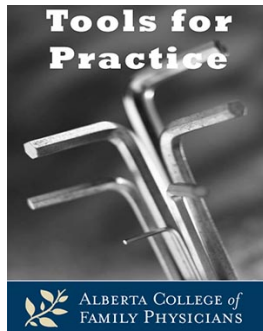


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Liraglutide: Weighing the evidence for weight loss?

Clinical Question: Does liraglutide reduce weight and improve health in obese patients?

Bottom-line: Once daily Liraglutide 3.0 mg injections reduce weight 3.4%-4.6 % over one year and one in 3-4 patients treated will get a 5% weight loss over placebo. Adverse events (like nausea and vomiting) will cause one in 17 to stop liraglutide. The effect was not sustained beyond drug cessation and long-term health effects in obese non-diabetics are unknown.

Evidence:

- Primarily two large industry-funded randomized controlled trials (RCTs) assessing liraglutide injection for weight loss:
 - 3,731 non-diabetic obese (mean 106 kg) patients.¹ Over 56 weeks, daily 3.0 mg liraglutide versus placebo resulted in:
 - Intention to treat analysis:² 4.6% (5 kg) reduction in total body weight.
 - 63% versus 27% lost $\geq 5\%$ body weight, Number Needed to Treat (NNT)=3.
 - 33% versus 11% lost $>10\%$ body weight, NNT=5.
 - 12 weeks after stopping, subjects regained $\sim 2.9\%$ initial body weight.
 - 846 diabetic obese (mean 106 kg) patients, 3.0 mg, 1.8 mg liraglutide, or placebo for 56 weeks.³
 - Weight loss compared to placebo for 3.0 mg and 1.8 mg liraglutide was:
 - Intention to treat analysis:² 3.4% and 2.5% respectively.
 - 3.0 mg liraglutide versus placebo:
 - 54% versus 21% lost $\geq 5\%$ body weight, NNT=4.
 - 25% versus 7% lost $\geq 10\%$ body weight, NNT=6.
 - Adverse Events: Nausea [Number Needed to Harm (NNH) ~ 4] and vomiting (NNH ~ 9).²
 - Withdrawal due to adverse events:⁴ 10% Liraglutide versus 4% placebo, NNH=17.
 - Smaller RCTs support these findings.^{5,6}

Context:

- 5% weight loss is suggested as potentially meaningful.⁷ However, 17% weight loss was needed for the severely obese (BMI 46-49) to attain a minimally clinically significant improvement in quality of life.⁸
- Liraglutide 1.8 mg is indicated for Type 2 Diabetes⁹ and 3.0 mg dose for weight loss.¹⁰
 - Canadian cost for 3.0 mg liraglutide is ~\$400/month.
- Fit-obese individuals have similar mortality to fit-normal weight individuals.¹¹
- In diabetic patients (mean BMI 32 and weight 92 kg), liraglutide led to a 13% relative reduction in cardiovascular events (NNT=53) over ~4 years.¹²
 - Long-term outcomes in obese non-diabetics are unknown.

Authors:

Nikytha Antony BHSc, Christina Korownyk MD CCFP

Disclosure:

Authors do not have any conflicts to disclose.

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