INTRODUCTION: Although many obese patients with type 2 diabetes lose weight by dieting, most subsequently regain it. We performed a retrospective cohort analysis to assess the influence of the amount and rapidity of weight loss during hospitalization on the risk of subsequently regaining weight and stopping treatment in patients with severe obesity who dieted without bariatric surgery.

METHODS: A total of 131 severely obese patients (48±14 years old; BMI: 41.7±8.8; 58% women; 75% with diabetes) received inpatient treatment that included diet, exercise, behavioral modification (charting weight four times daily), and educational seminars, and were followed after discharge. Regaining weight and drop-out from treatment were defined as returning to baseline body weight and failing to keep outpatient appointments, respectively.

RESULTS: Patients lost an average of 5.3±3.0 kg (4.9±2.4%) in hospital (mean: 19 days). Over the median 2-year follow-up period, unadjusted analysis showed that patients with >3% weight loss in hospital had significantly less risk of regaining weight than patients losing ≤3% (P<0.05). The risk decreased further with greater weight loss (>7% loss; hazard ratio (HR): 0.06; 95% confidence interval: 0.007 to 0.47, P=0.007).

Adjusted analysis revealed that >5% weight loss was associated with significantly less risk of regaining weight after adjustment for age, sex, BMI, smoke, diabetes, insulin therapy, sulfonylurea therapy, antidepressant medication, and duration of hospitalization (>7% loss; HR 0.04 (0.004–0.36, P=0.004), 7% > loss > 5%; HR 0.3 (0.11–0.85, P=0.02), 5% > loss > 3%; HR 0.46 (0.18–1.16, P=0.1)).

No significant relation was observed between weight loss and drop-out. Among patients with >3% weight loss during hospitalization, rapid weight loss (>3% within seven days) did not increase the risk of subsequently regaining weight compared with patients showing slower weight loss (P=0.71).

CONCLUSIONS: Achieving >5% weight loss during comparatively brief hospitalization predicts subsequent maintenance of lower weight. Experiencing success in hospital might increase the motivation of obese patients.