

In-hospital Treatment of Hyperglycemia: Effects of Intensified Insulin Treatment

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Background: Hyperglycemia is common in hospitalized patient; however, the glycemic control obtained during hospitalization is often suboptimal. No methods for achievement of proper glycemic control in this population have been validated in the in-hospital setting.

Aims: To study the effect of a novel intensive subcutaneous insulin protocol on the quality of in-hospital glycemic control.

Methods: Included in this prospective controlled study were all diabetic patients admitted to the Internal Medicine Departments in a tertiary medical center during a one-year period. The study was divided into a pre-intervention (n=94), intervention (n=102) and post-intervention (n=79) periods. During the intervention period all hospitalized diabetic patients with blood glucose >200 mg/dl were treated with an intensive multi-injection protocol consisting of 2 or 4 daily regular/NPH insulin injections.

Results: Mean glucose level throughout hospitalization was 178.7±47 mg/dl in the intervention period vs. 198.8±60 mg/dl in the pre-intervention period (P<0.05). During the intervention period, the difference between mean admission and discharge day glucose levels was 43 mg/dl in patients treated with 4 daily insulin injections, in contrast to no change noted in the other treatment groups. During the post-intervention period the rate of implementation of the intensive protocol by the internal medicine teams declined to 47.5%, in contrast to a 78.4% implementation rate during the intervention period. This decline was associated with deterioration of glycemic control.

Conclusions: The use of intensified insulin regimen improved the glycemic control of hospitalized diabetic patients. Successful incorporation of such intensive protocols into daily medical routines requires close involvement and continuous physician guidance by the hospital diabetes team.