Concentrations of the Vitamin D Metabolite 1,25(OH)2D and its relationship to inflammatory and metabolic parameters in diabetes type 2
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BACKGROUND
While 25-hydroxy-vitamin D (25(OH)D) has been thoroughly investigated, the role of active vitamin D metabolite 1,25(OH)2D in a metabolic syndrome still remains unclear.

OBJECTIVE
The aim of our study was to determine the association between 25(OH)D and 1,25(OH)2D levels and several metabolic parameters and inflammatory markers in postmenopausal women with diabetes type 2 (T2DM).

RESULTS
Serum 25(OH)D concentrations were highest in the lean diabetics compared with obese diabetics and control subjects (p<0,0007) and were significantly associated with fasting glucose, insulin, HOMA-B, BMI and PAI-1. In diabetic patients 25(OH)D levels were positively associated with HDLC (p<0,01) and negatively with triglycerides (p<0,04) and PAI-1 (p<0,001). Serum 1,25(OH)2D concentrations were significantly higher in control obese subjects (77,4±17,0 nmol/l) compared with adipose diabetics (p<0,001), with no difference in relation to lean diabetics. Fasting glucose and HbA1c negatively correlated (p<0,01), whereas cholesterol and LDLc positively correlated (p<0,01) with 1,25(OH)2D. Furthermore, 25(OH)D correlated with PAI-1 in all subjects while 1,25(OH)2D correlated with fibrinogen but only in obese control subjects.

CONCLUSION
Conclusions: In type 2 diabetic women low serum 25(OH)D and 1,25(OH)2D levels were associated with atherogenic dyslipidemia, glucose parameters and low grade inflammation. The active hormonal form of vitamin D, 1,25(OH)2D correlated with cholesterol, LDLC and fibrinogen, while 25(OH)D correlated with triglycerides, HDLC and PAI-1, suggesting that there may be an independent mechanism of action for 1,25(OH)2D in relation to metabolic dysregulation.