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## Intensive Glycemic Therapy in Patients With Type 2 Diabetes on $\beta$ -Blockers

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### Abstract

**OBJECTIVE** Recent studies have suggested that  $\beta$ -blockers may decrease the adverse influence of hypoglycemia and reduce hypoglycemia-associated cardiac arrhythmias and death. We evaluated whether intensive glycemic therapy in patients with diabetes receiving treatment with  $\beta$ -blockers showed beneficial effects for the prevention of cardiovascular events without increased mortality compared with a standard glycemic therapy.

**RESEARCH DESIGN AND METHODS** We used Action to Control Cardiovascular Risk in Diabetes (ACCORD) trial data to assess the risks of cardiovascular events, all-cause death, and cardiovascular death in patients with diabetes receiving treatment with  $\beta$ -blockers ( $n = 3,079$ ) and not receiving treatment with  $\beta$ -blockers ( $n = 7,145$ ) using Cox proportional hazard models.

**RESULTS** In patients receiving treatment with  $\beta$ -blockers, the cumulative event rates for cardiovascular events were significantly lower in the intensive therapy group compared with the standard therapy group (hazard ratio [HR] 0.81; 95% CI 0.67–0.97;  $P = 0.02$ ), whereas those rates in patients not receiving treatment with  $\beta$ -blockers were not significantly different (HR 0.92; 95% CI 0.78–1.09;  $P = 0.36$ ). Conversely, the cumulative event rates for all-cause and cardiovascular deaths in patients receiving treatment with  $\beta$ -blockers were not significantly different between the standard therapy and intensive therapy groups (all-cause death: HR 1.08; 95% CI 0.83

-1.42;  $P=0.54$ ; cardiovascular death: HR 1.05; 95% CI 0.72–1.51;  $P=0.79$ ), whereas in patients not receiving treatment with  $\beta$ -blockers, the event rates were significantly higher in the intensive therapy group compared with the standard therapy group (all-cause death: HR 1.25; 95% CI 1.02–1.52;  $P=0.02$ ; cardiovascular death: HR 1.43; 95% CI 1.03–1.98;  $P=0.03$ ).

**CONCLUSIONS** Intensive glycemic therapy may be effective in patients with type 2 diabetes receiving treatment with  $\beta$ -blockers.

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## Footnotes

- This article contains Supplementary Data online at <http://care.diabetesjournals.org/lookup/suppl/doi:10.2337/dc16-0721/-/DC1>.

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