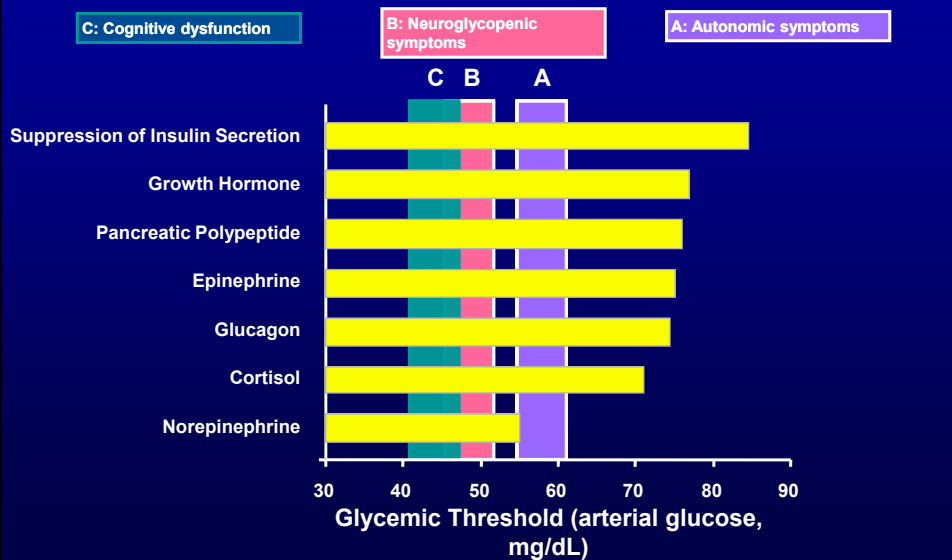


Robert E. Ratner, MD
Chief Scientific and Medical
Officer



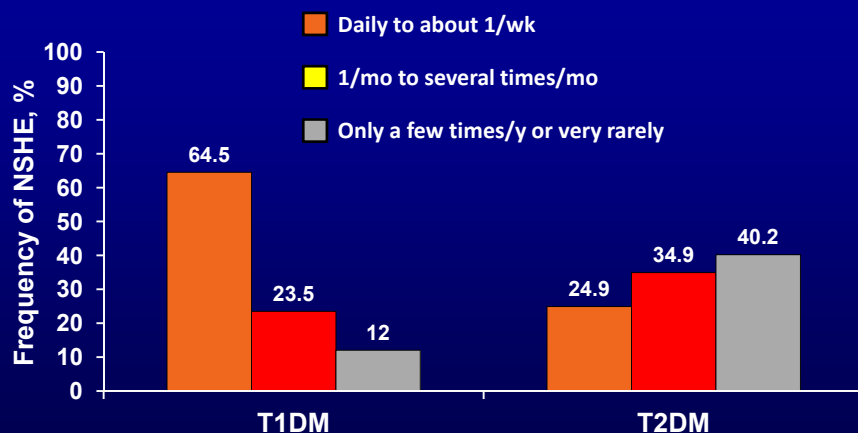
Normal Threshold Plasma Glucose Levels for Activation of Counterregulation and Symptoms



Risk Factors for Severe Hypoglycemia

- Low HbA_{1c}
- Factors interfering with counterregulation
- Increases of insulin sensitivity
- Changes in drug metabolism
- Inadequate nutrition
- Other medical conditions (e.g., impaired cognition)

How Often Does Hypoglycemia Occur in Diabetes?

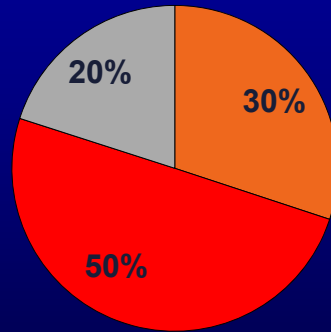


NSHE, nonsevere hypoglycemic events.

Survey 409 US patients with T1DM (n = 200) and with T2DM (n = 209).

Brod M, et al. *Value Health*. 2011;14:665-671.

When Does Hypoglycemia Occur With Diabetes?



