Pressure pain threshold and β-endorphins plasma level are higher in lean polycystic ovary syndrome women.

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OBJECTIVES
The aim of this study was to determine pressure pain threshold and β-endorphin plasma level in lean women with polycystic ovary syndrome (PCOS) and healthy controls. The associations between β-endorphins and pressure pain threshold were also investigated.

METHODS
In 48 lean women with polycystic ovary syndrome and 38 lean women without this disorder plasma β-endorphins and pressure pain thresholds were measured.

RESULTS
Figure 1. Beta endorphin levels in lean women with polycystic ovary syndrome (PCOS) and controls.

Figure 2. Pressure pain threshold (PPT) value measured on trapezius muscle in PCOS group and healthy controls.

Figure 3. Pressure pain threshold (PPT) value measured on deltoid muscle in PCOS group and healthy controls.

The β-endorphins level was higher in the PCOS group compared to the controls (15.5 ±4.37 pg/ml vs 6.9 ± 2.47 pg/ml, p < 0.0001). In PCOS group pressure pain thresholds measured on deltoid and trapezius muscles were higher compared to the controls (9.33 ± 1.3 kg/cm² vs 5.19 ± 0.57 kg/cm², p < 0.001; 8.23 ±1.04 kg/cm² vs 4.79 ± 0.55 kg/cm², p < 0.001). The β-endorphin levels positively correlated with pressure pain thresholds in polycystic ovary syndrome group. Increase in β-endorphin level of 1 pg/ml was associated with increase of pressure pain threshold on deltoid muscle of 0.23 kg/cm² (R= 0.632, p=0.011) and of 0.18 kg/cm² on trapezius muscle (R= 0.588, p =0.037).

CONCLUSIONS
Conclusion: β-endorphin serum level as well as pressure pain threshold are higher in lean PCOS group than in lean healthy controls. We found correlations between β-endorphin levels and pressure pain threshold in the PCOS group. It may indicate the role of endogenous opioids in the pathogenesis of PCOS and also that increases in circulating plasma β-endorphins concentration can increases pressure pain threshold in PCOS women.

References

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