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[1] 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.

Yael Mauer, MD, MPH
Department of Internal Medicine
and Geriatrics
Cleveland Clinic
Cleveland, OH

Marcie Parker, PharmD, BCACP
Ambulatory Care Clinical Specialist
Department of Pharmacy
Cleveland Clinic
Beachwood, OH

Sangeeta Kashyap MD
Professor of Medicine, Cleveland Clinic
Lerner College of Medicine of Case
Western Reserve University;
Associate Program Director, Endocrinology,
Diabetes, and Metabolism Fellowship
Cleveland Clinic
Cleveland, OH
Associate Editor, *Journal of Clinical
Endocrinology and Metabolism*

REFERENCES

1. **Wang B, Zhong J, Lin H, et al**. Blood pressure-lowering effects of GLP-1 receptor agonists exenatide and liraglutide: a meta-analysis of clinical trials. Diabetes Obes Metab 2013; 15(8):737–749. doi:10.1111/dom.12085

doi:10.3949/ccjm.88c.12002