- Awake and at work
- Awake but not at work
- During sleep at night

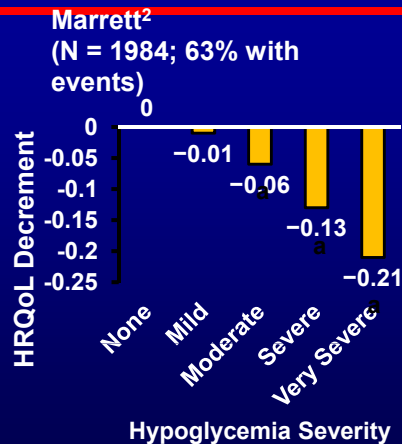
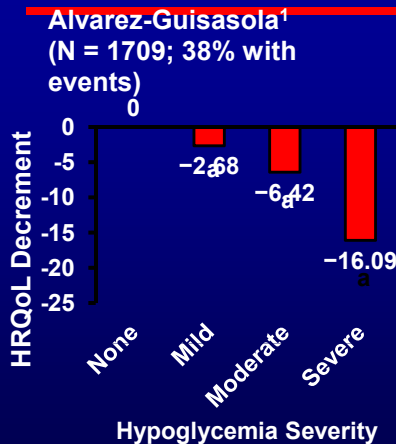
1/5 of all nonsevere hypoglycemia occurs nocturnally

NSHE, nonsevere hypoglycemic events.

Survey 409 US patients with T1DM (n = 200) and with T2DM (n = 209).

Brod M, et al. *Value Health*. 2011;14:665-671

All Hypoglycemia Negatively Affects Quality of Life in Patients With T2DM



Hypoglycemia is also associated with lower treatment satisfaction, poorer adherence, and greater resource utilization³

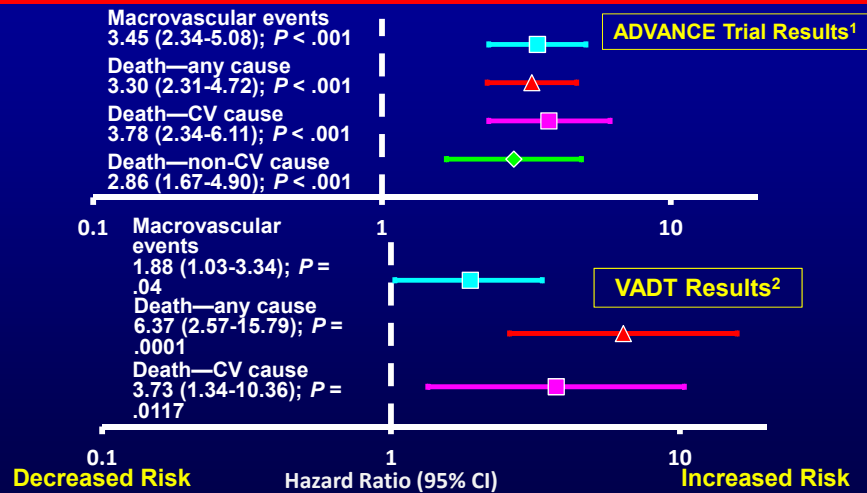
1. Alvarez-Guisasola F, et al. *Health Qual Life Outcomes*. 2010;8:36.

2. Marrett E, et al. *BMC Res Notes*. 2011;4:251.

3. Williams S, et al. *Diabetes Res Clin Pract*. 2011;91:363-37.

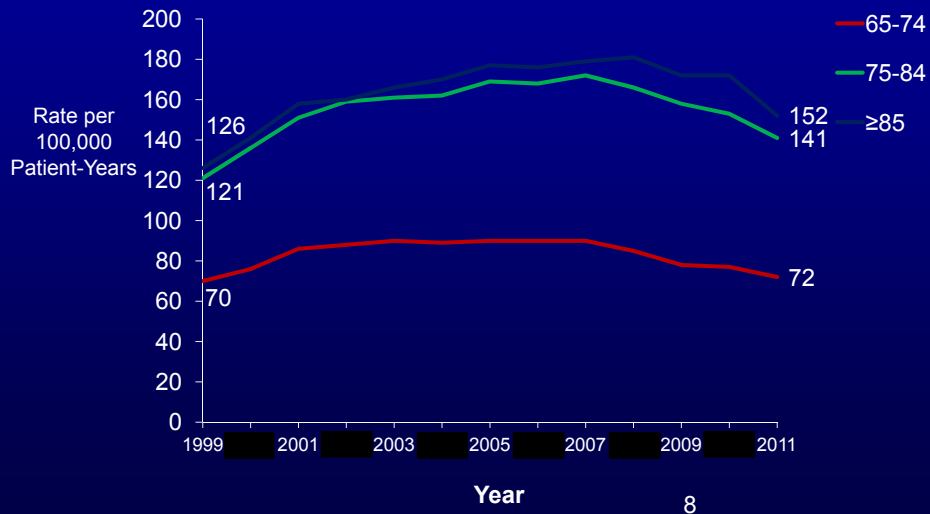
P < .05 vs no reported hypoglycemia.

