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Risk Factors Identified for Intentional Skipping of Insulin Injections

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January 26, 2010 — Risk factors have been identified associated with intentional omission of insulin injections in patients with type 1 and type 2 diabetes, according to the results of a study reported in the January 26 issue of *Diabetes Care*.

"Intentionally skipping insulin injections may be more common than clinicians think," lead author Mark Peyrot, PhD, from Loyola University Maryland, in Baltimore, said in a news release.

"It's important for physicians and other health care professionals to be aware of potential risk factors, especially for patients who report injection-related problems. We hope that in the future doctors will work closer with patients to determine their individual needs, so that they can better plan activities to facilitate patients' adherence with their treatment regimens."

The study goal was to identify factors linked to patient frequency of intentionally skipping insulin injections, based on an Internet survey of 502 US adults who reported that they were using insulin injections to treat type 1 or type 2 diabetes. Independent associations of various demographic-, disease-, and injection-specific factors with insulin omission were determined using multiple regression analysis.

More than half of respondents reported intentional insulin omission, and 20% reported regular omission.

Significant independent risk factors associated with insulin omission were younger age, lower income and educational attainment, type 2 rather than type 1 diabetes, poor adherence to a healthy diet, more frequently prescribed daily injections, interference of injections with daily activities, and injection pain and embarrassment.

Risk factors for insulin omission were different for patients with type 1 and type 2 diabetic patients, with diet nonadherence more common in patients with type 1 diabetes and age, education, income, pain, and embarrassment more common in patients with type 2 diabetes.

"Whereas most patients did not report regular intentional omission of insulin injections, a substantial number did," the study authors write.

"Our findings suggest that it is important to identify patients who intentionally omit insulin and be aware of the potential risk factors identified here. For patients who report injection-related problems (interference with daily activities, injection pain, and embarrassment), providers should consider recommending strategies and tools for addressing these problems to increase adherence to prescribed insulin regimens. This could improve clinical outcomes."

Limitations of this study include lack of pharmacy records or other objective measure of insulin use, the possibility that some respondents included injections they simply forgot to take or appropriately skipped, and probable underestimate of the level of insulin nonadherence.

In an accompanying editorial, Katie Weinger, EdD, and Elizabeth A. Beverly, PhD, from Harvard Medical School and the Joslin Diabetes Center in Boston, Massachusetts, note that US physicians often delay prescribing insulin and that their patients often resist insulin injections.

"In order to continue to improve diabetes care and A1C levels, we must understand both providers' barriers to prescribing insulin therapy and patients' barriers to taking insulin as prescribed," Dr. Weinger and Dr. Beverly write.

"We also need effective interventions that are brief, well-validated, and compatible with providers' practice patterns and limited encounter time. Although the study...did not address important issues such as other self-care behaviors, weight concerns, the impact of insulin delivery systems, and survey reliability and validity, the study serves an important role in highlighting the avoidance of insulin treatment among a large segment of the diabetic population."

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