

Tip 6 (September 2009)

Treating hypertension in the metabolic syndrome

Obesity, insulin resistance, and hypertension commonly cluster with other risk factors for cardiovascular and chronic kidney disease to form the metabolic syndrome. This syndrome carries with it a significantly higher risk of cardiovascular events than a simple summation of the individual risk factors, as well as a high risk of progression to overt diabetes. Management of the metabolic syndrome includes lifestyle intervention, with an emphasis on weight loss, as well as aggressive pharmacotherapy of individual risk factors.

Management of hypertension in particular, is often difficult in the metabolic syndrome, and “resistant hypertension” is common. Multiple mechanisms of hypertension are postulated, including activation of the renin-angiotensin system, activation of the sympathetic nervous system, and renal sodium handling abnormalities. Recently, there is an increasing body of evidence that aldosterone is important in the pathogenesis of the metabolic syndrome by (amongst other things) promoting insulin resistance, impairing endothelial function and the release of proinflammatory adipokines from adipose tissue – all of which may cause or worsen hypertension.

Effective antihypertensive treatment in the metabolic syndrome usually requires 3-4 drugs. Effective regimens will usually include a full dose of ACE-inhibitor or ARB, and a thiazide diuretic (dose of which may need to be titrated up for efficacy – renal sodium handling abnormalities are very important in this condition). In patients resistant to 3-drug combinations (including a good dose of thiazide) addition of an aldosterone antagonist (spironolactone) is often a useful strategy.

1. *Secondary Hypertension: Obesity and the metabolic syndrome. Singer GM, Setaro JF. J.Clin.Hypertens.2008;10:567-574*
2. *Narrative review: the emerging clinical implications of the role of aldosterone in the metabolic syndrome and resistant hypertension. Sowers JR, Whaley-Connell A, Epstein M. Ann.Intern.Med.2009;150:776-783*
3. *Maximising diuretic therapy in resistant hypertension. Handler J. J.Clin.Hypertens.2007;9:802-806*