

# Decline Seen in Kaiser Members' Acute MI Rates

## VITALS

**Major Finding:** The age- and sex-adjusted incidence of acute MI decreased by 24% between 1999 and 2008.

**Data Source:** A study of 46,086 Kaiser Permanente Northern California members aged 30 years and older who were hospitalized with a primary discharge diagnosis of acute MI.

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BY DOUG BRUNK

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The incidence of myocardial infarction declined by 24% between 1999 and 2008, and the decline was most significant among those with ST-segment elevation myocardial infarction, according to

findings from a large community-based population study.

In addition, 30-day mortality rates improved, driven mostly by declining case fatality rates among patients with non-ST-segment elevation myocardial infarction (non-STEMI).

Researchers identified 46,086 members of Kaiser Permanente Northern California aged 30

years and older who were hospitalized between 1999 and 2008 with a primary discharge diagnosis of acute MI. The 46,086 hospitalizations represented 18,691,131 person-years of follow-up, reported the researchers, led by Dr. Robert W. Yeh of the department of medicine at Massachusetts General Hospital, Boston.

For patients with type 2 diabetes whose blood glucose is uncontrolled with orals alone

**THIS IS NOT JUST A TIRE  
IT'S SOMETHING WE TAKE  
FOR GRANTED UNTIL IT'S  
WEARING OUT**



### Important Safety Information for Lantus® (insulin glargine [rDNA origin] injection) (cont'd)

#### Warnings and Precautions (cont'd)

Do not dilute or mix Lantus® with any other insulin or solution. If mixed or diluted, the solution may become cloudy, and the onset of action/time to peak effect may be altered in an unpredictable manner. Do not administer Lantus® via an insulin pump or intravenously because severe hypoglycemia can occur. Insulin devices and needles must not be shared between patients.

Hypoglycemia is the most common adverse reaction of insulin therapy, including Lantus®, and may be life-threatening.

Severe life-threatening, generalized allergy, including anaphylaxis, can occur.

A reduction in the Lantus® dose may be required in patients with renal or hepatic impairment.

**Please see additional Important Safety Information for Lantus® continued on the next page.**

Learn more at [www.RethinkInsulin.com](http://www.RethinkInsulin.com)

The researchers used ICD-9-CM codes to classify MI hospitalizations as STEMI or non-STEMI and to calculate age- and sex-adjusted incidence rates. They used administrative databases, state death data, and Social Security Administration data to determine 30-day mortality, and also identified patient characteristics, outpatient medications, and levels of cardiac biomarkers during hospitalization (N. Engl. J. Med. 2010;362:2155-65).

After adjustment for age and sex, the overall incidence of MI rose from 274 cases per 100,000 person-years in 1999 to 287 cases per 100,000 person-years in 2000,

then fell each year thereafter, reaching 208 per 100,000 person-years in 2008—a significant 24% decrease over the study period. In addition, 30-day mortality after acute MI was significantly lower in 2008 than in 1999 (adjusted odds ratio, 0.76).

The incidence of age- and sex-adjusted STEMI decreased each year, from 133 per 100,000 person-years in 1999 to 50 per 100,000 person-years in 2008, a decline of 62%. However, the incidence of non-STEMI increased from 155 cases per 100,000 person-years in 1999 to 202 cases per 100,000 person-years in 2004, the year that use of troponin testing stabilized, and

decreased thereafter. Adjusted 30-day mortality decreased significantly from 1999 to 2008 in patients with non-STEMI (OR, 0.82) but did not change significantly in those with STEMI (OR, 0.93).

The researchers suggested the declining incidence of MI can be attributed at least in part to “substantial improvements in primary-prevention efforts” implemented at Kaiser. The decline occurred “despite the increased sensitivity of new biomarkers for the diagnosis of myocardial infarction” and the increasing prevalence of obesity and diabetes. The increased use of troponin testing would be expected to

increase the incidence of MI, so “the observed decreases in myocardial infarction since 2000 are even more striking.”

They acknowledged certain limitations of their study, including the fact that “the true effect of changes in diagnostic sensitivity with changing biomarker use cannot be comprehensively quantified. However, the expected bias would be an overestimation of the incidence of myocardial infarction in later years. Thus, actual decreases in the incidence of myocardial infarction since 2000 may, in fact, be greater than we observed.” They also noted the results might not be generalizable. ■

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By the time of diagnosis, patients may have lost up to 50% of  $\beta$ -cell function, and it may continue to decline, on average, by approximately 5% annually.<sup>1</sup>

Patients may not know that their pancreas is no longer making enough insulin and that their disease has progressed.<sup>2</sup>

Based on data from 2003-2004, about 40% of patients with diabetes nationwide were not adequately controlled<sup>a</sup>—and may have spent an average of 5 years with an A1C >8% from diagnosis to insulin initiation.<sup>3,4</sup>

You may be surprised that in a survey, about 80% of patients with type 2 diabetes taking oral antidiabetic drugs said they would consider taking insulin based on your recommendation.<sup>5</sup>

Patients may focus on blaming themselves for their uncontrolled blood glucose, but you can help them focus on turning this negative mindset into positive action for managing their disease.<sup>2</sup>

Insulin may help make a difference. Insulin is an effective medication for lowering blood glucose levels. It works as part of an overall treatment plan.<sup>b</sup>

So, consider prescribing insulin today to help lower blood glucose for your appropriate patients.

## Important Safety Information for Lantus<sup>®</sup> (insulin glargine [rDNA origin] injection) (cont'd)

### Drug Interactions

Certain drugs may affect glucose metabolism, requiring insulin dose adjustment and close monitoring of blood glucose. The signs of hypoglycemia may be reduced in patients taking anti-adrenergic drugs (e.g., beta-blockers, clonidine, guanethidine, and reserpine).

### Adverse Reactions

Other adverse reactions commonly associated with Lantus<sup>®</sup> are injection site reaction, lipodystrophy, pruritus, and rash.

**Please see brief summary of full prescribing information for Lantus<sup>®</sup> on the following pages.**

<sup>a</sup>Glucose control defined as A1C <7%.

<sup>b</sup>Including diet, exercise, and other diabetes medications.

**References:** 1. Holman RR. *Diabetes Res Clin Pract.* 1998;40(suppl):S21-S25. 2. Polonsky WH, Jackson RA. *Clin Diabetes.* 2004;22(3):147-150. 3. Hoeger TJ, Segel JE, Gregg EW, Saaddine JB. *Diabetes Care.* 2008;31(1):81-86. 4. Brown JB, Nichols GA, Perry A. *Diabetes Care.* 2004;27(7):1535-1540. 5. Data on file, sanofi-aventis U.S. LLC.

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