

Aldosterone Production and Signaling Dysregulation in Obesity

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Abstract

In the past decades, we have extended the view of aldosterone effects beyond epithelial tissues. New evidence regarding the aldosterone/mineralocorticoid receptor (MR) pathway in active metabolic tissues, including adipose tissue, has confirmed its pathogenic role in systemic inflammation, endothelial dysfunction, insulin resistance, and dyslipidemia. Obesity, a current epidemic worldwide, increases aldosterone production by several adipocyte factors such as leptin but is also associated with local aldosterone production. In addition, obesity can modulate MR activation leading to signaling dysregulation and a pro-inflammatory profile of adipocytes. Current knowledge have deciphered that this phenotypical differences of obesity may be explained, at least in part, by novel non-genomic activation of MR, new inducers of aldosterone synthesis, and probably by several epigenetic modifications. In addition, with the understanding of the complex interplay of obesity, hormones, and receptors, targeted pharmacological therapy is expected and is currently under active research..