

# Skin autofluorescence and serum carboxymethyllysine levels in hypothyroid and hyperthyroid patients

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## OBJECTIVES

Levels of thyroid hormones may effect the levels of the advanced glycation products. The aim of this study was to evaluate the relationship between skin autofluorescence (SAF), and serum advanced glycation end products (AGEs) parameters in hypothyroid and hyperthyroid patients.

## METHODS

Newly diagnosed or untreated 103 overt and subclinical hypothyroid patients (42±13 yrs) and 50 overt-subclinical hyperthyroid patients (46±13 yrs) and 50 healthy control subjects (47±10 yrs) were enrolled after excluding diabetes and chronic renal failure. Serum carboxymethyllysine (CML) and receptor for advanced glycation end products (sRAGE) levels were measured with ELISA. TSH and fT4 measured

Skin autofluorescence (SAF), a non-invasive measurement method, reflects tissue accumulation of AGEs. Skin AF was measured using the AGE-Reader (DiagnOptics B.V., Groningen, The Netherlands).

## RESULTS

SAF measurements were 1.82±0.04, 1.63±0.3, 1.80±0.4 arbitrary Units (AU) for hypothyroid, euthyroid and hyperthyroid groups respectively (p=0.04). Serum CML levels were 8.2±2.8 ng/ml, 8.0±3.3 ng/ml and 10.2 ng/ml for hypothyroid, euthyroid and hyperthyroid groups respectively (p=0.01). sRAGE levels were similar between the groups. TSH and SAF was positively correlated (r=0.25, p=0.02) in hypothyroid group while showed a negative correlation in hyperthyroid group (r=-0.36, p=0.04). There was no correlation between CML and sRAGE levels and SAF

