

## Current Treatment Protocols for the Management of Diabetic Neuropathy

Chair: *Dalip Ragoobirsingh*

### Development, Presentation and Diagnosis of Diabetic Peripheral Neuropathy

*Michael Boyne*

Diabetic neuropathy (DN) is an extremely common microvascular complication of both Type 1 and Type 2 diabetes mellitus. In fact, approximately one-third of Caribbean patients who have diabetes for at least 10 years have evidence of neuropathy on clinical testing. The most common presentation is sensorimotor polyneuropathy, although autonomic neuropathy is under-diagnosed in many patients.

The pathogenesis of DN is due to increased oxidative stress, advanced glycation end-products and chronic inflammation in patients with sub-optimal glycaemic control. Thus, DN should be preventable and diabetes education (including proper shoe-wear) is helpful in preventing its sequelae. Otherwise, progressive DN is a risk factor for amputation, as well as it is a marker for sepsis, macrovascular complications and mortality. The clinician should be properly trained in assessing the feet of diabetic patients, including the use of vibration and monofilament testing.

### Glycaemic Control for the Prevention of Diabetic Neuropathy

*Rosemarie Wright-Pascoe*

There is a high prevalence of diabetes mellitus in the Caribbean (17.5% in black Barbadians in 2002). In Jamaica, over 36% of all new cases occur in people over the age of 65 years. The chronic complications of diabetic neuropathy are highly prevalent in the population. In newly diagnosed diabetes mellitus, it was noted that 31.1% of patients had diabetic peripheral neuropathy (DPN).

Diabetic neuropathy may be classified as DPN with subtypes such as diabetic radiculoplexus neuropathy and diabetic focal mononeuropathy; and diabetic autonomic neuropathy (DAN). Both confer significant morbidity and mortality.

Diabetic peripheral neuropathy may result in pain, diabetic foot ulcers, foot infection and amputation, and Charcot neuroarthropathy. Diabetic autonomic neuropathy may result in a resting tachycardia, an increased risk of arrhythmia, postural hypotension and death; altered motility of the bowel with diabetic diarrhoea and gastroparesis as examples, impaired control of the bladder, erectile dysfunction and sweating disorder. Hyperglycaemia, disease duration, age-related neuronal changes, systolic and diastolic blood pressure, lipid values and weight play key roles in the development of diabetic neuropathy.

In Type 1 diabetes mellitus (T1DM), the Diabetes Control and Complications Trial (DCCT) and the Epidemiology of Diabetes Interventions and Complications (EDIC) Study demonstrate prevention and/or delay of DPN and protection against the incidence and prevention in T1DM with glycaemic control. While the effect of glycaemic control in Type 2 diabetes mellitus (T2DM) is less conclusive, there is some effect on prevention of progression and in providing symptomatic relief in DPN in some patients. Preventing rapid changes in blood glucose may protect against the development of symptoms and the relief of pain.

It is proposed in this presentation to explore further how glycaemic control may prevent diabetic neuropathy.

### Managing Neuropathy in Patients with Diabetes: A Case-based Approach

*Marshall Tulloch-Reid*

Neuropathy is a common complication of diabetes, affecting 10–100% of patients with diabetes, depending on the population studied. Neuropathy increases diabetes-related morbidity from pain, infection, foot ulceration and amputation.

In this case-based interactive session, we will discuss approaches to the diagnosis and treatment of diabetic neuropathy and how complications from this condition can be limited through treatment and preventive measures.