Insulin Suppresses Fatty Acid Binding Protein and Omentin Levels

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ABSTRACT

Circulating omentin and Fatty Acid Binding Protein (FABP) have been reported to be altered in insulin resistance (IR). However, the role of insulin in the regulation of these adipokines is unclear. The current study evaluated the effects of hyperinsulinemia on plasma levels of omentin and FABP-4 by measuring omentin and FABP responses to elevated insulin in a group of healthy participants.

INTRODUCTION

Our results show for the first time that hyperinsulinemia reproducibly suppresses omentin and FABP-4 in healthy humans, suggesting a potential role for insulin in regulating omentin and FABP-4 levels.

METHODS

Participants underwent serial sampling for glucose, insulin, C-peptide, omentin and FABP-4 at baseline (BL) and during steady state (SS) of the LD and HD periods. Participants underwent a second identical procedure after 14 days to assess reproducibility.

Correlation of omentin levels between Period 1 and Period 2: r=0.51 during LD and r=0.36 during HD insulin infusion.

Correlation of changes in insulin, C-peptide, and FABP-4 levels during HD insulin between Period 1 and Period 2: r=0.09 and r=0.06 respectively.

SUMMARY

Our results show for the first time that hyperinsulinemia reproducibly suppresses omentin and FABP-4 in healthy humans, suggesting a potential role for insulin in regulating omentin and FABP-4. Furthermore, omentin and FABP-4 are negatively associated with insulin action suggesting a potential role in insulin resistance and possibly atherosclerosis.

CONCLUSION