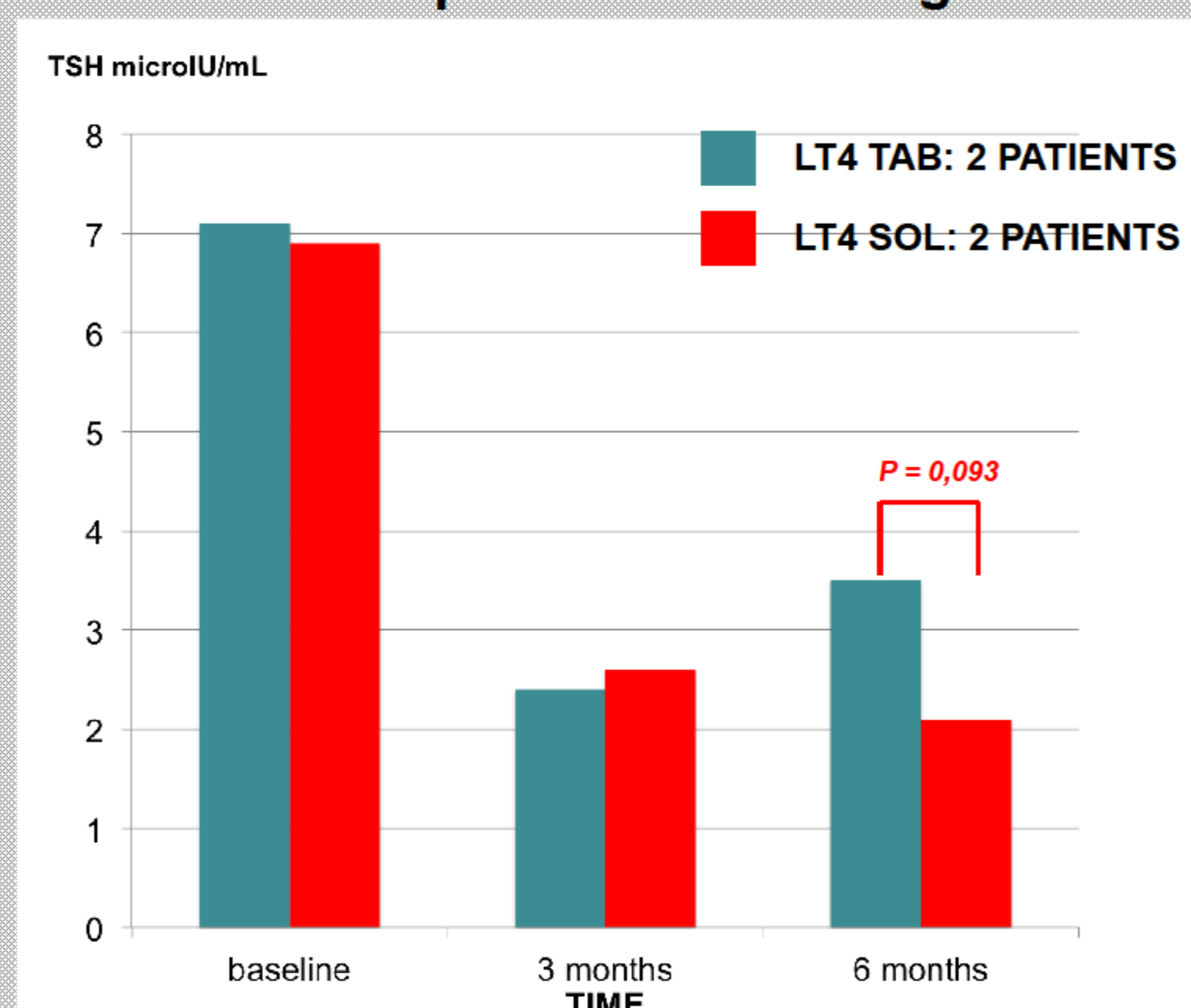
### GROUP A

#### Helicobacter Pylori infection



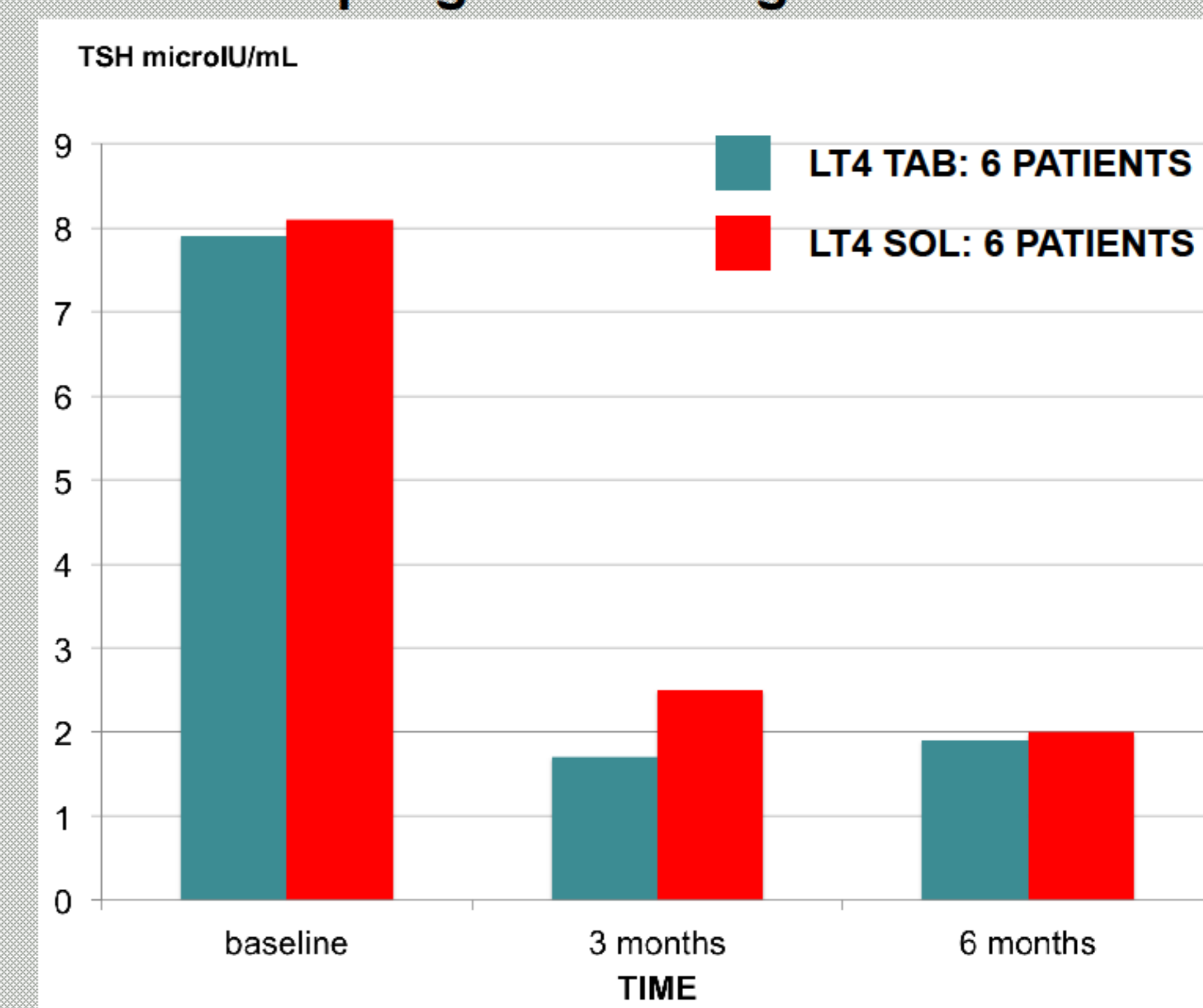
### GROUP B

#### chronic atrophic autoimmune gastritis



### GROUP C

#### simple gastritis/no gastric alteration



## CONCLUSIONS

this preliminary report suggests that LT4 TAB or SOL are equally efficient to treat SH in dyspeptic patients without gastric alterations or with simple gastritis or CAG, while LT4 SOL seems to be more efficient than TAB in patients with HP infection, independent of its eradication.

## REFERENCES

- Centanni M, Gargano L, Canettieri G, Viceconti N, Franchi A, Delle Fave G, Annibale B. Thyroxine in goiter, Helicobacter pylori infection, and chronic gastritis. N Engl J Med. 2006 Apr 27;354(17):1787-95.
- Bugdaci MS, Zuhur SS, Sokmen M, Toksoy B, Bayraktar B, Altuntas Y. The role of Helicobacter pylori in patients with hypothyroidism in whom could not be achieved normal thyrotropin levels despite treatment with high doses of thyroxine. Helicobacter. 2011 Apr;16(2):124-30.

