

# Epidural Steroids Lead to Blood Glucose Increase

BY FRAN LOWRY  
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ORLANDO — Epidurally administered glucocorticosteroids produce a transient increase in fasting blood glucose levels in patients with diabetes, according to results from a study presented at the annual meeting of the American Academy of Pain Medicine.

In a small trial of 40 patients, fasting blood glucose levels rose significantly—

about 30% above baseline—the first morning after the epidural, and remained elevated for an average of 7 days in one subset of patients, Dr. Adam Stoller of Beth Israel Deaconess Medical Center, Boston, said.

“Diabetic patients can have quite high rises in their blood sugar after such procedures. It’s important to know that there is this potential for bad outcomes, especially since epidural steroid injections are the most common pain clinic procedure and there is an increasing number of dia-

betics in our patient population,” Dr. Stoller said in an interview.

He and his associates at Beth Israel Deaconess were prompted to study the effect of epidural steroid injections on blood sugar after one of their diabetic patients went into a ketoacidosis coma following the procedure.

“We looked in the literature to see what evidence there was about epidural steroids causing any sort of derangements in glucose, but we couldn’t find any, so we de-

cidated to start this study,” he explained.

Patients were randomized to receive epidural administration of 40 mg or 80 mg of methylprednisolone acetate (Depo-Medrol). Hemoglobin A<sub>1c</sub> (HbA<sub>1c</sub>) levels were drawn on the day of the epidural, and baseline blood sugars were obtained from the patients’ glucose log, or from a glucose monitoring device. Fasting blood sugars were monitored for 2 weeks following the epidural.

Fasting blood glucose levels remained elevated for an average of 7 days in the patients who received the 80-mg dose of Depo-Medrol, and for an average of 2 days in patients who received the 40-mg dose.

**Baseline fasting blood sugars did not correlate with the subsequent increase that occurred after the epidural steroids, a finding that surprised the investigators.**

The magnitude of the rise in blood sugar was correlated with HbA<sub>1c</sub> levels at the time the injection was given, Dr. Stoller said. “The higher the hemoglobin A<sub>1c</sub>, the greater the derangement in fasting blood glucose.

Hemoglobin A<sub>1c</sub> of 7[%] or greater predicted a more significant increase in blood glucose.”

Baseline fasting blood sugars did not correlate with the subsequent rise that occurred after the epidural steroids, a finding that surprised the investigators, Dr. Stoller said.

“We often use a fasting blood sugar as an indication of whether we should or should not give epidural steroids. But in this study, we found that fasting sugars had no correlation with what their rise after the epidural steroids would be. The thing that most correlated with a rise in blood sugar was the hemoglobin A<sub>1c</sub>, and levels that started at 7 were linked to the greatest rise.”

He added that there was no correlation between the change in fasting blood glucose levels and body mass index or years with diabetes.

Dr. Stoller reported no conflicts of interest. ■

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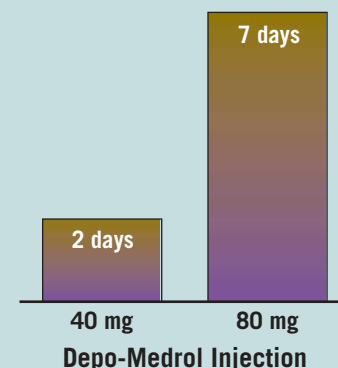
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**Average Duration of Elevated Fasting Blood Glucose Levels After Steroid Injection**



Note: Based on a randomized study of 40 patients with diabetes.  
Source: Dr. Stoller