Severe Hypoglycemia Is Associated With Increased Risk of Mortality and CV Events

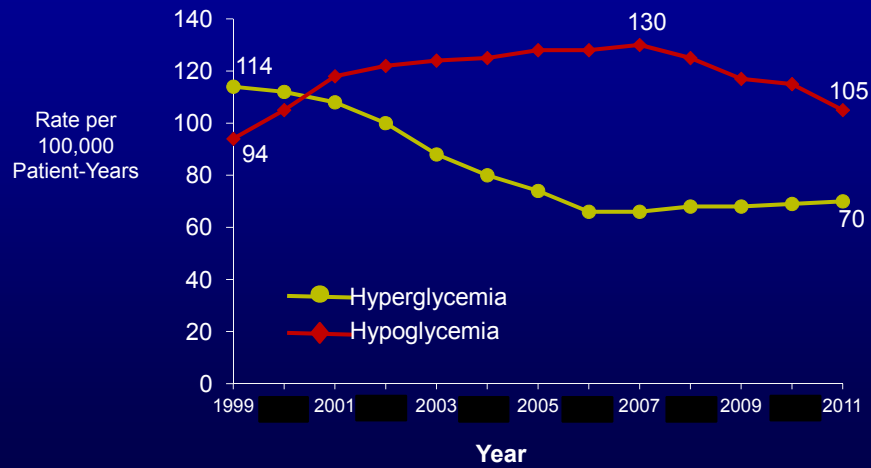


1. Zoungas S, et al; ADVANCE Collaborative Group. *N Engl J Med.* 2010;363:1410-1418
 2. Duckworth W, et al; VADT Investigators. VA Diabetes Trial (VADT) update. ADA 70th Scientific Sessions. 2010: http://webcasts.prous.com/netadmin/webcast_viewer/Preview.aspx?type=0&lid=9473&pv=2&preview=False&idcl=0

