Role of mineralocorticoid receptor in insulin resistance.


Source

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Abstract

PURPOSE OF REVIEW:

Recent data suggest that mineralocorticoid receptor activation can affect insulin resistance independent of its effects on blood pressure. This review discusses new evidence linking mineralocorticoid receptor to insulin resistance and the underlying mechanisms of these effects.

RECENT FINDINGS:

Observational studies have shown mineralocorticoid activity to be associated with insulin resistance irrespective of race, blood pressure or body weight. Increased mineralocorticoid activity may be the common link between obesity, hypertension, dyslipidemia and insulin resistance, features that make up the metabolic syndrome. Treatment of primary aldosteronism is associated with a decrease in insulin resistance and provides one of the most convincing evidences in favor of the contribution of mineralocorticoid receptor to insulin resistance. Dietary salt restriction, which increases aldosterone levels, is also associated with an increase in insulin resistance. Potential mechanisms by which mineralocorticoid receptor may contribute to insulin resistance include a decreased transcription of the insulin receptor gene, increased degradation of insulin receptor substrates, interference with insulin signaling mechanisms, decreased adiponectin production and increased oxidative stress and inflammation. Advantages of mineralocorticoid receptor antagonists on insulin resistance have been demonstrated in animal models.

SUMMARY:

There may be a benefit of mineralocorticoid receptor antagonists in human insulin resistance states, but more clinical research is needed to explore these possibilities.
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