



Pita and Cola – a Devastating Mixture?

Ohad Cohen MD

Institute of Endocrinology, Sheba Medical Center, Tel Hashomer, Israel
Affiliated to Sackler Faculty of Medicine, Tel Aviv University, Ramat Aviv, Israel

Key words: diabetes, Arabs, oral glucose tolerance test

IMAJ 2005;7:193–194

Deterioration in glucose tolerance is a well-known phenomenon afflicting ethnic minorities. These minorities arose from immigration (e.g., Japanese-American, Afro-American), colonization (Pima Indians) [1], or both (Mexican-American). Increase in glucose intolerance can also be observed when large populations undergo rapid socioeconomic changes, as in the Nauru in China.

Does the Arab minority in Israel have the characteristics of similar populations with regard to glucose metabolism? Does a Western-influenced diet, combined with a traditional source of carbohydrate (pita/bread) affect glucose tolerance? In an attempt to shed light on this issue, Abdul-Ghani and co-workers conducted a study, which is reported in this issue of *IMAJ* [2]. They performed an oral glucose tolerance test with careful physical measurements and several laboratory tests in 95 adult male patients with obesity, in a primary healthcare clinic in an Arab village. The authors were surprised to find that the majority of subjects had glucose intolerance (impaired glucose tolerance, impaired fasting glucose, diabetes mellitus). It was unexpected because these patients were considered healthy and their obesity was in stage I (body mass index 32.68 ± 6.2). Can this finding be generalized to the Arab minority in Israel, or is it perhaps due to selection bias or to a local genetic effect? The prevalence of glucose intolerance in the Jewish population is lower. In a similar pre-selected population, studied during recruitment for the diabetes prevention trial STOP-NIDDM, the rates of IGT and diabetes were less than 50%. A study performed in the West Bank a decade ago [3] revealed a prevalence of 8.6% and 9.8% of diabetes and IGT respectively in a non-selected rural population. The prevalence of the metabolic syndrome in the latter study was 17%. Thus the finding by Abdul-Ghani and colleagues that 48% of participants had the metabolic syndrome is significantly higher than in the previous study, and even higher than reported for Arab populations in Oman (21%) and the United States (28%). In Arab-Americans, diabetes was present in 20% of men and 16% of women, and IGT and/or IFG in 30% of men and 17% of women. Thus, American Arabs have a slight increase in glucose intolerance as compared to the general population, but not in the range observed by Abdul-Ghani and team in their study [1]. It should be mentioned

that the definitions of the metabolic syndrome were different in these studies.

Is the situation of the Arab minority in Israel similar to the observed increased risk for type 2 diabetes in San Antonio Hispanics as compared to neighboring Mexico City residents? This issue is far from being answered by Abdul-Ghani's study. In order to evaluate this important question, which has major implications for healthcare management resource allocation and preventive measures, a carefully planned non-biased population-based survey is necessary. Preliminary data from such a project were recently reported at the Israel Diabetes Association meeting in 2004. The final results are eagerly anticipated.

Nevertheless, a major lesson from their study is the role of the OGTT for the diagnosis of unknown impairment of glucose metabolism. Though some researchers still debate the use of the OGTT for screening purposes (National Screening Committee Policy Position, March 2004), Abdul-Ghani and team noted that 66 men and women of the village were diagnosed as glucose intolerant. Because diabetes screening is not routine, these asymptomatic at-risk individuals would not have been recognized and targeted for lifestyle modification, strict blood pressure control, and weight and lipid management. Those with diabetes would not be screened for retinopathy and nephropathy, with appropriate diabetic complications prevention management and tight glycemic control. Diabetes prevention studies have proved that lifestyle modifications and therapeutic strategies for patients with IGT prevented not only progression to frank diabetes but cardiovascular complications as well.

Targeted screening has been advocated to be more cost-effective than universal screening for diabetes [4–6]. In their current study, Abdul-Ghani et al. targeted a population by ethnicity (Arab), age (>40) and BMI (>27). Surprisingly, this strategy yielded a high (71%) positive predictive value. If this strategy is confirmed by further studies – providing evidence that there was no selection bias and that the results are not related to local factors (as familial clustering) – this valuable information should be translated into specific operative measures. Until now the connection between Pita-Cola and glucose intolerance has not been considered, and

IGT = impaired glucose tolerance
IFG = impaired fasting glucose

OGTT = oral glucose tolerance test
BMI = body mass index

with time, more people will be afflicted by the obesity-diabetes-metabolic syndrome epidemic. It is crucial therefore that these measures be expedited.

References

1. Bennett PH. Type 2 diabetes among the Pima Indians of Arizona: an epidemic attributable to environmental change? *Nutr Rev* 1999;57(5 Pt 2):S51-4.
2. Abdul-Ghani MA, Sabbah M, Muati B, et al. High frequency of pre-diabetes, undiagnosed diabetes and metabolic syndrome among overweight Arabs in Israel. *IMAJ* 2005;7:143-7.
3. Abdul-Rahim HF, Hussein A, Bjertness E, Giacaman R, Gordon NH, Jervell J. The metabolic syndrome in the West Bank population: an urban-rural comparison. *Diabetes Care* 2001;24:275-9.
4. Nathan MD, Herman WH. Screening for diabetes: can we afford not to screen? *Ann Intern Med* 2004;140:756-8.
5. Hoerger TJ, Harris R, Hicks KA, Donahue K, Sorensen S, Engelgau M. Screening for type 2 diabetes mellitus: a cost-effectiveness analysis. *Ann Intern Med* 2004;140:689-99.
6. Park PJ, Griffin SJ, Sargeant L, Wareham N. The performance of a risk score in predicting undiagnosed hyperglycemia. *Diabetes Care* 2002; 25:984-8.

Correspondence: Dr. O. Cohen, Institute of Endocrinology, Sheba Medical Center, Tel Hashomer 52621, Israel.

Phone: (972-3- 5302802

Fax: (972-3-530-2083

email:Ohdcohen@sheba.health.gov.il