Hypoglycemia, by Age

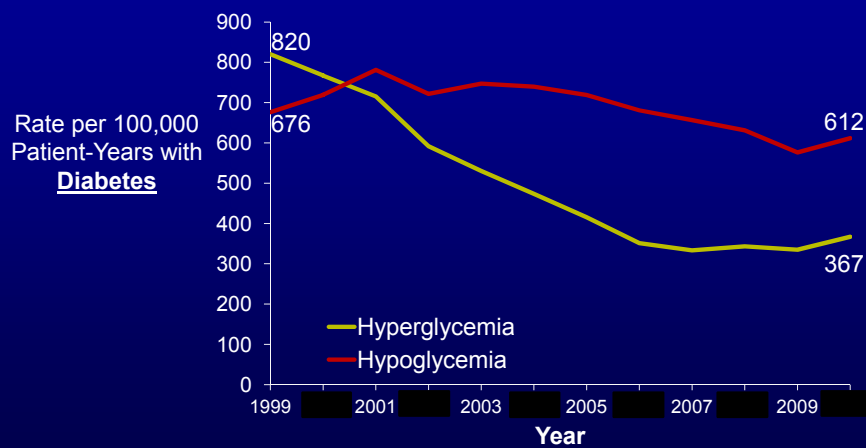


Hospitalization for Hyperglycemia and Hypoglycemia



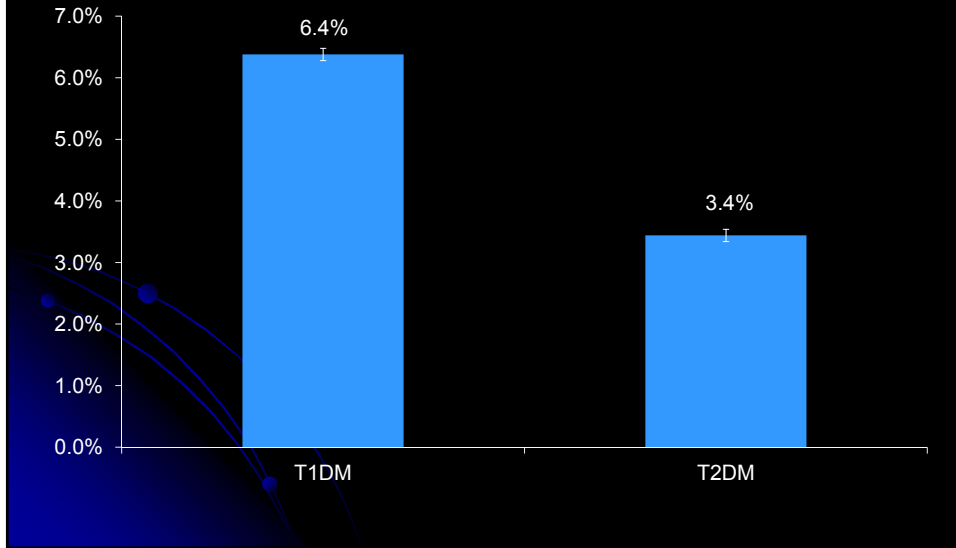
9

Adjusted for Diabetes Prevalence



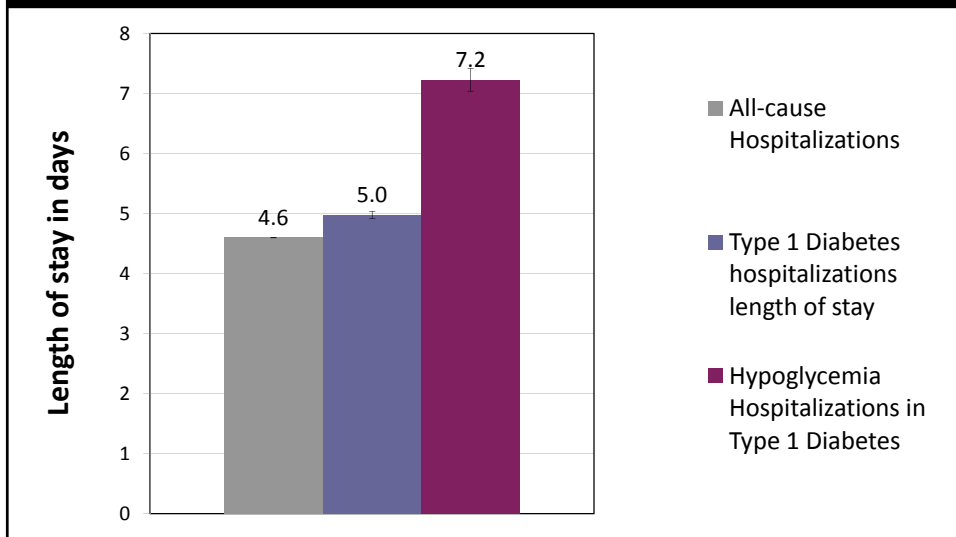
10

Hypoglycemia Hospitalizations as % of All-Cause T1DM and T2DM Hospitalizations

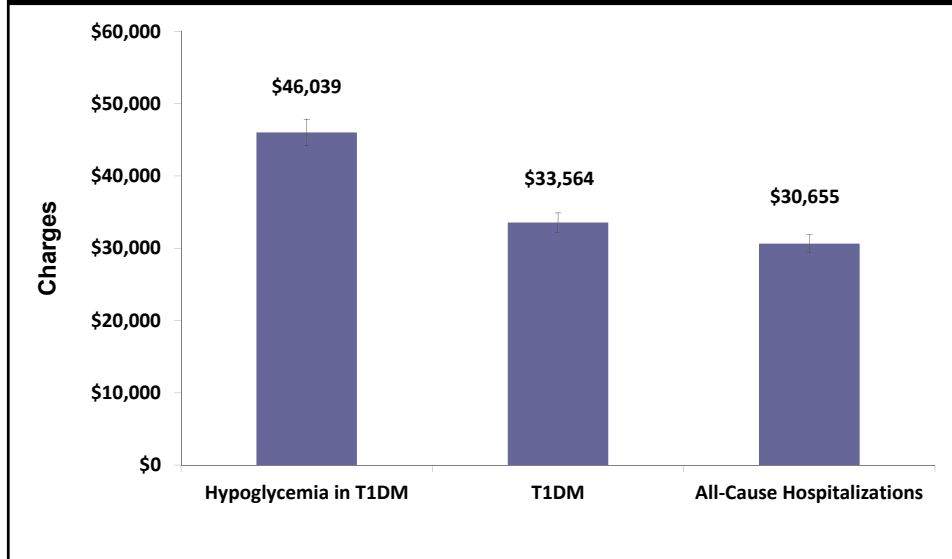


Length of Stay

T1DM patients with hypoglycemia stayed longer compared to those with all-cause hospitalizations



Charges for Hospitalizations with Hypoglycemia in T1DM (US\$ per admission)



National Bill : Total Charges for Hypoglycemia Hospitalizations in T1DM

- Total hospitalizations = 20,839 (95% CI = 19,233 - 22,445)
- Charge per hospitalization = \$46,039 (CI = \$42,144-\$49,934)
- Total charges = **\$ 959,406,721**
- As a comparison, hypoglycemia hospitalizations in T2DM :
 - Total hospitalizations = 248,422 (CI = 234,321-262,523)
 - Charges per hospitalization = \$48,569 (CI = \$45,781-\$51,357)
 - Total charges = **\$ 12.07 billion**
- Average Charge of US All-Cause Hospitalization: \$33,232