

## CORRESPONDANCE/LETTERS TO THE EDITOR

TO THE EDITOR : INSULIN THERAPY DURING RAMADAN FAST  
FOR PATIENTS WITH TYPE 1 DIABETES MELLITUS  
<http://www.lebanesemedicaljournal.org/articles/56-1/letter1.pdf>

SIR,

Patients with type 1 diabetes mellitus (T1DM) are allowed to restrain from fasting Ramadan [1] ; yet many insist on it [2]. Some physicians allow patients to fast under close supervision [1]. We assessed the course of nine T1DM patients (5 males, 4 females, mean age 24.8 ± 6.9 years) from our clinic and shifted them in the week preceding Ramadan to a treatment regimen consisting of one daily injection of insulin glargine and three doses of insulin lispro or aspart, one before each meal. With the beginning of fasting, patients were given a daily injection of insulin glargine in PM and two doses of insulin aspart or lispro, one at *suhur* and another at *iftar*, the third dose was skipped. Calculation of the insulin dose to be started on was done by reducing by 20% the total pre-Ramadan insulin dose, then giving 40% of the remaining as insulin glargine and distributing the 60% over three doses of short-acting insulin and as the fast had begun simply eliminating one of the doses of short-acting insulin. The mean dose of insulin given by the end of Ramadan was significantly less than the mean dose received before fasting. The mean amount of long-acting insulin before fasting was higher than the mean amount of insulin glargine given by the end of fasting. The mean dose of regular insulin given prior to three meals before fasting was comparable to the mean dose given prior to two meals by the end of Ramadan (Table I). The insulin glargine and short-acting insulin doses by the end of Ramadan constituted 58% and 42% of the total insulin dose, respectively. There was no statistically significant change in HbA1c before and after fasting. One of the patients terminated the fast after developing hypergly-

cemia the first day she was shifted to the new insulin regimen, probably due to insufficient insulin dosing. Another patient interrupted the fast after three days for personal reasons. Two patients interrupted the fast after episodes of daytime hypoglycemia. No adverse events such as diabetic ketoacidosis or severe dehydration were reported suggesting that this regimen seems well suited to avoid complications during Ramadan. Despite a small sample size, the data shows that with proper adjustment of insulin regimen and close monitoring T1DM patients can safely fast Ramadan.

We recommend that an appropriate insulin regimen in Ramadan for T1DM patients would consist of around 70% of their initial total insulin dose composed of 60% insulin glargine and 40% rapid insulin such as lispro or aspart divided equally between *suhur* and *iftar*. Future studies consisting of large randomized controlled trials are needed.

Sami T. AZAR, MD  
Walid G. KHAIRALLAH, MD  
Marie T. MERHEB, MD  
Mira S. ZANTOUT, BS  
Fadl FLITI\*, MD

Division of Endocrinology and Metabolism  
Department of Internal Medicine  
American University of Beirut Medical Center  
\*Division of Endocrinology  
Department of Internal Medicine  
Rayak Hospital, Bekaa, Lebanon  
[sazar@aub.edu.lb](mailto:sazar@aub.edu.lb)

**TABLE I**  
MEAN (SD) for HbA1c and INSULIN DOSES-TOTAL, LONG- and SHORT-ACTING PRE- and POST-RAMADAN

	HbA1c (%)	TOTAL INSULIN DOSE	LONG-ACTING INSULIN DOSE	SHORT-ACTING INSULIN DOSE
(units/day)				
<b>Pre-Ramadan</b>	7.7 (0.7)	67.9 (23.1)	43.0 (15.8)	24.9 (8.4)
<b>Post-Ramadan</b>	7.5 (0.8)	48.7 (15.6)	28.4 (9.8)	20.3 (7.1)
<b>p-value*</b>	0.240	0.002	0.002	0.071

\*Significant at p < 0.05 by paired t-test.

### References

1. Al-Arouj M, Bouguerra R, Buse J et al. Recommendations for management of diabetes during Ramadan. Diabetes Care 2005 Sep ; 28 (9) : 2305-11.
2. Rashed AH. The fast of Ramadan. No problems for the well : the sick should avoid fasting. BMJ 1992 ; 304 : 521-2.