Editorial

Ramadan fast and control of diabetes

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In this issue of journal, Vasan *et al.* report a study evaluating the effect of pioglitazone in fasting muslim subjects during Ramadan.^[1] Maintaining good metabolic control in this situation, as well as in other types of religious fasts requires tremendous ingenuity. Our ability to offer more flexible regimes in the last decade has somewhat simplified this very complex task. Ramadan fast presents a unique example of reversed biorhythm of nutrient intake. The quality and quantity of nutrient intake and period of time over which the intake occurs, is all expected to change. In an earlier study however, it was demonstrated that macronutrient intake or metabolic control did not alter significantly and the body weight was reduced marginally though statistically it was not significantl.^[2]

Study by Vasan *et al.* raises several issues of great importance. What should be the best modality of treatment during religious fasts? In type 2 DM it could be an antihyperglycemic drug like glitazone, metformin or a nutrient blocker like acarbose or miglitol. Vasan *et al.* have used pioglitazone very appropriately in this regard. If a hypoglycemic oral drug is used, one would prefer a short acting drug like repaglinide or nateglinide. In insulin requiring type 2 diabetics, use of short or rapid acting insulin is preferred, especially with the early morning meal. In type I diabetic, these fasts are a severe drain on the disturbed metabolism, but can be undertaken with suitable changes in the insulin dose. Quite frequently, a 3- dose regime will need to be converted to a 2-dose regime with almost equal dose of regular and NPH insulin in the evening and a moderate dose of regular insulin together with a small dose of NPH insulin in the morning. Rapid acting insulins like aspart or lyspro given early morning will minimize the risk of daytime hypoglycemia.

Another interesting fact in the Vasan study is the use of fructosamine as a parameter to evaluate metabolic control. Theoretically, it is an appropriate parameter to judge metabolic control over the past 2-4 weeks. However, this test still needs standardization. We would have liked to know the coefficient of inter-assay and intra- assay variation of this test in this paper; it is supposed to be quite large with the current methodologies. In the previous study quoted here,^[2] glycosylated hemoglobin was used to assess the metabolic control. The methodology of this test is also being standardized, but this test is in most wide use and presently, DCCT traceable or NGSP (National Glycated hemoglobin Standardisation Program) certified HbA_{1c} methods have proven to be quite dependable. Although HbA_{1c} was initially thought to reflect previous 3 months metabolic control, it is now considered to mostly reflect the control over the past two months.^[3] The rate of dissipation of HbA_{1c} can be as fast as 1.7% over the first four weeks;^[4] hence application of this test for studying the altered metabolic control over a four-week period is valid.

Another interesting fact in the present study is the use of pioglitazone in type 2 diabetes. The side effects of weight gain and edema occur with a distressing frequency with the use of glitazones; so that most experienced diabetologists are resorting to quite infrequent use of glitazones. In this short study a weight gain of 3.02 kg was recorded in the pioglitazone group and 16 out of 43 patients developed edema. These are realistic figures in general with the use of these drugs, which reduces the utility of these otherwise very efficacious drugs. These facts have been widely appreciated in the Indian sub- continent; so that metformin and sulfonylureas continue to be extensively used as insulin sensitizers, with minimal side effects.

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References

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