Antiobesity drug therapy

In Reply: I thank Dr. Modarressi for these comments and agree that the impact of many glucagon-like peptide 1 (GLP-1) receptor agonists on the lowering of blood pressure is modest but significant when compared with other glucose-lowering agents and thus have exerted cardioprotective benefits.

A meta-analysis of 16 randomized controlled trials, including 2,417 control group participants and 3,443 patients enrolled in GLP-1 receptor agonist treatment, examined the blood pressure-lowering impact of exenatide and liraglutide.

Exenatide reduced systolic blood pressure (SBP) by a mean difference of −5.24 mm Hg compared with placebo (95% confidence interval [CI] −6.88 to −3.59, P < .001) and by −3.46 mm Hg compared with insulin glargine (95% CI −3.63 to −3.29, P < .001). In the exenatide-treated group, diastolic blood pressure (DBP) was reduced by −5.91 mm Hg compared with placebo (95% CI −7.53 to −4.28, P < .001) and by −0.99 mm Hg compared with sitagliptin (95% CI −1.12 to −0.87, P < .001).

For liraglutide, SBP changes in this meta-analysis were assessed in the groups treated with 1.2 mg/day or 1.8 mg/day of liraglutide. In the 1.2-mg/day group, liraglutide reduced SBP by a mean difference of −5.60 mm Hg compared with placebo (95% CI −5.84 to −5.36, P < .001) and by −2.38 mm Hg compared with glimepiride (95% CI −4.75 to −0.01, P = .05). In the 1.8-mg/day group, liraglutide also reduced SBP by −4.49 mm Hg compared with placebo (95% CI −4.73 to −4.26, P < .001) and by −2.62 mm Hg compared with glimepiride (95% CI −2.91 to −2.33, P < .001).

In summary, treatment with the GLP-1 receptor agonists exenatide and liraglutide reduced SBP and DBP by 1 to 5 mm Hg compared with antidiabetic drugs including insulin and glimepiride and with placebo for patients with type 2 diabetes mellitus. GLP-1 receptor agonists may offer an alternative therapy for these patients and will help provide additional cardiovascular benefits.
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