Letters to the Editor

Diabetic cardiac autonomic neuropathy in well-controlled diabetics within 1 year of diagnosis

Sir,

Diabetic Cardiac Autonomic Neuropathy (DCAN) is associated with high risk of cardiovascular morbidity and mortality.[1] Several methods have been devised to assess cardiac autonomic neuropathy such as measurement of resting heart rate (HR), HR variability, etc. Reduced HR variability has been associated with increased cardiac events in diabetic subjects.[2] Portable ANSiscope is a device that noninvasively measures the parasympathetic/sympathetic nervous system imbalance in an office setting. The ANSiscope computes a percentage of dysautonomia from a recording of 571 RR intervals termed ANS index.

Based on scoring described by Bellavere *et al.*,[3] five risk categories have been identified using the computed ANS Index. Subjects with ANS index <11%, 11–20%, 21–50%, 51–60% and 61-100% were classified into healthy, early, late, advanced, and most-advanced diabetic cardiac autonomic neuropathy (DCAN) groups, respectively. We investigated prevalence of DCAN amongst well-controlled type-2 diabetes mellitus (T2DM) subjects within 1 year of diagnosis.

After obtaining informed consent, all T2DM subjects diagnosed within the past 12-months and hemoglobin A1C (A1C) ≤7 were included in the study. Eighteen of 29 subjects recruited were female, with a mean diabetes duration of 9-months and a mean A1C of 6.3% (5.3-7.0) [Table 1]. 10/29 subjects had no DCAN, whereas 4, 11, 1, and 3 subjects had early, late, advanced, and most-advanced DCAN, respectively.

Our study clearly indicates that despite good glycemic control, almost two-third of recently diagnosed T2DM subjects in Pakistan have some level of DCAN. A similar study conducted in India demonstrated an even higher prevalence of DCAN, albeit using different diagnostic criteria.[4] It is a well-known fact that newly diagnosed T2DM subjects have the disease for at least 5-10 years before they are diagnosed. It is quite possible that if we diagnose diabetes earlier followed by aggressive treatment, we can prevent or reduce the morbidity associated with DCAN.

Table 1: Diabetic cardiac autonomic neuropathy profile of 29 subjects with type 2 diabetes mellitus within one year of diagnosis and an A1C of <7.0

	Number	Mean age (range)	Mean BMI (range)	Mean A1C (range)	Mean Ans index (range)
Healthy (<11%)	10	47(30-65)	28(20-40)	6.2(5.3-7)	1(0-8)
Early (11-20%)	4	40(35-51)	29(27-32)	6.5(6.3-6.8)	15(14-17)
Late (21-50%)	11	55(45-70)	30(26-42)	6.1(6.0-7.0)	34(21-47)
Advanced (51-60%)	1	42	22	6.4	56
Most Advanced (61-100%)	3	61(50-73)	28(24-34)	6.3(6.1-6.7)	74(71-80)
Total	29	51 (30-73)	29 (20-42)	6.3 (5.3-7.0)	24 (0-80)

All our subjects had their diabetes under good control for at-least 3 months as indicated by an A1C<7.0. It seems that short-term good glycemic control does not reverse cardiac dysautonomia. Previous studies have shown that intensive diabetes control in type-1 diabetic subjects is associated with partial reversibility of DCAN.[5] Therefore, it would be interesting to compare the DCAN profile before and after good glycemic control.

American Diabetes Association recommends yearly screening for autonomic neuropathy in T2DM from the time of diagnosis. This cannot be accomplished efficiently unless there is a device available that is accurate and easy to use in a doctor's office setting. Portable ANSiscope seems to be a device that has the potential to meet all these needs of a busy diabetologist.

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