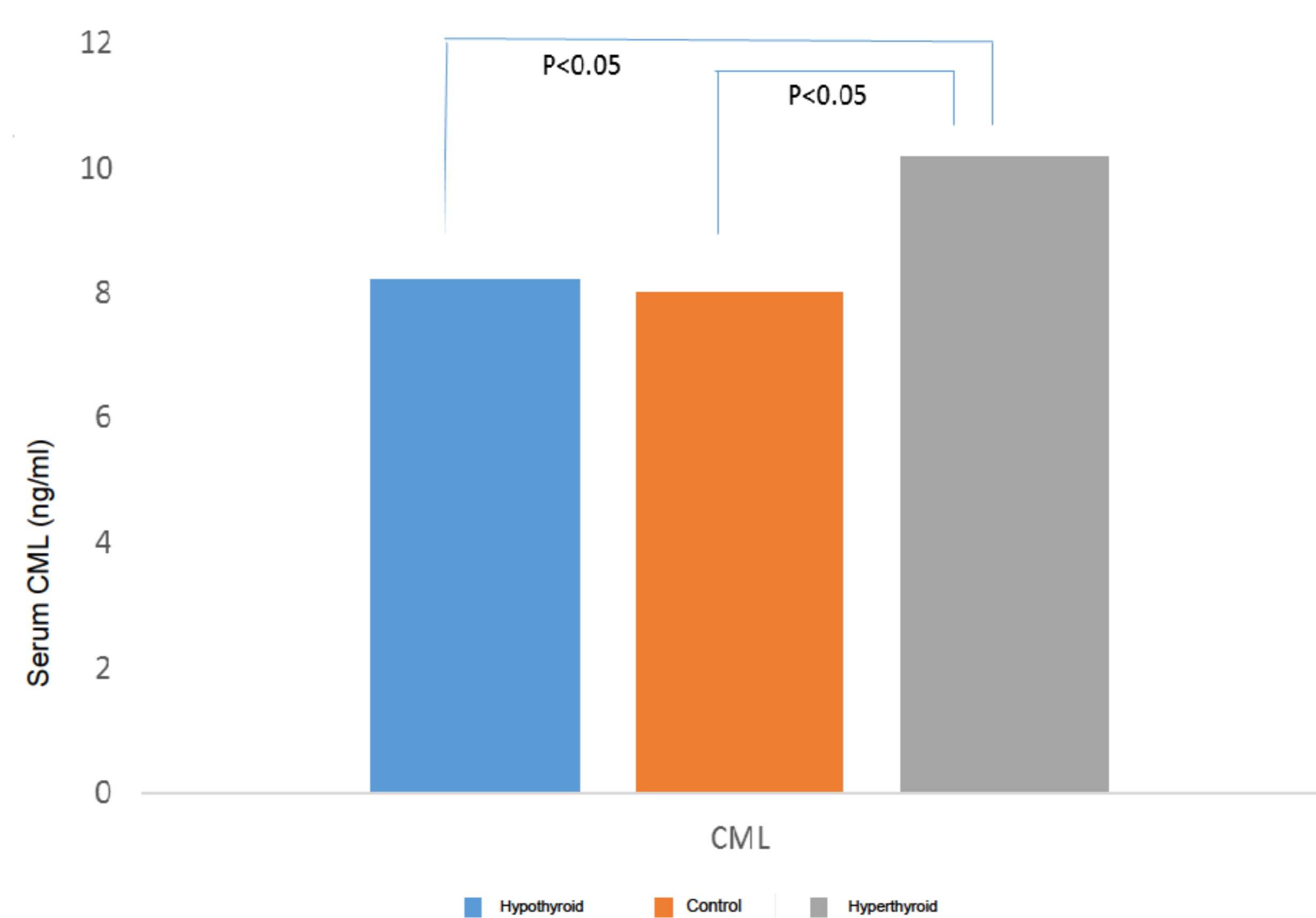


Figure 1: serum CML levels in hypothyroid, hyperthyroid and control groups

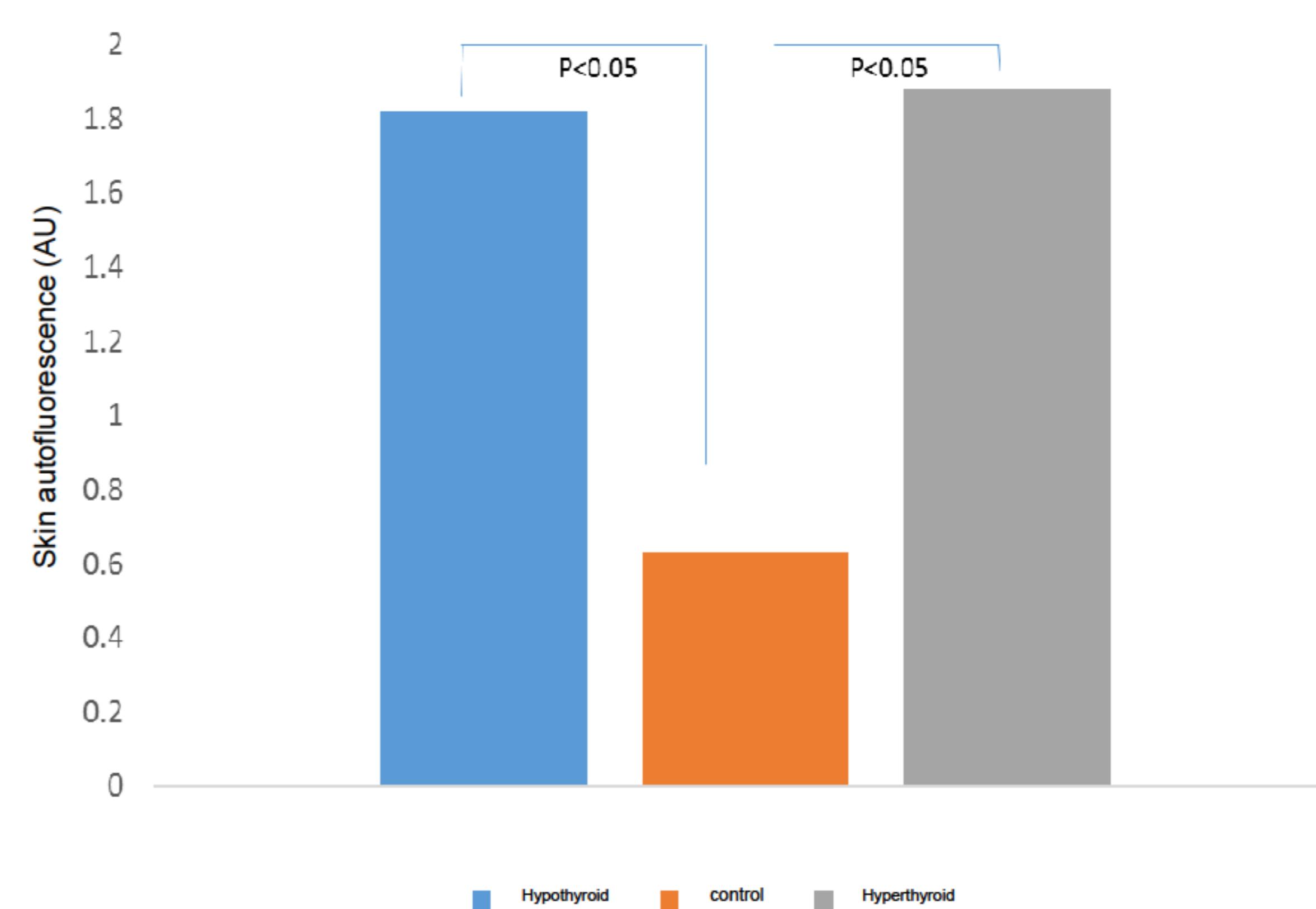


Figure 2: Skin autofluorescence (SAF) measurements in study groups

## CONCLUSIONS

Accumulation of skin AGEs is increased in hypothyroid and hyperthyroid patients compared to euthyroid subjects. Thyroid status may modulates glycoxidation process. Although longitudinal studies needed, SAF measurement, as a noninvasive method, may be useful for identification of clinical risk factors in hypo and hyperthyroid patients

